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Predictors of cognitive emotion regulation strategies: Iranian nurses

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Abstract:

BACKGROUND: Nurses have a challenging job and encounter more stressful situations. In response to these situations, they demonstrate adaptive or maladaptive cognitive emotion regulation strategies (CERS). As there is a lack of literature regarding the factors predicting the selection of CERS, the present study aimed to investigate the role of age, sex, marital status, working experience, type of ward, and education level in predicting these strategies in Iranian nurses.

MATERIALS AND METHODS: A descriptive correlational study was conducted to examine predictive factors' emotion regulation strategies used by 193 nurses who worked at six hospitals under the supervision of Qazvin University of Medical Sciences in 2018. The study population were selected by stratified random sampling method. Data were collected by two questionnaires, one demographic questionnaire and the other was Cognitive Emotion Regulation Questionnaire conducted by Garnefski ($\alpha = 0.8$). Data analysis was performed using correlation and multiple linear regression.

RESULTS: The results showed that there is a significant relationship between the "type of ward" and "age" with adaptive and maladaptive strategies. In the multiple linear regression model, two variables of age ($P = 0.03$) and type of ward ($P = 0.04$) were able to predict 23% of variance CERS.

CONCLUSIONS: Based on the results of this study, health-care providers and hospital managers should pay attention to factors related to adaptive and maladaptive CERS.

Keywords:

Cognitive emotion regulation, Iran, nurse, predicting factors

Introduction

Health-care system is an integral part of any sustainable development program for a country, as it has a direct link to human health.^[1] To achieve a high-quality system, working staff including nurses must be lively, healthy, and have a good morale.^[1,2] Due to their severe nature of the job, they encounter stressful situations frequently. These include dealing with chronic or near-death patients for a long time, difficult responsibilities, numerous requests from the patient and his/her family, low access to recreational and welfare facilities, rapid developments in technology, facing the death of patients, lack of psychological support, and difficult

regulations against them.^[3,4] Daily exposure to these situations has a negative effect on nurses' psychological health.^[5,6] As a result, nurses should acquire specific skills to deal with negative emotions derived from stress.

Psychologists believe that emotions have an important role in different aspects of life, like adapting to changes and stressful events.^[7,8] This issue is so important that psychological theorists believe that to have a successful life, in addition to mental strengths, one should have sufficient skills in management of emotions.^[9] One of the most common strategies is managing emotions via cognitive processes or cognitive emotion regulation (CER).^[10,11] Cognitive process helps people to regulate their feelings and emotions and no relinquish to intensive emotions. CER

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strategies (CERS) are divided into two categories: first, adaptive strategies which include “positive refocusing,” “positive reappraisal,” “focus on planning,” “acceptance,” and “putting into perspective”. Second is maladaptive strategy which includes “self-blame,” “catastrophizing,” “rumination,” and “blaming others.”^[10,12,13]

Selection of adaptive or maladaptive emotion regulation strategies is influential on matters like interpersonal interactions,^[14,15] psychological health,^[15,16] and physical health, and therefore, disorder in emotion regulation is cited as the main factor of producing mental and physical disorders by psychologists.^[7,15,17] Researchers mention different factors which affect the selection of emotion regulation strategies.

A study conducted by Orly *et al.*, demonstrated that male nurses tend to use adaptive cognitive regulation, while female nurses tend to use negative strategies.^[18] Ohue *et al.* concluded that male nurses have more stress and job-related emotion than their female colleagues.^[19] According to the research conducted by Koopman *et al.*, the relationship between nurses’ mental health and their level of education is significant.^[20] However, Por *et al.* demonstrated that there is not a significant relationship between emotions and level of education of nurses and midwives.^[21]

The difficult nature of the nursing profession can alter the social and personal aspects of the nurses. As a result, to avoid job stress and achieve a better mental health nurse, predictive factors selecting CER strategies should be studied carefully. Thus, the present study aimed to analyze variables such as age, sex, marital status, working experience, type of ward, and education level to predict the select of CERS in Iranian nurses.

Materials and Methods

This was a descriptive-correlational study conducted to investigate the predictive factors of emotion regulation strategies in the nurses. The study population consisted of nurses who worked in six teaching hospitals under the supervision of Qazvin University of Medical Sciences, Qazvin, Iran, in 2018.

