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The relationship between self-efficacy and health hardiness with the quality of work life of nurses working in the COVID-19 ward

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Original Article

Abstract

BACKGROUND: As nurses are in close contact with patients with coronavirus disease 2019 (COVID-19), they are more susceptible to infection and spread of the virus. Limited clinical knowledge of the COVID-19 virus and the lack of adequate supply of personal protective equipment (PPE) and lack of medical and personal protective equipment may lead to low work morale, absenteeism, apathy, and poor performance in nurses. Therefore, the emotional problems of nurses during the COVID-19 epidemic deserve more attention. This study was conducted to investigate self-efficacy and its relationship with health hardiness and quality of work life in nurses.

METHODS: This was a descriptive cross-sectional study conducted on 219 nurses working in hospitals (Tohid, Kowsar, and Be'sat hospitals) of Sanandaj City, Iran, in November 2021. The sampling method was proportional stratified random method. Questionnaires of demographic information, self-efficacy, health hardiness, and quality of work life were completed by nurses. Data analysis was performed using descriptive statistics tests, independent t-test, analysis of variance (ANOVA), Pearson correlation, and simple linear regression. The data were analyzed in SPSS software.

RESULTS: The quality of work life of 81.3% of participants was reported as moderate and 18.7% was reported as very good. Pearson's correlation coefficient showed that the relationship between self-efficacy and health hardiness was significant and there was a positive correlation between the two variables ($P < 0.001$, $r = 0.539$).

CONCLUSION: Given the low level of nurses' self-efficacy and its relationship with health hardiness, there is a need to promote nurses' self-efficacy and health hardiness for health professionals.

KEYWORDS: Efficacy; Health Hardiness; Nurses; COVID-19

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Introduction

In certain epidemics, the hospital staff are always on the front line and they risk their lives to conduct their duties.[1] This issue is due to the nature of their job because close contact with infectious patients for a long time is very important and effective.[2] Since nurses are more

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in close contact with patients with coronavirus disease 2019 (COVID-19), they are more vulnerable to infection and virus spread among colleagues and their families.[1] People may use different strategies to cope with difficult situations and stressful life factors.[3]

Self-efficacy and health-hardiness beliefs are two characteristics of personality and motivation that may affect mental health, success in education, life, etc. Self-efficacy, as one of the psychological characteristics of people, is a person's belief in the ability to show appropriate reactions to a specific situation and is one of the most basic mechanisms of incident management affecting people's health and life.[4] Individuals with high self-efficacy have more satisfaction and happiness in life[5] and can change their conditions and health status.[6] Therefore, self-efficacy in nurses can improve their lifestyle in all dimensions.[7] In some studies that have examined the relationship between health hardiness and self-efficacy, the results indicate positive relationships between hardiness and self-efficacy.[8,9] According to the literature review, people with higher self-efficacy are more likely to set challenging goals and are more committed to their duties.[9]

Based on Kubasa's concept of health hardiness, Pollock developed the Health-Related Hardiness Scale (HRHS) to measure the effects of hardiness in people with diagnosed health problems.[10]

Health hardiness shows the extent to which a person is committed to conducting health-related activities, controls his health, and considers life's stressful factors as an opportunity for growth.[11] People with high health hardiness usually have a positive evaluation of events, use appropriate coping strategies to deal with diseases, and consider the stressful sources of diseases as an opportunity for growth and learning.[12]

People's hardiness can reduce stress and increase adaptability and mental health. Stress and difficult conditions in nursing jobs can seriously affect a person's physical and mental efficiency and severely disrupt his physical and social health.[13]

Nurses often complain of overwork, rotating shift, and job stress. These problems cause a decrease in the quality of work life and intention to leave the job.[14]

Quality of work life for nurses is essential for the quality of care, recruitment, and retention of nurses and can affect the quality of nursing care at all levels. Improving the quality of the working life of personnel and nurses has been introduced as one of the important factors to ensure the sustainability of the health system.[15]

The quality of work life is a complex and multi-dimensional concept. This concept shows the attitudes and feelings of employees toward their jobs.[16] Quality of work life for nurses is the degree to which nurses can satisfy their essential and personal needs through working in medical centers and finally achieve organizational goals.[17]

In a study, the quality of work life among nurses was diverse, ranging from low to moderate and high.[18] Raeissi et al. demonstrated that the mean score of quality of work life was 2.62, which was a low level.[16] Moreover, Javanmardnejad et al. reported that the nurses did not have an optimum level of quality of working life.[17]

Protecting health workers is crucial in critical situations and emergencies because they are responsible for the preparation, rapid response, and critical decision-making to manage the health problems that can arise during these times.[3] However, when giving priority to supporting the public during the COVID-19 pandemic, health workers could be overlooked.[19]

