

Prediction of Coronavirus Anxiety Based on Cognitive Emotion Regulation in The Working Staff of Shahid Beheshti Hospital in Shiraz

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ABSTRACT

The aim of this study was to predict coronavirus anxiety on cognitive emotion regulation in the working staff of Shahid Beheshti Hospital in Shiraz. The design of the present study was descriptive and correlational. The statistical population of the study consisted of all employees of Shahid Beheshti Hospital in Shiraz in 2021. From among the whole statistical population, 220 individuals were selected by convenience sampling and participated in the study. Cognitive emotion regulation questionnaire (CERQ) and coronavirus anxiety of Alipour et al. (2019) were used to collect the data. After collecting and extracting the data, the participants' scores were analyzed using Pearson correlation coefficient and multiple regression analysis by SPSS-24 statistical software. The results of Pearson correlation coefficient showed that there is a negative correlation between adaptive emotion regulation style and coronavirus anxiety; also there is a positive correlation between maladaptive emotion regulation style and coronavirus anxiety. Besides, the results of multiple regression analysis showed that the adaptive emotion regulation with the beta coefficient of -0.11, and the maladaptive emotion regulation with the beta coefficient of 0.76 predict corona anxiety in the hospital staff of Shiraz. Based on the results, to reduce corona anxiety in the hospital staff, programs can be designed and implemented through workshops to increase positive cognitive emotion regulation strategies and reduce negative cognitive emotion regulation strategies.

Keywords: Corona anxiety, cognitive emotion regulation, hospital staff

Introduction

On January 30, 2020, the World Health Organization announced the incidence of the corona virus and declared a public health emergency. Since then, the corona virus has created a general medical crisis that requires an appropriate emergency response. At present, no information is available on the psychological and public health impact of the peak of the Covid-19 epidemic. This is particularly associated with uncertainty about the prevalence of the virus, and most research on this outbreak focuses on identifying the epidemiology and clinical features of infected patients (Huang, 2020) .

Considering that this disease puts a lot of pressure on people both physically and psychologically, culturally and socially (Shrewsbury, 2005) as well as the prominent role of corona anxiety on the staff of hospitals and the need to investigate the factors and variables related to this pervasive human problem and considering that corona anxiety can be a vulnerable factor for other psychological disorders in this occupational group and due to the limitations and threats of the effects of this disease on clinical staff, it is important to know the factors that may affect corona anxiety.

Research shows that the occurrence of respiratory diseases due to serious physical problems, working in hospitals and other occupational environments, and reduced quality of patients' life can cause stress and corona anxiety (Wu and McCogan, 2020; Valromorno, Kumba Terzo, Vacasana Grail, 2020) .

Most research focuses on patients' anxiety, but the fact is that during an epidemic of a disease such as corona, fear of disease and death, along with the disruption of daily activities, can cause healthy people to become involved with anxiety (Fischhoff, 2020) . To name a few only, the incidence of symptoms of anxiety (especially death anxiety), depression, and emotional disorders (Yao, Chen, Zhu, 2020); sleep problems (Zheng, Shang, Ma, Jia, Sun, Jiu et al., 2020), and post-traumatic stress disorder (Sun, Sun, Wu, Zhou, Cheng, Shang et al., 2020) has been highly frequently reported. Also, cognitively, the patients involved may experience an influx of annoying thoughts, avoiding behaviors, irritability, or emotional numbness (Bo, Lee, 2020 ; Sun, et al., 2020 [8]).

Examining this in the context of cognitive emotional behavioral perspective reveals that several factors underlie these reactions, which include important traits such as personality traits, coping styles, cognitive biases, and perhaps, more importantly, the method of cognitive emotion regulation.

One of the most important aspects of emotion is arousal and its regulation in response to stressors. In this case, emotion regulation strategies are considered as coping strategies (Garnefski and Karaj, Spinhoven, 2001) . But the most effective approach depends on the nature of the stressful situation (Folkman and Moskowitz, 2004) .

Many factors, including cognitive emotion regulation strategies, are associated with anxiety, and these factors may also be associated with corona anxiety. Emotion regulation involves conscious or unconscious cognitive, emotional, and behavioral strategies used to maintain, increase, and decrease an emotion (Strauss, Kivity, Huppert, 2019) .

Cognitive emotion regulation refers to all cognitive styles that people use to increase, decrease, or maintain emotional experiences, and suggest ways to cope with stressful situations and unfortunate events. Cognitive emotion regulation strategies are generally divided into two categories: positive and negative cognitive emotion regulation strategies. Positive strategies include acceptance, refocus on planning, positive refocusing, positive reappraisal, and putting in perspective, which are adaptive strategies to deal with stressful events and lead to improved self-esteem, social competence, and so on (Smith, Mason, Anderson and Lavender, 2019) . In contrast, negative strategies include self-blame, blaming others, rumination, and catastrophizing, which are maladaptive strategies to deal with stressful events and lead to stress, depression, other psychological trauma, etc. (Kai, Pan, Zhang, Wei, Dong, Deng, 2017)

Considering this, the present study seeks to answer the question of whether the components of cognitive emotion regulation are able to predict coronavirus anxiety in the staff of Shahid Beheshti Hospital in Shiraz. In this vein, in the present study, the following research question was addressed:

Are the components of cognitive emotion regulation able to predict coronavirus anxiety in the staff of Shahid Beheshti Hospital in Shiraz?