The total nurses who worked in this six hospitals were $n = 970$ (Bouali Hospital = 316, Rajaei Hospital = 153, Kowsar Hospital = 97, Qods Hospital = 133, 22 Bahman Hospital = 33, and Velayat Hospital = 238). According to the following formula, taking into account the mean of “self-blame” (2.84), confidence interval (CI) was 0.95 and accuracy was 0.4.^[1] The sample size was estimated to be 193 people.

$$n = \frac{(Z_{1-\frac{\alpha}{2}})^2 \times s^2}{d^2} = \frac{(1.96)^2 \times (2.84)^2}{(0.4)^2} = 193$$

Considering the total population of nurses who work in six teaching hospitals ($N = 970$), number of study samples ($n = 193$), and number of nurses who worked in each hospital (n_i) and using the following formula, the number of samples in each hospital was estimated.

$$n = \frac{n_i}{N} \times 193$$

Therefore, the sample number for Bouali Hospital = 63, Kowsar Hospital = 19, Qods Hospital = 27, 22 Bahman Hospital = 7, Velayat Hospital = 47, and Rajaei Hospital = 30 was determined.

Then, the hospital wards were considered as the strata. The number of samples assigned to each ward was estimated based on the ratio of nurses in that ward to total hospital nurses. Then, the list of nurses in each ward was received based on inclusion and exclusion criteria. Finally, the samples from each ward were selected by a simple random sampling method through the lottery.

The inclusion criteria for participants included (i) willingness to participate in the research, (ii) at least 1 year working experience,^[22] and (iii) not having a serious physical or mental illnesses based on self-reporting. Participants who reported extreme stress such as the death of a loved one, divorce, and others in the past month were excluded from the study.

The instruments used in the present study included a demographic characteristics questionnaire and the CER Questionnaire (CERQ).

Demographic characteristics consisted of data about age, sex, marital status, academic degree, working experience (years), and type of ward. The validity of this tool was approved by nursing and midwifery faculty members.

CERQ was conducted by Garnefski *et al.*^[12] This questionnaire is a 36-item self-report tool to identify cognitive strategies. The questionnaire included nine subscales that represented different types of CERS. CERS are divided into two categories: (i) adaptive strategies which include (a) positive refocusing, (b) positive reappraisal, (c) focus on planning, (d) acceptance, and (e) putting into perspective and (ii) maladaptive strategies which include (a) self-blame, (b) catastrophizing, (c) rumination, and (d) blaming others. The items are scored using a 5-point Likert-type scale as follows: (1) Never, (2) Sometimes, (3) Regularly, (4) Often, and (5) Always. The score of each strategy is calculated by summing the scores of its items and can range from 4 to 20. Therefore, the total CERQ score ranges from 36 to 180. High scores on each subscale reflect the greater use of this strategy when encountering a stressful and

negative situation. The Persian version of the Iranian CERQ has been standardized by Hasani. Evaluating the psychometric properties of the test proposed by Garnefski *et al.*, Hasani determined the reliability of the test using Cronbach’s alpha coefficient to be 0.87, 0.91, and 0.93. In Iran, the validity of the test was also evaluated by correlating the total score with the subscale scores of the test, ranging from 0.40-0.68 with a mean of 0.56, all of which were statistically significant.^[23-26]

Data were analyzed in SPSS software, version 21 (SPSS Inc. Released 2007 SPSS for Windows, Version 21. Chicago, SPSS Inc.). Descriptive analysis, frequency, mean, and standard deviation (SD) were used to describe the participant demographic variables. The effects of all independent variables on each dependent variable were analyzed using multiple linear regression models using the inter method. All tests were two tailed, and statistical significance was considered for $P < 0.05$.

This study is adapted from a master’s thesis and was approved by the Research Council and the Ethical Committee of Qazvin University of Medical Sciences (IR.QUMS.REC.1395.259). The researcher referred to the nursing office of the hospitals under the supervision of Qazvin University of Medical Sciences and submitted the study authorization. All participants were informed about study aims and procedures before signing informed consent. They were also assured about the confidentiality and anonymity of their information. Moreover, they were allowed to leave the study whenever they wish.