In a study by Crowe et al., which was conducted to examine the mental health of nurses working in the intensive care unit (ICU), the results showed that they

experienced psychological distress [symptoms of post-traumatic stress disorder (PTSD), depression, anxiety, and stress] related to providing care to patients with COVID-19.[20] In addition, Ying et al. showed that depression was common among emergency department nurses during the COVID-19 pandemic.[19] The findings of the study by Akkus et al. showed that nurses caring for patients with COVID-19 in Turkey had been affected psychologically, socially, and physiologically.[21] Therefore, the emotional problems of nurses during the COVID-19 epidemic need more attention.[2]

Although research on the current COVID-19 pandemic has emerged and is continuing to evolve, there is little evidence exploring the impact of this pandemic on Iranian nurses working in the COVID-19 unit who provide direct care to patients. Therefore, considering the importance of the topic and the limited number of studies related to the psychological characteristics of nurses and the quality of their work life during the COVID-19 era, this study aimed to investigate self-efficacy and its relationship with health persistence and the quality of work life in nurses working in hospitals affiliated to Kurdistan University of Medical Sciences, Sanandaj, Iran, during COVID-19 pandemic.

Methods

This descriptive and analytical cross-sectional study was conducted from April 2021 to June 2021, in three public hospitals in Sanandaj City with a sample size of 219 people. The research population included all nurses working in Tohid, Kowsar, and Be'sat hospitals who had at least 3 months of experience actively working as a nurse in the COVID-19 wards. To determine the sample size, considering the correlation of 0.2 between the dependent variables (hardiness of health and quality of work life) with the independent variable (level of self-efficacy), the following formula was used:

$$w = \frac{1}{2} \ln \frac{1+r}{1-r}$$

$$N = +\left(\frac{Z_{1-\alpha/2} + Z_{1-\beta}}{w^2}\right)^2 + 3.$$

The sampling method in this research was a proportional stratified random sampling based on the number of nurses in each hospital. In this regard, 25% of all nurses from each hospital were examined. The study participants were selected based on the inclusion criteria. The criteria for entering the study included: having at least 3 months of work experience in the departments involved in the COVID-19 disease, the nurse's consent to participate in the research, and having a bachelor's degree, master's degree, or higher. Exclusion criteria included incomplete filling of questionnaires.

The data collection tool was a four-part questionnaire that included demographic information (including age, gender, level of education, marital status, work experience, type of work shift, and income), Sherer General Self-Efficacy Scale (SGSES), Revised Health Hardiness Inventory (RHHI-24), and quality of work life questionnaire.

SGSES: This scale has 17 items. The response format is a 5-point scale (1 = strongly disagree, 2 = disagree, 3= neutral, 4 = agree, 5 = strongly agree). Some of the items must be reversed-coded before scoring. The sum of the item scores on each domain (general and social) reflects the individual's self-efficacy or confidence levels. The validity and reliability of Persian version of this questionnaire have been confirmed.[22] The reliability coefficient of this test was 0.76 using Guttman's split-half method and 0.79 through Cronbach's alpha. This questionnaire has three subscales: desire to initiate, desire to expand efforts to complete the task, and resistance to facing obstacles.

RHHI-24: It is a self-report questionnaire that has 24 questions and four stable and reliable scales: (1) health value, (2) internal health locus of control, (3) external health locus of control, and (4) perceived health competence. The

response format is a 5-point scale (1 = strongly disagree, 2 = disagree, 3 = neither, 4 = agree, 5 = strongly agree). Gebhardt et al. confirmed the validity of the internal source instruments of internal and external health control. Cronbach's alpha also reported the reliability of the questionnaire as 0.79 in the normal sample and 0.78 in the students.[23]

Dasht Bozorgi and Shamshirgaran, reported its reliability based on Cronbach's alpha of 0.83.[13]

Quality of work life questionnaire: This questionnaire is based on Walton's model (1973) which includes 34 closed-answer questions and is designed to measure 8 components. The components include adequate and fair compensations, working conditions, use of capacities at work, opportunities at work, social integration at work, constitutionalism at work, occupied space by work in life, and societal relevance and importance in the work. The scoring of the questionnaire is based on a five-point Likert scale, which includes: very little, little, somewhat, much, and very much levels. If the score of the questionnaire is between 1 and 34, the quality of working life is poor, the score between 34 and 102 is average, and the score above 102 is very good. The validity and reliability of the questionnaire have been confirmed by Moradi et al.[24]

After obtaining informed consent and justifying the implementation of the project, the printed questionnaires were provided to the participants to fill out. To maintain the confidentiality of the data and comply with the ethical issues, paper questionnaires were placed in closed envelopes after completion, and there was no requirement for the samples to write their names on the questionnaires.

