



## The Effect of Resilience and Optimism on Emotional Exhaustion and Job Stress of Nurses in the Fighting against Epidemics

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### Abstract

**Introduction:** Increasing job stress weakens the nurses' health, subsequently increases emotional exhaustion, and decreases their efficiency; therefore, the aim of this study was to investigate the effect of resilience and optimism on emotional exhaustion and job stress in nurses fighting against the COVID-19 epidemic in Hajar Hospital of Shahrekord in Iran in 2021-2022.

**Methods:** The method of the current study is practical in terms of purpose and descriptive survey in terms of data collection. The statistical population included 330 nurses working in inpatient wards of patients with COVID-19 in Hajar Hospital of Shahrekord; the sample size was determined using Cochran's formula (178 people) and available methods. The data were collected through standard questionnaires including resilience questionnaire by Connor and Davidson (2003); optimism questionnaire by Caliskan & Uzunkol (2018); job stress questionnaire by Sosik & Godshalk (2000), and emotional exhaustion questionnaire by Maslach & Jackson (1981).

**Results:** The findings showed that job stress had a significant effect on the nurses' emotional exhaustion ( $P=0.000$ ). Also, optimism had a significant effect on the nurses' emotional exhaustion with the mediation of job stress ( $P=0.004$ ) and resilience had a significant effect on the nurses' emotional exhaustion with the mediation of job stress ( $P=0.025$ ).

**Conclusion:** According to the results of the research, it was found that as nurses' optimism and resilience increased and their stress decreased, their emotional exhaustion also decreased. Therefore, hospital supervisors could be helpful in formulating strategies in the field of increasing hope and positive energy, as well as training nurses to enhance their resilience.

**Keywords:** Resilience, Optimism, Emotional exhaustion, Job stress, COVID-19

### Article History:

Received: 26 March 2023

Accepted: 12 June 2023

### Please cite this paper as:

Dehghanizadeh M, Jalali F, Badfar Chaleshtori S. The Effect of Resilience and Optimism on Emotional Exhaustion and Job Stress of Nurses in the Fighting against Epidemics. Health Man & Info Sci. 2023; 10(2): 78-86. doi: 10.30476/JHMI.2024.101085.1195.

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### Introduction

The COVID-19 disease, which started in the city of China Wuhan, was initially considered as an epidemic that could affect not only China, but also the surrounding countries; in a short period, it became a global epidemic (1). Despite all the precautionary measures taken, this disease threatened human life and caused the death of many people around the world. In addition, it has negatively affected almost all social and economic parameters in a short period. All these sudden and rapid changes have prompted scientists from different disciplines to investigate the effects of Covid-19. In this process, researchers have stated that this disease affects many fields such as politics, tourism, aviation, transportation, sports, and education (2); also, it creates wide behavioral and psychological results in society (3). In this context, one of the issues that researchers have less investigated is the mental and psychological negative effects of

COVID-19 on healthcare personnel and the treatment team (4). COVID-19 caused stressful factors and unique risks for the physical, mental, and emotional health of these people (5). Also, this epidemic caused healthcare personnel to change their professional life standards and face various challenges. The rapid spread of the epidemic of this disease and the rapid increase in the number of infected cases around the world have increased the degree of these problems. Ultimately, this has caused the healthcare personnel to work harder than before, get tired, stay awake more, spend less time with their family, and even live apart from them. In addition, these employees are at high risk of infection due to direct contact with COVID-19 patients (6).

Since nurses are the main part of care in the treatment team, who make up more than 75% of this team they are the first group to face the Covid-19 epidemic directly due to close contact with infected

patients and are trying to save the lives of sick patients with commitment and compassion; however, they risk their lives in reality while performing their duties. The fear and anxiety due to the possibility of contracting this disease will result in a large and destructive psychological burden for this part of society. These people endure long shifts, suffer from fatigue and mental and physical injuries, and expose themselves to illness to take care of patients (7). The experiences of nurses in previous epidemics due to other types of coronavirus, such as severe acute respiratory syndrome (8) and Middle East respiratory syndrome (9) show that the healthcare personnel, especially nurses, are afraid of the possibility of contracting the disease. Many of them due to the possibility of infection and the social pressure caused by the disease did not have much desire to be active during the outbreak of the disease. They also showed a high level of psychological dysfunction symptoms such as stress, anxiety, and even depression (10). Therefore, given that, the work environment of nurses is followed by continuous stress, which will lead to emotional exhaustion in them, and this will cause delay, absenteeism, a decrease in the quality of patient care, and conflicts with colleagues (11). Therefore, it is very important for nurses and other healthcare personnel to recognize such complications and get familiar with the worries and concerns that can fuel these symptoms.

