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PREDICTING JOB BURNOUT AND CAREER LIFE QUALITY OF NURSES BASED ON THE HEALTH BELIEF MODEL AND MEDIATING ROLE OF PSYCHOSOMATIC SYMPTOMS

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Abstract

Objective: *The human environment includes physical, social and psychological factors, each of which plays an important role in human health. One of the stress-causing factors in humans is their work environment, which can affect other areas of their lives. The aim of the present study was to explain the role of the health belief model in predicting job burnout and quality of work life indicators with an emphasis on psychosomatic symptoms in nurses working in the intensive care unit of Covid-19 patients in Mashhad.*

Material and methods: *For this purpose, 200 of the nurses working in the care department of Covid-19 patients in Mashhad city were selected by systematic random sampling. Questionnaires of job burnout, psychosomatic disorders, quality of work life and health belief model questionnaires were implemented on the research sample. The findings were analyzed using spss software version 22 and Amos software and using structural equation modeling and path analysis.*

Findings: *The results of the data analysis showed that in general, the desired model had a favorable fit in terms of statistics, and it was also found that the health belief model was able to provide a meaningful explanation for the paths of predicting job burnout and quality of work life. Also, psychosomatic symptoms showed a significant mediating role.*

Discussion: *These findings show that when facing mental problems related to the job of nurses, paying attention to psychological and emotional indicators can be of great importance.*

Keywords *Burnout, Psychosomatic symptoms, Quality of work life, Health belief model, Nurses*

Introduction

The new form of pneumonia caused by Covid-19 disease which causes serious damage to the respiratory system [*Huang C et al., 2020; Chan J. F. W et al., 2020*], which has been reported with a wide and rapid spread [*Chen H et al., 2020*] and due to the high prevalence and mortality in countries [*World Health Organization., 2020*], the World Health Organization It has been mentioned as an important global public health issue [*Zhu N et al., 2020*]. In addition to physical problems and injuries, there are also psychological challenges associated with this disease, and health care workers are no exception to this rule. People who work as medical personnel in medical centers and hospitals are at high risk of infection due to their contact with patients [*Li W et al., 2020*]. In fact, medical

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staff are responsible for taking care of infected patients, communicating directly with the patient's family, and sometimes asking about the patient's general condition [*Xiang Y. T et al., 2020*].

Based on studies, it has been determined that more than 60% of the medical staff of the Academy of Palliative Medicine in America [*Bagwell C. E et al., 2017*] and 50% of nurses in China suffer from burnout [*Fu X et al. 2015*]. On the other hand, one of the indicators threatened by the medical staff of hospitals is the quality of their work life. The quality of work life expresses the level of satisfaction of an employee with his personality and job, which is obtained through being at work and trying to achieve organizational goals. The concept of the quality of working life is related to other concepts such as job satisfaction, desire to leave work, the personality of the working person and the level of occupational stress experienced in the workplace [*Huang H. G et al., 2013*]. Confirming the test results of suspected Covid-19 cases and depicting the severe consequences of the disease and infection can also cause patients to experience states such as loneliness, anxiety, depression, insomnia and reduced adherence to treatment [*Shigemura J et al., 2020*] and in the treatment staff, symptoms of anxiety and Obsessions such as frequent checking of the patient's body temperature, strict quarantine of patients and forced contact with them, which can cause rejection by others, financial losses, being discriminated against and even being labeled [*Brooks S. K et al., 2020*].

The health belief model expresses the relationship between belief in health and health behaviors and focuses on people's personal perceptions about diseases and methods of disease prevention and the effect of these factors on the individual's performance regarding health compliance [*Vasheghani F et al., 2012*]. This model considers six factors as factors related to health performance: 1) perceived sensitivity to health threats, 2) severity of health threatening factors, 3) benefits of health behaviors, 4) barriers related to performing health behaviors, 5) action signs and 6) self-efficacy [*Tola H. H et al., 2016*]. Based on this, the two main components in the belief model of health-related behaviors are perception of risk threat and evaluation behavior. Perceived threat includes two sub-components, perceived sensitivity and threat severity [*Şimşekoğlu Ö., Lajunen T. 2008*], where perceived sensitivity expresses a person's feeling of vulnerability to a disease, and threat severity refers to a person's perception of the severity of the consequences of the disease. On the other hand, behavioral assessment includes the benefits of performing a health behavior and the obstacles to performing it [*Noar S. M., Zimmerman R. S. 2005*]. On the other hand, psychosomatic disorder is a condition in which psychological distress has a negative effect on physiological function. In fact, this disease is a malfunction or structural damage in the body's organs, which is caused by inappropriate and involuntary activation of the nervous system and biochemical response [*Brooks S. K et al., 2020*]. Nevertheless, it is clear that any type of physical illness resulting from this disorder has specific psychological and emotional backgrounds. On the other hand, these disorders include interactions between the mind and the body and in it the brain sends different messages through ways that are not yet known, which affect a person's consciousness and inform about the existence of a serious problem in the body. On the other hand, there are some mental or brain mechanisms that cause minor or undetectable changes in the nervous system that lead to the occurrence of these diseases [*Vasheghani F et al., 2012*]. Therefore, according to the mentioned cases, the question arises that the medical staff involved with the patients with Covid-19 virus, who are exposed to the most severe work pressures, and this problem intensifies the negative feelings leading to job burnout and the decrease in the quality of work life. Is this process based on the health belief model explainable and whether psychosomatic symptoms have a significant mediating role for this model or not?