For data analysis, descriptive statistics tests [mean, standard deviation (SD), frequency, and percentage], independent t-tests (comparison of mean quantitative scores in two groups), analysis of variance (ANOVA) (comparison of quantitative variables in more than two groups), Pearson correlation (correlation of two quantitative variables), and simple linear regression were used with a significance level of 0.05. Data analysis was done using SPSS software (version 26, IBM Corporation, Armonk, NY, USA).

The study was approved by the Ethics Committee of the Kurdistan University of Medical Sciences with the following IR code of ethics (IR.MUK.REC.1400.298).

Results

The mean and SD of the age of the participants was 31.03 ± 5.65 years. The demographic and background characteristics of the participants in the study and their relationship with self-efficacy are presented in table 1. The results of table 1 showed that age and years of service had a significant relationship with self-efficacy.

Table 2 shows the mean, SD, and range of self-efficacy scores, health hardiness, and quality of work life and its components.

In total, the quality of work life of 187 (81.3%) participants was moderate, and that of 41 people (18.7%) was reported as very good.

Pearson's correlation coefficient (Table 3) showed that the relationship between self-efficacy and health hardiness was significant and there was a positive correlation between the two variables ($P < 0.001$, $r = 0.539$). That is, with the increase of self-efficacy, health hardiness also increases.

The results of linear regression of a single variable showed that health hardiness was a 28% predictor of self-efficacy in nurses [95% confidence interval (CI): 1.21-1.45, beta: 0.539, R squared: 0.29, adjusted R squared: 28%, $P < 0.001$].

Discussion

This cross-sectional study was conducted to investigate the level of self-efficacy and its relationship with the health hardiness and the quality of work life of nurses working in hospital wards during the COVID-19 pandemic. The present study's results showed a relationship between general self-efficacy and health hardiness in nurses.

Table 1. The relationship between the demographic and background characteristics of the participants in the study and self-efficacy

Variable	n (%)	Self-efficacy (mean ± SD)	P
Age (year)		31.03 ± 5.65	0.020
Sex			0.531
Men	87 (39.7)	63.80 ± 10.53	
Women	132 (60.3)	62.78 ± 9.74	
Marital status			0.857
Single	80 (36.5)	63.82 ± 10.11	
Married	139 (63.5)	62.81 ± 10.04	
Education status			0.664
Bachelor's degree	207 (94.5)	63.23 ± 10.13	
Master's degree	12 (5.5)	62.41 ± 8.94	
Shift work			0.968
Fixed in the morning	56 (25.6)	61.78 ± 10.12	
Rotatory	163 (74.4)	63.60 ± 10.02	
Workplace			0.380
Tohid	98 (44.7)	64.98 ± 9.77	
Kowsar	113 (51.6)	61.95 ± 10.17	
Be'sat	8 (3.7)	58.62 ± 8.68	
Income (million rials)			0.69
50-90	145 (66.2)	63.02 ± 10.66	
90-130	74 (33.8)	63.51 ± 8.80	
History of infection with COVID-19			0.229
Yes	175 (79.9)	62.82 ± 9.80	
No	44 (20.1)	64.63 ± 10.99	
History of hospitalization due to COVID-19			0.162
Yes	40 (18.3)	61.97 ± 11.47	
No	179 (81.7)	63.46 ± 9.72	
Having a physical illness			0.258
Yes	21 (9.6)	58.95 ± 11.70	
No	198 (90.4)	63.64 ± 9.79	
Medicine consumption			0.906
Yes	32 (14.6)	60.00 ± 10.24	
No	187 (85.4)	63.73 ± 9.95	
Years of service	-	2.79 ± 1.30	0.006

COVID-19: Coronavirus disease 2019; SD: Standard deviation

The mean score for self-efficacy in the present study is lower than that in the Chinese study[25] and another study conducted in Taiwan.[26]

The negative change in self-efficacy may be attributed to nurses' high stress and lack of protective equipment in the workplace. However, the difference in populations and settings might be another reason for this variation in the findings.

Whereas general self-efficacy is based on an individual's ability to cope effectively with stressful situations,[4] nurses have low self-efficacy scores, and their low self-efficacy can influence other aspects of their personality and work.[27] The decreasing level of self-efficacy in nurses indicates higher mental health problems among them. Nurses with low self-efficacy cannot prove their abilities at work, which causes them to have negative feelings towards themselves and their job, and a lack of interest and relative job satisfaction.[28]

Therefore, planning to improve nurses' self-efficacy by managers and policymakers of the health and treatment sector is necessary.

In the meantime, the role of nursing managers is important in applying meaningful, creative, and effective solutions to eliminate feelings of self-efficacy.