Job burnout is a physical, emotional, and mental feeling that occurs as a result of chronic factors such as pressure and stress at work, burnout, and fatigue over time (12). One of the dimensions of job burnout is emotional exhaustion. It is the feeling of lack of energy in psychological resources in a person (13, 14). Along with emotional exhaustion, the level of performance at work decreases and productivity drops (15). Akdağ et al. (16) believe that with the increase in the job stress of the employees, burnout and emotional exhaustion will increase. It can be said that an increase in job stress weakens the general health and mental health of employees (17), and these factors increase employee burnout, thus increasing emotional exhaustion and decreasing their work efficiency (18). Therefore, it is necessary to determine the factors that reduce both job stress and emotional exhaustion.

Recently, resilience in the nursing profession has been given serious attention due to the spread of chronic diseases. It seems that resilience, which is the ability of people to resist and tolerate events, affects job stress and burnout (11). Resilience is a personality trait in people and is defined as the ability to deal with life's problems. As a psychological factor, this

term is related to the spread of chronic diseases (19). The level of resilience is different in different people. It can be said that people who have a more stubborn personality will have more resilience than other people (20). In the work environment, resilience also includes the person's active presence in the environment in addition to a person's sustainability against injuries and threatening conditions (21). Also, studies have shown that resilience affects job stress (22) and people who get the highest scores in resilience have the lowest level of psychological damage symptoms such as depression, stress, and anxiety (23). Also, since optimism affects people's mental expectations and behavior when fighting problems and makes them more ready to accept reality in life, it can be used as another component that affects emotional exhaustion and job stress (16, 24). Optimism can be defined as the tendency of people to expect good things to happen. Optimistic people act with confidence and do not give up until they reach their goals, even if they face problems and challenges regarding the goals they want to achieve. The approach of optimistic people to have good expectations for the future has a positive effect on their lives, such as protecting psychological health and reducing stress and anxiety. Considering these effects, it is believed that optimism creates a positive result in people's lives (6) and plays a very important role in the recovery of people from psychological stress (25). This means that if normal human perceptions are accompanied by optimism about the future, it helps people cope with very stressful and life-threatening events (26). The research results of Aguirre-Camacho and Moreno-Jiménez (27) and Yang et al. (24) also indicated that optimism improves job stress symptoms. Also, it is predicted that optimism can reduce the emotional exhaustion of healthcare personnel in the case of COVID-19 (6). Çetin et al. (28) found that there was a negative relationship between optimism and emotional exhaustion. In this regard, Tokmak (29) and Vizoso et al. (30) also stated that there was a negative relationship between optimism and emotional exhaustion. Given that the epidemic disease of COVID-19 can have a negative effect on the job stress and emotional exhaustion of healthcare personnel, there has been an attempt to determine whether the level of optimism of these employees affects their stress and emotional exhaustion or not. Since the physical and mental health of nurses is related to the quality of their performance in caring patients, the general view regarding stress and injuries is a preventive view rather than a treatment-seeking one, and the smallest mistake in each stage of

the provision of services by healthcare personnel can cause irreparable consequences on the physical and mental health of people, by analyzing the theoretical gap and the fact that so far no research has investigated the effect of these variables simultaneously, we aimed to conduct this research among the nurses of Hajar Shahrekord Hospital in the west of Iran; it will help the society and the health of patients; therefore, the main goal of the present study is to investigate the effect of resilience and optimism on job stress and emotional exhaustion of nurses in Hajar Shahrekord Hospital in the fight against the COVID-19 epidemic. According to the research literature, the relationships between the variables are displayed in Figure 1.