Material and methods

The current research design was of correlational type, which was done by structural equation modeling using path analysis method. The statistical population in this research included all nurses who were working in the special care department of hospitals accepting patients with Covid-19. Among the nurses who had the criteria to enter the study and were able to participate in the study, 200 people were selected through available sampling, and after removing the incomplete questionnaires, 198

people were finally included in the analysis. The tools used in this research are: Burnout Questionnaire: The burnout questionnaire is the most common tool for measuring job burnout, which consists of 22 statements and includes three aspects of job burnout (emotional analysis - personality distortion - lack of personal success). It is measured in terms of frequency. 9 propositions are about emotional exhaustion, 5 propositions are about depersonalization and 8 propositions are about the feeling of personal sufficiency. The frequency of these feelings is measured with scores from 0 (never) to 6 (every day) and a separate score is obtained for each aspect. The validity and scientific reliability of Mazak burnout questionnaire was confirmed by Filian for the first time in Iran. He used the retest method to determine the scientific trust and the final results of both stages were calculated using the correlation test. The final results of the correlation show a strong correlation between the answers given in the two stages of the test and equal to 0.98 [*Noar S. M., Zimmerman R. S. 2005; Van Roy K et al., 2017*]. Questionnaire of psychosomatic disorders: In order to measure psychosomatic symptoms, the questionnaire of psychosomatic symptoms was used in a non-clinical environment. This questionnaire is self-reported and measures the intensity of psychosomatic symptoms experienced by the individual and has 20 items that are answered on a 5-point Likert scale. Mohr has mentioned the internal reliability of this questionnaire in different studies and with different samples between 0.7 and 0.93 [*Huang H. G et al., 2013*]. In Iran, Babamiri has reported the reliability of this questionnaire using the Cronbach's alpha method of 0.89 and its factorial validity as appropriate [*Tartakovsky E., Walsh S. D. 2016*]. Quality of Work Life Questionnaire: The Quality of Work Life Questionnaire by Mossadegh Rad et al. has 36 items with 5 options that measure the quality of work life of employees in 9 dimensions: participation in the organization, career advancement, solving individual problems, communication, motivation, job security, and rights. And it measures benefits, job pride and job stress.

Each dimension of the questionnaire has 4 items. A five-point Likert scale from very little (1 point) to very much (5 points) was used to answer the questionnaire questions. Obtaining a score less than 1.80, between 1.80 and 60.00, between 3.40 and 3.61 and more than 4.20 indicates very poor, poor, average, good and very good quality of work life, respectively. The questionnaire has already been used in Iranian hospitals. This questionnaire has high validity and reliability, and the Cronbach's alpha coefficient of the questionnaire is equal to 0.91 [*Olds J., Malone J. 2016*]. Health Belief Model Questionnaire: This questionnaire consists of four parts: the first part is demographic questions (15 questions), the second part: awareness questions (17 questions), the third part: attitudinal questions (28 questions), which includes perceived sensitivity (4 questions), intensity Perceived (6 questions), perceived benefits (6 questions) and perceived obstacles (12 questions) and the fourth part: guidance for action (2 questions). The way of scoring the knowledge questions is that (1) point was given for each correct answer and (0) point was considered for each wrong answer. The way of dividing the scores is as follows: score 0-6 = weak knowledge (those who answer less than 33% of the questions correctly. score 7-11 = average knowledge (those who answer between 33% and 66% of the questions) give a correct answer). Score 12-17 = good knowledge (those who answer more than 66% of the questions correctly). Likert test was used to measure the attitude questions. Each question is completely agreed (5), agree (4), no opinion (3), disagree (2), completely disagree (1) were ranked. The way of dividing the attitude scores was in such a way that a score of 0-46 is a weak attitude, a score of 92-47 is an average attitude and a score of 93 The above was considered to be a good attitude. The reliability of this questionnaire was checked using Pearson's coefficient, and the results indicate the confirmation of the internal consistency of the questionnaire at the level of 0.95 [*Vasheghani F et al., 2012*]. Taking into account the possibility of some people not wanting to participate in the research or the invalidity of some of the returned questionnaires, the number of 100 people was considered as the initial sample. Demographic information of age, education and marital status, medical history and drug use, smoking and physical activity will be collected using a questionnaire. became. After obtaining consent and their agreement to participate in psychotherapy sessions, the patients will go to the clinic and