Results

Based on the results of the study from 193 nurses, 168 (87%) were female. Mean age and its SD was 29.9 ± 5.65 and their working experience was 6.79 ± 5.4 years. Moreover, 65.3% of nurses were married and 93.8% of them have bachelor degree in nursing. Regarding the type of ward, 56% of nurses were worked in general wards. The results

of univariate analyses of total CERQ scores based on categorical demographic variables are shown in Table 1.

Table 1 shows the univariate analyses of total CERQ scores based on demographic variables. In univariate analysis, there was a significant relationship between the type of ward and use of maladaptive strategies, as maladaptive strategies scores were higher among nurses working in the General wards than critical care wards. This means that nurses working in general wards were more likely to use maladaptive strategies. The results of univariate analyses of total CERQ scores and its dimensions based on continuous demographic variables are shown in Table 2.

Table 2 shows the univariate analyses of total CERQ scores and its dimensions based on continuous demographic variables. There was a significant inverse relationship between “rumination” and work experience, meaning that with increasing work experience, the use of “rumination” strategy will decrease ($r = -0.189$, $P < 0.01$), as well as “putting into perspective” was statistically significantly correlated with age so that with increasing age the rate of using “putting into perspective” strategy will increase ($r = 0.144$, $P < 0.05$). “Acceptance” strategy had a direct significant weak relationship with age ($r = 0.212$, $P < 0.01$) and work experience ($r = 0.214$, $P < 0.01$) so that with increasing age and work experience, the rate of using “acceptance” strategy will increase. Moreover, the adaptive strategy score was statistically correlated with age so that with increasing age, the rate of using adaptive strategies will increase ($r = 0.15$, $P < 0.05$). The results of multiple linear regression of emotions cognitive regulation strategies based on predictive factors are shown in Table 3.

Multiple linear regression

Table 3 shows the multiple linear regression of emotions cognitive regulation strategies based on predictive factors. The results showed that there is a significant

Table 1: Univariate analyses of total Cognitive Emotion Regulation Questionnaire scores based on categorical demographic variables

Variables	Total score of CERQ	P	Score of adaptive strategies	P	Score of maladaptive strategies	P
Sex						
Female	114.27±12.31	0.85	68.29±9.8	0.22	45.61±7.04	0.16
Male	114.8±19.99		71±12.99		43.32±10.99	
Academic degree						
B. Sc.	114.54±13.24	0.42	68.86±10.14	0.26	45.26±7.34	0.72
M. Sc.	111.23±17.2		65.41±12.2		46.08±12.01	
Marital status						
Married	112±12.86	0.53	68.81±10.06	0.75	44.73±7.22	0.14
Single	115.1±14.65		68.32±10.73		46.41±8.39	
Type of ward						
General	112.21±13.19	0.05	69.19±10.1	0.4	46.55±7.78	0.01
Intensive	116.01±13.54		67.95±10.51		43.74±7.27	

t-test. CERQ=Cognitive Emotion Regulation Questionnaire

Table 2: Univariate analyses of total Cognitive Emotion Regulation Questionnaire scores and its dimensions based on continuous demographic variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Age														
Working experience	0.943**													
Self-blame	-0.015	-0.066												
Acceptance	0.212**	0.214**	0.217**											
Rumination	-0.13	-0.189**	0.531**	0.007										
Positive refocusing	0.112	0.133	-0.035	0.407**	-0.207**									
Refocus on planning	0.039	0.003	0.265**	0.094	0.31**	0.498**								
Positive reappraisal	0.081	0.045	0.215**	0.068	0.191**	0.525**	0.739**							
Putting into perspective	0.144*	0.116	0.259**	0.373**	0.081	0.529**	0.454**	0.536**						
Catastrophizing	-0.053	-0.118	0.436**	0.027	0.48**	-0.278**	0.017	-0.015	-0.028					
Other-blame	-0.001	0	0.228**	0.273**	0.086	-0.071	-0.106	-0.117	0.063	0.352**				
Adaptive strategies score	0.15*	0.13												
Maladaptive strategies score	-0.07	-0.13												
Total CERQ scores	0.077	0.023	0.649**	0.484**	0.526**	0.464**	0.686**	0.656**	0.662**	0.399**	0.339**			

Pearson correlation test. *Correlation is significant at the 0.05 level, **Correlation is significant at the 0.01 level. CERQ=Cognitive Emotion Regulation Questionnaire