Methodology

Given the purpose, this research is an applied study, while in terms of methodology, it follows as descriptive-correlation procedure, during which the relationship between two variables in a group (staff of a hospital) is examined.

Population and statistical sample

The statistical population of the present study consisted of the staff of Shahid Beheshti Hospital in Shiraz in 2021, which included 1000 individuals. In the present study, the convenience sampling method was used. For this purpose, from all the staff of Shahid Beheshti Hospital in Shiraz, 220 volunteers were selected as the sample based on Morgan table.

Procedures

The participants were asked to complete the questionnaires. After completing the questionnaires, data were collected. To analyze the data, both descriptive statistics (mean, standard deviation) and inferential statistics (multivariate regression to measure predictability of variables) as well as Pearson correlation (to measure correlation between variables) were analyzed using SPSS software. The significance level was set at 0.01.

Results

The results of Pearson correlation coefficient between cognitive emotion regulation and coronary anxiety are presented in Table 1.

Table 1: Results of Pearson correlation coefficient between cognitive emotion regulation and coronary anxiety

Variable	Corona anxiety	
	Correlation coefficient	Level of significance
Emotion regulation total score	0.226**	0.003
Adaptive emotion regulation style	-0.679**	0.006
Acceptance subscale	-0.213**	0.005
Positive refocusing subscale	-0.210**	0.006
Refocus on planning subscale	-0.196**	0.012
Positive reappraisal subscale	-0.226**	0.003
Putting in perspective subscale	-0.206**	0.007
Maladaptive emotion regulation style	0.183**	0.010
Self-blame subscale	0.217**	0.005
Blaming others subscale	0.215**	0.005
Rumination subscale	0.222**	0.004
Catastrophizing subscale	0.226**	0.003

As can be seen in Table 1, there is a significant correlation between cognitive emotion regulation strategies and corona anxiety at the level of 0.01; also, there is a negative relationship between adaptive emotion regulation style with corona anxiety and a significant positive relationship with maladaptive emotion regulation style at the 0.01 level.

The results also show that the acceptance subscale, the positive refocusing subscale, the positive reappraisal subscale, and putting in perspective subscale have a significant negative relationship with corona anxiety at the 0.01 level and with the refocus on planning subscale at the 0.05 level. Also, self-blame subscale, blaming others subscale, rumination subscale and catastrophizing subscale have a significant positive relationship with corona anxiety at the level of 0.01.

Due to the significance of the correlation coefficient between cognitive emotion regulation strategies and corona anxiety, regression analysis was used to evaluate the predictability levels of cognitive emotion regulation strategies on corona anxiety.

Table 2 – Results of regression analysis on prediction of corona anxiety based on cognitive emotion regulation strategies

Model	Sum of Squares	df	Mean of squares	F	R	R ²	R ² _{adj}	Sig
Regression	82.09	11	7.46	6.95	0.572	0.328	0.280	0.000
Residue	168.50	157	1.07					
Total	250.59	168						

As can be seen in Table 2, the value of sig is less than 0.01, which shows the significance of the regression model; that is, at least one of the predictor variables has a significant effect on the criterion variable.

R² index (Multiple Determination Coefficient): This index specifies what percentage of the changes in the criterion variable are explained by the predictor variables, in other words, the percentage of the ability that predictor variables have to fit the dependent variable.

In this study, the value of R² is equal to 0.328, which means that emotion regulation skills have 32% ability to predict of corona anxiety and the remaining 68% are related to other factors.

R²_{adj} index (Adjusted Coefficient of Determination): This index examines the ability to predict the dependent variable by predictor variables in the community. In fact, with a slight adjustment, it extends the sample to the whole community.

The value of this coefficient in this study is 0.280, in other words, emotion regulation skills have 28% ability to predict corona anxiety.

Given the significance of the whole model, it must now be examined which of the coefficients is not zero; in other words, which variable or variables have a significant effect on the model. For this purpose, *t*-test is used.