the sessions will begin. The sample in this study will include 100 people who will be selected by random sampling. Data analysis will be done using spss version 16 software and appropriate tests.

Results

The aim of the present study was to explain the mediating role of psychosomatic symptoms in predicting job burnout and the decline in the quality of work life based on the health belief model in nurses working in the care of Covid-19 patients. In this section, descriptive and inferential findings are presented separately.

A total of 198 patients participated in the study, of whom 95 (48%) were women and 103 (52%) men. Also, the data in Table 2 shows the distribution of the research sample based on employment history, and the results indicate that the majority of the research sample had employment history of less than 20 years.

The fit of the proposed model was evaluated based on chi-square index, comparative fit index, goodness of fit index, adjusted goodness of fit index and root mean square error of approximation. The results of structural equation analysis can be seen in Table 3.

As can be seen in Table 4, the ratio of chi-square to the degree of freedom is less than 2.5 and the root mean square error of approximation value is close to zero. Also, the value of goodness of fit index, adjusted goodness of fit index and comparative fit index are close to one. As a result, the presented model with a probability value of 0.000 had good fit and validity.

Table 5 shows the amount of direct, indirect and total effects of each structure compared to the variables defined in the path. Based on this, the direct and indirect effects have been investigated, and according to the highlighted cases that indicate the paths that could not be statistically significant, it was found that the health belief model, in total, has many paths to explain the pre-variables. Bin has statistically significant paths, and psychosomatic disorders did not show a significant path as a mediating variable for only one subscale.

Table 2.

Frequency of research participants based on employment history

Variable		Employment history			
		under 10 years old	10 to 20 years	20 to 30 years	More than 30 years
Female	A	24	29	24	18
	F	25%	30%	25%	20%
Man	A	34	32	21	16
	F	33%	32%	20%	15%
Total	A	58	61	45	34
	F	29%	30%	22%	17%

Notes: *A - Abundance, F - Frequency*

Discussion

Considering that most of the patients with Covid-19 are hospitalized in the intensive care unit; Nurses working in the intensive care unit are subject to experiencing double psychological pressure, which is the result of inappropriate professional behavior, feeling of lack of control and conflict of values, which ultimately leads to stress and burnout and other psychological problems for nurses in the care unit. becomes special [*Fu X et al. 2015*]. Job burnout is a negative mental state that is defined with the help of the emotional system, and it happens a lot in doctors and nurses in the form of personalization of negative events during work and a lack of feeling of personal success

Table 3.

Correlation of variables and subscales included in the research model

Variable	1	2	3	4	5	6	7	8	9
Perceived sensitivity	1								
Intensity of perception	0.815	1							
Perceived benefits	0.885	0.708	1						
Perceived barriers	0.745	0.725	0.774	1					
Disfigurement	-0.268	-0.321	-0.218	-0.249	1				
Emotional analysis	-0.290	-0.439	-0/324	-0.278	0.812	1			
Lack of personal success	-0.212	-0.334	-0.160	-0.451	0.822	0.717	1		
Psychosomatic disorders	-0.235	-0.260	-0.338	-0.185	0.289	0.446	0.330	1	
Quality of working life	0.327	0.297	0.392	0.323	-0.547	-0.275	-0.315	-0.460	1

Table 4.