### Materials and Methods

The present research aimed to solve the existing problems; therefore, it is part of applied research and was carried out using the descriptive-survey method. The statistical population of this study included 330 nurses working in the inpatient wards of COVID-19 patients in Hajar Hospital of Shahrekord in the west of Iran. The available method was used for sampling due to the nurses' work load. To increase the homogeneity of the study population, we first matched the nurses participating in the research in terms of gender and work experience. The sample consisted of 178 subjects using Cochran's formula.

$$\frac{Nz^2p(1-p)}{(N-1)d^2 + z^2p(1-p)} = \frac{330 * 1.96^2 * .5 * .5}{(329 * 0.05^2) + (1.96^2 * .5 * .5)} = \frac{177}{762}$$

### Measuring Tool

The method of data collection in this research was using standard questionnaires. The standard questionnaire of resilience is used as a reference to determine the level of resilience. This questionnaire includes 25 items designed by Connor and Davidson (21), 9 items of which are selected according to the

objectives of the study. To measure the level of job stress, we used job stress questionnaire of the study of Sosik and Godshalk (31); its 9 items are used to determine the job stress level. To measure the level of emotional exhaustion, we used emotional exhaustion questionnaire proposed by Maslach and Jackson (32); its 8 items are used to determine the level of emotional exhaustion. To measure the level of optimism of optimism, we used the questionnaire of Caliskan and Uzunkol (33); its 4 items are used to determine the level of optimism. In this research, the questionnaires were scored based on a five-point Likert scale ranging from completely disagree (score 1) to completely agree (score 5).

### Reliability and Validity

The content validity of the standard questionnaires was checked and confirmed by several management professors. Also, it was necessary to study the construct validity in the structural equation modeling methodology to determine whether the selected items are accurate enough to measure the desired variables. For this purpose, confirmatory factor analysis was used and the items whose factor load was more than 0.3 were considered as suitable items for the desired variable. According to the factor loadings of each variable, question 27 from the optimism variable, question 1 from the resilience variable, and question 10 from the job stress variable were removed.

Cronbach's alpha coefficient and composite reliability were used to check the reliability of research variables, the results of which are presented in Table 1.

According to result shown in Table 1, Cronbach's alpha coefficient and combined reliability for all variables were more than 0.7, so the reliability of the questionnaires is suitable. In this research, SPSS was used to analyze the data. The normality of the data was checked through the skewness and kurtosis of the data before testing the hypotheses. Also, structural equation modeling (SEM) and AMOS software were used to investigate the research hypotheses.

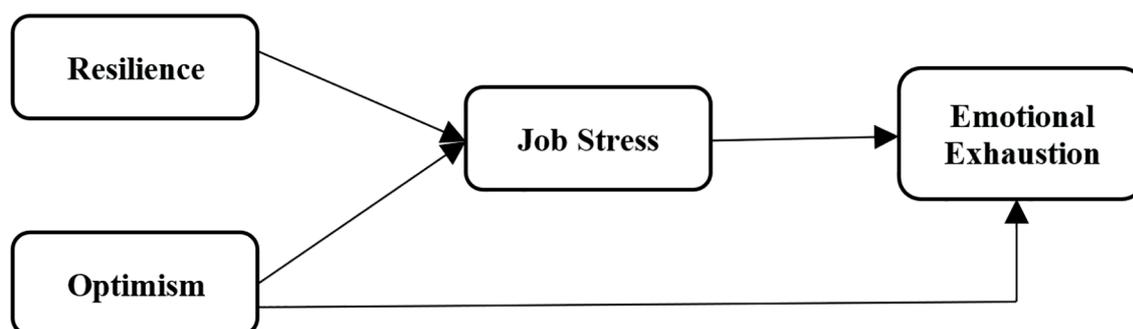


Figure 1: Conceptual model of research

**Table 1:** Test of reliability of measuring instruments

Variable	Cronbach's alpha	Composite reliability
Optimism	0.846	0.720
Resilience	0.770	0.811
Job stress	0.779	0.785
Emotional Exhaustion	0.885	0.888

**Table 2:** Normal status of data

Variable	Skewness	Kurtosis
Optimism	-0.125	-0.256
Resilience	-0.213	-0.183
Job stress	0.433	0.456
Emotional Exhaustion	0.318	-0.160