Table 2. Mean, standard deviation (SD), and range of self-efficacy, health hardiness, and quality of work life scores and their components

Variables	Minimum	Maximum	Mean ± SD
Total self-efficacy	33	85	19.63 ± 10.05
Initiator self-efficacy	7	37	26.58 ± 5.03
Task self-efficacy	13	30	21.88 ± 3.44
Resistance self-efficacy	5	15	11.10 ± 1.99
Total hardiness	65	116	91.93 ± 11.49
Health value	11	30	23.60 ± 3.68
Internal health locus of control	7	25	19.49 ± 3.31
External health locus of control	26	65	48.77 ± 7.41
Perceived health competence	11	30	23.60 ± 3.68
Total quality of work life	34	150	83.08 ± 22.10
Adequate and fair compensation	4	20	7.24 ± 3.44
Working conditions	4	19	9.60 ± 3.59
Use of capacities at work	3	15	8.32 ± 2.86
Opportunities at work	4	19	10.21 ± 3.35
Social integration at work	4	20	9.63 ± 3.85
Constitutionalism at work	6	30	13.53 ± 5.21
Occupied space by work in life	4	20	11.36 ± 3.48
Social relevance and importance of the work	5	25	13.15 ± 4.10

SD: Standard deviation

Table 3. Correlation coefficient between self-efficacy, health hardiness, and quality of work life

	Quality of work life	Health hardiness	Self-efficacy
Self-efficacy	0.004	0.539*	1
Health hardiness	0.094	1	
Quality of work life	1		

* Pearson's correlation showed a positive correlation between self-efficacy and health hardiness.

In the present study, the relationship between self-efficacy and health hardiness is significant, and there is a positive correlation between the two variables. Moreover, health hardiness is a 28% predictor of self-efficacy in nurses.

It has been demonstrated by earlier research that there is a strong link between health hardiness and self-efficacy.[8] Considering the significant relationship between all components of health hardiness and self-efficacy, it can be stated that nurses' work commitment is one of the effective factors in improving their self-efficacy, which is in line with the research conducted in this field.

Yu and Liang reported that the work commitment of the cabin crew had a significant relationship with their self-efficacy regarding first aid.[9] In addition, Park and Jung reported that employees' job self-efficacy had a positive relationship with job and organizational commitment.[29]

The results of our study show that nurses who have more control over their effort and influence and are more willing to accept this challenge are more likely to achieve their career goals. They are more focused on gaining recognition or promotion during their career; thus, they work hard to improve their professional skills.

People with health hardiness have a positive evaluation of events and use effective coping strategies to deal with illnesses. These people use their maximum resources and tend to re-evaluate health stressors as beneficial factors for growth and learning.[12] Studies conducted during the COVID-19 pandemic have shown that hardiness is a very important resource for coping with adverse events caused by this disease.[30,31]

Hardiness plays a protective role in reducing the risk of dysfunctional stress reactions

occurring in emergency workers during the current COVID-19 pandemic.[31] The results of Vagni et al.'s study highlighted that healthcare and emergency workers were exposed to numerous stressors associated with high arousal during the pandemic and health hardiness was negatively associated with stress.[31]

Considering the relationship between hardiness and mental health,[32] it can be said that tension and difficult conditions in the nursing profession have negative effects on their physical and mental health. Since improving the physical and mental health of nurses can affect the quality of patient care in the work environment, providing the necessary training for nurses to reduce these adverse effects could be valuable.

In this regard, the results of studies have shown that positivity training is one of the effective strategies to improve the health of nurses.[13,33]

In total, 81.3% of nurses reported moderate quality of work life and 18.7% had a very good quality. In the study of Nikeghbal et al., the quality of work life was reported as moderate.[34] This is consistent with the present study. The results of the current study are inconsistent with the results of research by Shafipour et al.[35] The high quality of work life of nurses in the present study may be due to the difference in the studied population because Shafipour et al. only investigated nurses working in the ICU.

Based on the results of the Agusto et al.'s study, job satisfaction, anxiety, fatigue, work-life balance, psychological well-being, and professional self-concept have a significant relationship with the quality of nursing work life during the COVID-19 pandemic. This led to a decrease in nurses' performance.[36] Moreover, psychological empowerment has positively affected the quality of work life.[37] Hence, hospitals need to improve the nurses' working quality by paying close attention to factors related to the quality of nursing work life during the pandemic to improve performance.

Limitations of the study include the non-probability sampling available, the self-report tool of the study, and the lack of generalization of the findings of this study to other societies and other cultural contexts. As a suggestion, future studies would investigate the effectiveness of interventions to increase nurses' self-efficacy and quality of their work life in the direction of their psychological empowerment.

Conclusion

Self-efficacy is one of the important capabilities of people, especially nurses, and it is influenced by various factors. The results of the research indicate low self-efficacy in nurses and its relationship with health hardiness. Therefore, health and treatment experts, policymakers, and planners can improve physical and mental health, job satisfaction, and many other related factors in this segment of society by formulating and adopting strategies to improve self-efficacy and health hardiness in nurses.

Conflict of Interests

Authors have no conflict of interests.

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