Table 3: Multiple linear regression of emotions cognitive regulation strategies based on predictive factors

Predictor variables	B	SE	Confidence interval		t	P
			Lower limit	Upper limit		
Sex	-0.075	2.952	-5.899	5.75	0.025	0.98
Age	1.138	0.52	0.112	2.164	2.188	0.03
Academic degree	-4.423	4.084	-12.479	3.633	1.083	0.26
Working experience	-0.0893	0.597	-2.071	0.285	1.498	0.13
Marital status	-1.582	2.2	-5.922	2.758	0.719	0.47
Type of ward	3.842	2.007	0.118	7.801	1.914	0.04

R²=0.23. SE=Standard deviation

relationship between age and adaptive strategies ($\beta = 1.138, P < 0.03$). Furthermore, there is a significant relationship between the type of ward and maladaptive strategies ($\beta = -3.843, P < 0.04$). Finally, in the multiple linear regression model, two variables of age ($P = 0.03, CI = 0.112, 2.164$) and type of ward ($P = 0.04, CI = -0.118, 7.801$) were able to predict 23% of variance CERS.

Discussion

The results showed that there is a significant relationship between the type of ward and use of maladaptive strategies. Hence, maladaptive strategy scores were higher among nurses working in the general wards. This means that nurses working in the general wards were more likely to use maladaptive strategies such as “self-blame” and “catastrophizing” than the critical care nurses. Studies focusing on select of strategies by nurses in different departments have shown that the workplace influences CERS selection. For example, a study was conducted by Mikaeili and Ghaffari which aimed at the selection of strategies by psychiatric and neurology wards nurses. The findings showed that “positive reassessment” and “Rumination” are two common strategies which are employed by psychiatric and neurology wards nurses, that is, they have used both adaptive and maladaptive strategies.^[27] In another research, Easazadeh studied the

selection of CERS among nurses in general hospitals in the city of Ardabil. The results showed that nurses employed in these wards tend to use strategies such as “rumination” and “catastrophizing” that is two subscales of maladaptive strategies.^[28] Kring believes that selection of each strategy has its own consequences. In fact, the ability to successfully regulate emotions is directly related to a number of physical, mental, and social benefits. On the other hand, failure to select the adaptive strategy will lead to mechanisms underlying mood and anxiety disorders.^[24,10] In this regard, the results of numerous studies have shown that the use of adaptive strategies, such as “putting into perspective” and “acceptance” (strategies employed by elderly nurses), can reduce anxiety, depression, and stress.^[29-31] Hegney *et al.* reported that using maladaptive strategies such as “catastrophizing,” “self-blame,” and “blaming others” were correlated with job dissatisfaction and burnout, lack of self-confidence, lower attendance, drug abuse, and depression.^[32]

In addition, the results showed a significant relationship between age and CERS. Hence, with increasing age, “putting into perspective” strategy and “acceptance” strategy were increased. Finally, in the multiple linear regression model, two variables of “age” and “type of ward” were able to predict 23% of changes in CERS. In

line with the findings of this study, the results of the study by Mollart *et al.* and Juthberg *et al.* also showed a significant negative correlation between age and job burnout, and younger nurses were more likely to have psychological disorders.^[33,34]

A study conducted by Masumoto *et al.* found that older and more experienced nurses have less stress and anxiety in comparison to younger nurses.^[35] Thus, they can properly select effective and adaptive CERS. As the age and working experience increases, nurses will probably acquire the skills needed for regulating emotions through multiple methods, and they start utilizing them.^[36] Moreover, higher age and experience will lead to better relationships with colleagues including other nurses, management, and all other staff. These lead to better support while confronting a stressful situation and increases the chance of selecting an adaptive strategy,^[37] although the possible reasons for this finding require more extensive studies.

Since the tools of this study were self-reporting, the participants may have not the proper understanding of questions, or maybe, they do not answer honestly. To overcome this issue, it is recommended that future studies concentrate on qualitative methods with unstructured interviews.

Conclusions

The results of this study showed type of ward (general or critical care ward) and age can be predictors of selection adaptive or maladaptive strategies. Nurse managers, health planners, and policymakers can use the results of this research to solve daily challenges and plan more appropriately.

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Conflicts of interest

There are no conflicts of interest.

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