Goodness of fit of the structural model

Variable	
Degrees of freedom	43
chi-square	78.047
X2/Df	1.492
Root mean square error of approximation	0.050
Goodness of fit index	0.918
Adjusted goodness of fit index	0.907
Comparative fit index	0.902
P Possibility	0.000

[*Tartakovsky E., Walsh S. D. 2016*]. In the behavioral discussion, awareness of the risk factors is very necessary for each person to help the person in making informed decisions about the continuation of certain behaviors that increase the risk of this disease [*Van Roy K et al., 2017*]. But what is more important is a person's understanding of the risk of a disease that affects his health-related functions [*Olds J., Malone J. 2016*]. The health belief model is based on the assumption that the amount of health behaviors performed, such as self-care behaviors, is rooted in people's beliefs about health and hygiene, and this leads people to observe personal hygiene and strengthen self-care behaviors in them [*Vasheghani F et al., 2012*]. Due to the limited awareness of this virus and the news that is spreading about it in the society, the emergence of public anxiety and fear is inevitable [*Al-Tawfiq J. A et al., 2014*], health professionals, due to direct contact with these patients, as much as possible are exposed to physical fatigue, fear, emotional disturbance and sleep problems [*Chan J. F et al., 2013*]. Due to the fact that most psychiatrists have not received sufficient training in the field of prevention and treatment of infectious diseases, and in addition, due to the focus of training courses on physical diseases, the level of awareness of doctors about mental health indicators is very low. These are the main reasons for limiting the clinical skills of the medical staff in controlling the potential transmission of this disease in psychiatric hospitals [*Xiang Y. T et al., 2020*].

The results of studies conducted at the global level show that the prevalence of psychosomatic disorders is contradictory and changes depending on gender, cultural, racial factors and at different social and economic levels [*Tola H. H et al., 2016*]. What manifests in the occurrence of this disorder

Table 5.

Direct, indirect and total effects for explaining the model

Variable	direct impact	Indirect effect	meaningful
Depersonalization to perceived sensitivity	0.238	0.128	0.123
Depersonalization is strongly perceived	0.241	0.185	0.048
Depersonalization to perceived benefits	0.381	0.235	0.021
Depersonalization into perceived obstacles	0.324	0.262	0.014
Depersonalization to psychosomatic disorders	0.288	0.204	0.112
Emotional analysis of perceived sensitivity	0.439	0.373	0.017
Emotional analysis is strongly perceived	0.310	0.238	0.035
Emotional analysis of perceived benefits	0.128	0.123	0.095
Emotional analysis of perceived barriers	0.181	0.099	0.124
Emotional analysis of psychosomatic disorders	0.387	0.239	0.011
Lack of success to perceived sensitivity	0.299	0.185	0.138
Success is highly perceived	0.417	0.284	0.020
Lack of success to perceived benefits	0.273	0.198	0.011
Lack of success due to perceived obstacles	0.247	0.181	0.067
Lack of success to psychosomatic disorders	0.288	0.211	0.025
The quality of working life is perceived sensitivity	0.132	0.054	0.037
The quality of working life is highly perceived	0.547	0.395	0.000
Quality of working life to perceived benefits	0.160	0.091	0.176
Quality of working life to perceived barriers	0.161	0.106	0.108
Quality of working life to psychosomatic disorders	0.236	0.197	0.043
Psychosomatic disorders to perceived sensitivity	0.296	-	0.01
Psychosomatic disorders are strongly perceived	0.256	-	0.041
Psychosomatic disorders to perceived benefits	0.260	-	0.038
Psychosomatic disorders to perceived barriers	0.248	-	0.032

is the role of mental pressure as a mediator between the individual's organism and stress-causing factors, which causes various physical disorders in them according to the abilities and conditions of the people under pressure [*Şimşekoğlu Ö., Lajunen T. 2008*]. On the other hand, one of the main features in the field of job challenges is creating an environment to improve the level of mental health of people as well as to acquire and develop job skills [*Zhao Z et al., 2003*]. Therefore, special emphasis should be placed on the role of the quality of communication with colleagues and employers as a kind of internal state of stable job satisfaction [*Al-Qahtani A. A et al., 2017*]. It is in such conditions that people's satisfaction with their work environment improves the level of mental health of a person in his professional and personal life. What an interpersonal communication in the work environment, along with factors related to physical and mental health, strengthens the work environment and the commitment of employees, and as a result, their satisfaction and reduction of job burnout.

One of the limitations of this research is the presence of disturbing variables such as the marital status and employment of the sample. Also, the limitation of this research to the city of Mashhad makes it necessary to be cautious in generalizing the results to other cities. It is suggested that researchers who are interested in the field of problems in the field of nursing, should also investigate the role of metacognitive variables and antecedent factors such as defense mechanisms and personality traits. The results of this research can be used in formulating intervention protocols to improve the quality of nurses' working life.

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