**Results**

Based on the findings of the descriptive statistics of the demographic characteristics of the sample, of a total of 178 people, 48 (27%) respondents were men, and 130 were women (73%). Therefore, in terms of gender, the selected sample was mostly female. Also, 53 respondents (29.2%) were under 30 years old; 83 people (46.6%) were 30- 40 years old; 37 people (20.8%) were 41 and 50 years old, and 5 people, (2.8%) were over 50 years old; therefore, the highest percentage of respondents in terms of age were people aged 30- 40 years old. In terms of education level, 10 respondents (5.6%) had an associate degree or lower; 149 respondents (83.7%) had a bachelor's degree; 19 subjects (10.7%) had a master's degree. In terms of work experience, 61 respondents (34.3%) had less than 10 years of experience; 68 subjects (38.2%) had 10 and 20 years of experience; 46 subjects (25.8%) had 21 and 30 years of work experience, and 3 subjects (1.7%) also had a work experience of more than 30 years. Therefore, most of them had between 10 and 20

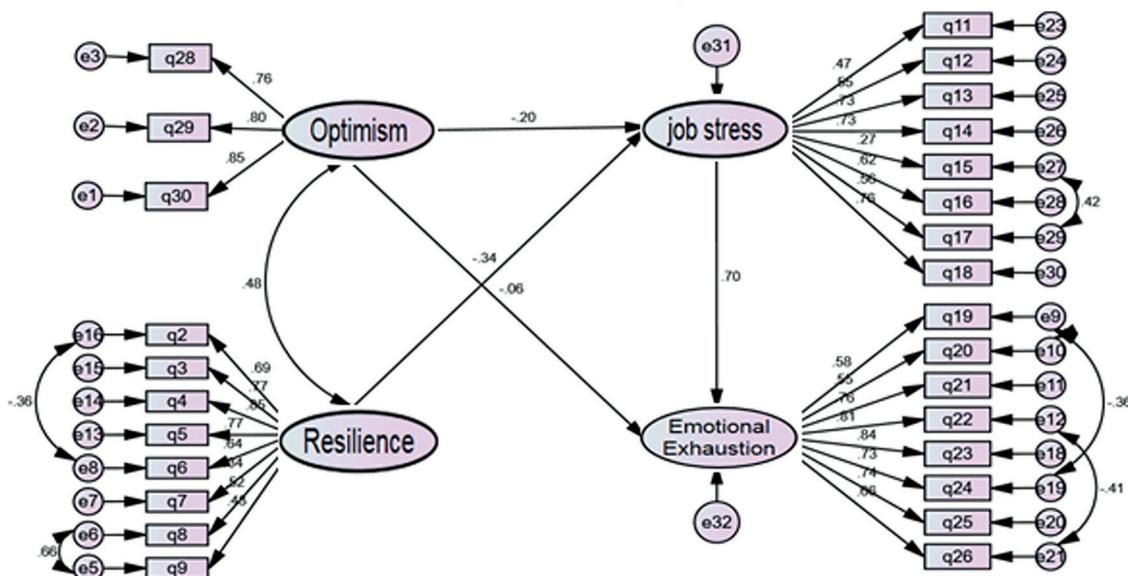
years of work experience.

In this research, the normality of the data was checked before testing the hypotheses, and the skewness and kurtosis of the data were used to perform this test. In general, if the value of skewness and kurtosis is smaller than -3 or larger than +3, the assumption of normality of data distribution is rejected (34). Table 2 shows whether the data distribution is normal.

According to the values obtained in Table 2 for skewness and kurtosis data related to each item of the questionnaire, which were all in the range of +3 to -3, the data of this questionnaire has a normal distribution. The modified model with a better fit can be seen in Figure 2.

The model fitting results are also presented in Table 3.

Two partial indicators of the critical ratio P and CR were used to test the significance of the hypotheses after examining and verifying the model. Based on the significance level of 0.05, the critical value should



**Figure 2:** Modified standard model

**Table 3:** The fit indices of the modified model

Index type	Model fit criterion	Amount	Acceptable limit	Result
Absolute fit indices	CMIN	804/324		-
	DF	313		-
	CMIN/DF	2.57	Between 1 and 5	Appropriate
Relative indicators	RMSEA	0.094	Below 0.1	Appropriate
	IFI	0.808	Above 0.9	Partly Appropriate
	CFI	0.806	Above 0.9	Partly Appropriate
	RFI	0.687	Above 0.6	Appropriate
	PCFI	0.719	Above 0.6	Appropriate
	PNFI	0.643	Above 0.6	Appropriate

**Table 4:** Results of the hypothesis test

Independent variable	Dependent variable	Estimate	Standard error	Critical value	P	Result
Optimism	Emotional Exhaustion	-0.047	0.055	-0.849	0.408	Un Supported
Resilience	Job stress	-0.686	0.221	-3.102	0.002	Supported
Optimism	Job stress	-0.191	0.094	-2.036	0.042	Supported
Job stress	Emotional Exhaustion	0.539	0.089	6.079	0.000	Supported