Table 3- Standardized, non-standardized coefficients and t-statistics of variables involved in the regression transaction

Predictor Variable	Regression coefficients		T-Statistics	sig	Level of sig (assumed)
	Non-standardized	Standardized Beta			
Constant value	1.51		1.67	0.09	0.05
Adaptive emotion regulation style	-0.02	-0.20	2.35	0.02	0.05
Acceptance subscale	-0.03	-0.09	1.06	0.29	0.05
Positive refocusing subscale	-0.02	-0.09	0.95	0.34	0.05

Refocus on planning subscale	-0.07	-0.16	2.13	0.03	0.05
Positive reappraisal subscale	-0.06	-0.21	3.02	0.003	0.01
Putting in perspective subscale	-0.08	-0.24	3.49	0.001	0.01
Maladaptive emotion regulation style	0.03	0.28	-4.11	0.000	0.01
Self-blame subscale	0.05	0.17	-2.54	0.014	0.05
Blaming others subscale	0.03	0.11	-1.74	0.08	0.05
Rumination subscale	0.04	0.14	-2.00	0.04	0.05
Catastrophizing subscale	0.04	0.15	-2.13	0.03	0.05

As the results in Table 3 show, adaptive emotion regulation style and maladaptive emotion regulation style were able to predict corona anxiety. The beta coefficient of this prediction in the adaptive emotion regulation style is -0.20 and in the maladaptive emotion regulation style is 0.28.

Also, out of the adaptive emotion regulation style subscales, only the refocus on planning, positive reappraisal, and acceptance subscales, and out of the maladaptive emotion regulation subscales, only the self-blame, rumination, and catastrophizing subscales could predict anxiety.

Discussion and conclusion

Previously, the hypothesis of this study was formulated as follows:

Hypothesis: Cognitive emotion regulation components are able to predict coronavirus anxiety in hospital staff.

Based on the results of Table 2, there is a significant correlation between cognitive emotion regulation strategies and corona anxiety at the level of 0.01; also there is a negative relationship between adaptive emotion regulation style with corona anxiety and there is a significant positive relationship with maladaptive emotion regulation style at the level of 0.01.

The results also show that the acceptance subscale, the positive refocusing subscale, the positive reappraisal subscale, and the putting in perspective subscale have a significant negative relationship with corona anxiety at the level of 0.01 level and with the refocus on planning subscale at the 0.05 level. Also, there is a significant positive relationship between the self-blame, blaming others, rumination, and catastrophizing subscales with corona anxiety at the level of 0.01.

The results are consistent with the results of research by Liu, Yang and Zhang et al. (2020) [15].

This study showed that there is a significant negative correlation between adaptive emotion regulation styles and corona anxiety and a significant positive correlation between emotion-oriented styles and corona anxiety.

In the explanation of the results, it should be said that people with a cognitive emotion regulation style are constructive, have a positive attitude toward problems, and tend to accept and face problems. In fact, people with constructive emotion cognitive style use a problem-oriented approach and instead of engaging themselves in problem-related emotions, they seek to solve problems and focus on the problems themselves. In this way, people are more acting, planning, putting in perspectives, seeking solutions, and seeking guidance from others. They also become more actively involved in the problem and try to resolve the conflict in a desirable way.

The tendency of hospital staff to cognitively regulate constructive emotion increases their sense of self-efficacy as well as their self-confidence and personal abilities to properly cope with the coronavirus and its anxiety.

In the explanation of this finding based on the research of Poppa, Ntella et al. (2020) [16], it can be said that constructive emotion regulation strategies that are adaptive strategies to deal with stressful events improve self-esteem and social competence. On the contrary, maladaptive emotion regulation strategies which are non-adapted strategies for coping with stressful events, causes stress, depression, and other psychological trauma.

Also, adaptive and positive strategies have a positive relationship with the indices of health and quality of life, while maladaptive and negative strategies have a positive relationship with the indices of negative physical symptoms, depression, anxiety and stress. Therefore, it can be expected that with increasing positive and adaptive strategies and emotion regulation as well as decreasing negative and maladaptive strategies, the amount of corona anxiety in hospital staff will decrease.

The results also showed that non-constructive emotion regulation styles such as self-blame, blaming others, rumination and catastrophizing have a significant negative relationship with coronavirus anxiety in hospital staff. This means that those who act emotionally when faced with problems feel lonely and tend to ignore, ruminate and catastrophize problems instead of dealing with them, so they will have lower self-efficacy in stressful situations, and hence corona anxiety increases in them.

The use of maladaptive emotion regulation styles in the face of complex external issues and situations disallows an individual to use his/her intellectual and psychological potentials. This feeling inhibits mental and physical competence, and gradually reduces a person's belief in his/her own capacity, namely, self-efficacy; consequently, reducing self-efficacy and self-confidence can elevate corona anxiety. In addition, it can be said that adopting a non-constructive emotion regulation style such as self-blame, blaming others, rumination and catastrophizing may not only reduce the level of activity of individuals, but also cause indifference and inattention to complex issues and situations. This style can indicate isolation and helplessness in problematic situations; therefore, those who employ this emotion

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regulation style in the face of problems will have more corona anxiety due to feeling alone and lacking the necessary support.

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