**Table 5:** Bootstrap results for mediated paths of the proposed pattern

Independent variable	Mediator variable	Dependent variable	Low limit	Up limit	Significant level	Result
Resilience	Job stress	Emotional Exhaustion	-0.282	-0.015	0.025	Supported
Optimism	Job stress	Emotional Exhaustion	-0.401	-0.090	0.004	Supported

be more than 1.96. Values smaller than 0.05 for the P value indicate a significant difference between the value calculated for the regression weights and the zero value at the 95% level. Table 4 shows the results of research hypotheses.

To check the fifth and sixth hypotheses and determine the significance of the mediating relationship and the indirect effect of the independent variable on the dependent variable through the mediator variable, the bootstrap method is used and its results are presented in Table 5.

Table 5 shows the mediating hypothesis of job stress in the effect of the nurses' resilience on their emotional exhaustion and job stress in the effect of nurses' optimism on their emotional exhaustion. Considering that the upper and lower limits of these two relationships do not include zero, these two indirect paths are also significant.

## Discussion

As a professional group, nurses provide their services continuously 24 hours a day. They maintain the health of people and coordinate the activities of other members of the healthcare team (10). Although nurses help the society and the health of patients a lot, they are involved in various pleasant and unpleasant mental and emotional states. Among the unpleasant

variables, we can mention job stress and emotional exhaustion. With the advent of COVID-19 pandemic and the lack of any definitive treatment or prevention of this disease, anxiety and fatigue prevail among nurses. Therefore, the current research aimed to investigate the effect of resilience and optimism on emotional exhaustion and job stress of nurses in Hajar Shahrekord Hospital in the fight against the COVID-19 pandemic.

The results of descriptive statistics about the independent variable of optimism and resilience showed that the nurses' answer to the questionnaire items (Likert 5-point scale) related to these two variables was higher than the average.

One of the reasons for the optimism and resilience in this situation is the increase in the number of people who have recovered from this disease. In addition, other precautionary measures such as the rapid preparation of necessary tests to diagnose patients with COVID-19, drugs used in treatment, and materials and equipment used by healthcare personnel and personnel training in this field have an important role in optimism and resilience of Hajar hospital nurses. In the case of the mediating variable of job stress and the dependent variable of emotional exhaustion, it is determined that the average response of the nurses of Hajar Hospital to these two variables

is lower than the average, and one of the reasons for that can be the increasing trend of overcoming this disease by the medical personnel.

The research findings about the first hypothesis showed that the significance level of this test exceeded 0.05, so this effect is not significant. In other words, optimism does not directly affect the nurses' emotional exhaustion. Despite the fact that studies such as Özdemir and Kerse (6); Rajabi Farjad and Yousefvand (35), and Akdağ et al. (16) showed a significant relationship for this relationship, but the findings of this hypothesis were not in line with them. Of course, in the sixth hypothesis, it was found that the variable of job stress could mediate this relationship; in other words, optimism affected the emotional exhaustion of nurses in Hajar Hospital indirectly through job stress. The findings of the research about the second hypothesis showed that the significance level of this test was less than 0.05. As a result, nurses' resilience had a significant effect on job stress, and considering the negative sign, this effect was reversed. Therefore, the greater the resilience of the nurses, the greater the ability of nurses to resist and tolerate events, so their job stress would be lower. The findings of this hypothesis were in line with those of Sardarzadeh et al. (36) and Pappa et al. (37). The findings of the research about the third hypothesis showed that the significance level of this test was less than 0.05; as a result, the nurses' optimism had a significant effect on job stress and, according to the negative sign, this effect was reversed. Therefore, the more the optimistic nurses are, the less their job stress will be. The findings of this hypothesis were in line with those of Rasuli and Moghtader (38); Özdemir and Kerse (6); and Yang et al. (24). The findings of the research about the fourth hypothesis showed that the significance level of this test was less than 0.05. As a result, nurses' job stress had a significant effect on emotional exhaustion, which according to the positive sign, this effect was direct. Therefore, the less the job stress nurses have, the less emotional exhaustion will be. The findings of this hypothesis were in line with the results of the Özdemir and Kerse's (6) research. The findings of the research on the fifth hypothesis showed that the significant level of the test was also lower than 0.05, so it was confirmed that the job stress variable could mediate this relationship. In other words, resilience was indirectly affecting the nurses' emotional exhaustion through the variable of job stress. It means that resilience could reduce emotional exhaustion when job stress was low in nurses. The findings of the sixth hypothesis showed that the significant

level of the test was also lower than 0.05, so it was confirmed that the job stress variable could mediate this relationship. In other words, optimism indirectly and through the variable of job stress affected the emotional exhaustion of nurses. Also, optimism in the process of work reduced the stress due to this epidemic and this reduced stress reduced emotional exhaustion.

## Conclusion

The work environment of nurses is followed by continuous stress, which will result in job stress and emotional exhaustion. With the advent of the COVID-19 pandemic and the lack of any definitive treatment or prevention of this disease, the anxiety and fatigue increased among nurses. This issue leaves many complications in the family, social, individual, and organizational lives, the most important of which are delay, absenteeism, reduction in the quality of patient care, conflict with colleagues, various psychological complaints, and change of job and burnout. In this regard, resilience can reduce job stress and emotional exhaustion. In addition, since optimism affects people's mental expectations when facing problems and their behavior when overcoming problems, it can affect emotional exhaustion and job stress as another component. Thus, given that in epidemics, especially during the COVID-19 epidemic, job stress and emotional exhaustion among Hajar Hospital Nurses were high. This research was looking for solutions and necessary precautions to minimize job stress and emotional exhaustion, which prevent the reduction of professional commitment and also the nurses' burnout. Thus, two factors of optimism and resilience were confirmed to affect job stress and emotional exhaustion. It was also found that the more the nurses' optimism and resilience, the less their stress and emotional exhaustion. Therefore, since it was unclear when this epidemic would completely disappear or whether another epidemic would appear. Therefore, according to the research findings, it is suggested that hospital supervisors should take the necessary steps by increasing hope and positive energy to reduce job stress and increase nurses' optimism. Also, since resilience is not purely inherent, one could interact better with the environment through teaching, learning, practice, experience, increase in her/his self against difficulties and maintenance of their mental health against problems; thus, the human resources management department in Hajar Hospital in Shahrekordis suggested to pay more attention to the above strategies and take the necessary measures, including training strategies to strengthen the

resilience in the nurses' training program to increase the tolerance and adaptability of the nurses to the disease, and maintain and enhance their mental health. It is also suggested that the human resources management unit, when hiring nurses, should consider the level of resilience and optimism of nurses by conducting personality tests so that nurses have a better attitude against negative factors in the work environment. It is also suggested that since the level of stress and emotional exhaustion of nurses is a strong catalysis for measuring their job performance, the human resources management unit can remember that the level of positive personality traits such as resilience and optimism might decrease in nurses and thus make the necessary arrangements in this regard. Also, given that the research model showed that the impact of negative factors such as job stress and emotional exhaustion be reduced with positive psychological factors such as resilience and optimism, it is, therefore, suggested that the human resources management unit of Hajar Hospital, should take measures to strengthen these positive factors; for example, consultants and clinical psychologists at the hospital can reduce the fear of COVID-19 by holding psychological workshops such as teaching positive psychological dimensions including life expectancy, optimism and resilience, and meaning in life to improve better confrontation of the health defenders with COVID-19.

There were limitations to the implementation of this study, such as the nurses' fatigue and boredom, given their work pressure that may have caused their carelessness in filling the questionnaires; however, there was an attempt to provide the questionnaires to nurses with more suitable conditions as far as possible. Also, since in this research, the data was collected using standard questionnaires, it is suggested that in future researches, the researchers should conduct interviews with the nurses of Hajar Hospital and use a qualitative approach of grounded theory, to identify other variables affecting the emotional exhaustion of nurses, and then the research model should be developed.

### Acknowledgement

We thank the managers and nurses of Hajar Hospital of Shahrekord for supporting the authors in data collection.

### Authors' Contribution

MD: conceptualization, methodology, data analysis, manuscript writing. FJ: methodology, data analysis, manuscript writing. SB: data gathering, data analysis, manuscript writing. All authors read and approved the final manuscript.

### Funding

The authors declare no financial support involved.

### Ethics Approval

All ethical principles were considered in this article.

**Conflict of Interest:** None declared.

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