

The Effect of Covid-19 on Anxiety, Quality of Work Life and Fatigue of Health Care Providers in Health Care Centers

Ali Hasanpour Dehkordi (✉ ali20121968@yahoo.com)

School of allied medical sciences, Shahrekord University of Medical Sciences, Shahrekord, Iran

Shakiba Gholamzad

Tehran University of Medical Sciences School of Medicine <https://orcid.org/0000-0002-3936-9660>

Sam Myrfendereski

Isfahan University of Medical Sciences

Ayda Hasanpour Dehkordi

Shahrekord University of Medical Science

Research

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Abstract

Background and Aim: The aim of this study was to investigate the effect of Covid-19 on anxiety, quality of work life and fatigue of health center staff in southwestern Iran.

Materials and Methods: The present study was a descriptive comparative study and the statistical population of the study included the staff of health centers of Shahrekord University of Medical Sciences. Using random sampling method, 181 people who had direct involvement with patients with Covid-19 were selected and compared with 261 staff in other wards who had no direct contact with patients with Covid-19. For data collection, demographic information (demographic characteristics questionnaire) , Covid-19 Anxiety Questionnaire, quality of work life and Rhoten fatigue questionnaires were used.

Results: The results showed that the quality of life in both groups decreased and fatigue and anxiety caused by Covid-19 increased, but there was no statistically significant difference between anxiety derived fatigues of personnel involved with Covid-19 with personnel of other wards which were no directly faced Covid-19 patients. Regarding the quality of work life, no significant difference was observed in other components except in the component of human resource development. The results also showed that there was a statistically significant relationship between the level of anxiety caused by Covid-19 with quality of work life and fatigue.

Conclusion: According to the results of the present study, Covid-19 had a negative effect on physical, mental and various aspects of quality of life of health care staff and led to increased fatigue and burnout, resulting in absence from work and its consequences.

Introduction

Healthcare providers are vital resources for any country. Their health and safety are very important not only for continuous and safe care of the patient but also for controlling the spread of the disease. With the onset of Covid-19, public health care providers were exposed to extreme stress, anxiety, depression, and insomnia due to the risk of infection with Covid-19(1). COVID- 19 has posed major health threats to global public health and has attracted international attention as a public health emergency of international concern(2). Most countries faced this epidemic and its economic, social, health and medical consequences. Due to the increasing prevalence of this disease and with the prolongation of the disease process in the world, especially in Iran, it has caused an excessive workload on medical staff so that many medical centers sometimes faced with over-admission of patients and lack of medical staff. In such circumstances, the availability of health care providers is a determining factor in overcoming the virus epidemic (3).

Health care system in Iran also experienced a significant impact of this epidemic on employees. In the face of this unknown disease and the unpredictable dangers, health care providers feared infection and the fear of spreading it to their families, but in response to this challenge, they took responsibility, focused on their duties, and showed a spirit of unity and professionalism. The dedication of health care providers

has played a key role in treating patients with COVID-19, and they have tried to provide the best care to patients in difficult situations. Like many new infectious diseases, such as Ebola, there is still no definitive effective cure for the disease, and patient care is primarily nursing care(1). In addition to caring for patients, wearing protective clothing for long hours can also cause physical distress and fatigue. Limited resources, and prolonged epidemic have disrupted sleep and balance of life. Exposure to COVID-19 has led to physical and mental fatigue, stress and anxiety, and burnout in public health care providers(4). Due to the increased pressure to choose between family responsibilities and their inner feelings towards patients, Covid-19 frontline caregivers suffer from emotional problems and burnout. These special conditions cause excessive stress and fatigue in medical staff and make them incapacitated and exhausted (5).

The results of a study showed that the prevalence of depression, anxiety, insomnia and nonspecific anxiety symptoms in frontline clinics especially in nurses were 50.4%, 44.6%, 34.0% and 71.5%, respectively(1). Other studies have shown an immediate effect of COVID-19 on health care providers, with 29.8%, 13.5%, and 24.1% reporting symptoms of stress, depression, and anxiety, respectively(6).

Given the current situation, it seems that health care providers have to work continuously and under severe daily stress, which will lead not only to physical suffering and damage, but also to certain psychological damages, including reduced quality of life. Due to the effect of depression and anxiety on the quality of work life of health care providers(7), it is necessary to focus on the mental health of HCWs during the outbreak of COVID-19(8).

Quality of work life(QWL) is often considered as a real working condition including employee rights, facilities, health and safety issues, participation in decision-making, managerial approach and job diversity and flexibility (9). QWL includes various aspects such as fair payment and benefits, health and safety of working conditions and social integration that enable people to use and develop their abilities and capacities (10).QWL is the result of evaluating individuals by comparing their expectations, hopes, and demands of an organization to the actual performance of the organization(11). High QWL is recognized as a basic condition and background for the empowerment of human resources required by the health care system(12). Improving the QWL of nurses and physicians is one of the important factors to ensure the stability of the health system(13). High QWL leads to employee competence, innovation and creativity. Among the health care team, nurses play a major role among other health care providers. Therefore, they should experience better QWL to provide complete high quality care to those in need(14). Improving QWL reduces depression, anxiety and stress in health care providers (15).

During COVID-19 epidemic, front-line physicians and nurses were under a great deal of physical and psychological stress(16, 17). Such conditions cause COVID-19 front-line medical personnel to become psychologically and mentally exhausted(7). Fatigue is a psychological condition that is associated with lack of energy, general weakness, irritability, decreased motivation and activity(18). Long working hours and changing the tasks, along with stressful work, can lead to extreme weakness and fatigue(19, 20).

Nurses working in such a physical and psychological challenge often experience fatigue, burnout, mental fatigue, and emotional separation(21).

According to the above, the present study was conducted to investigate the effect of the prevalence of Covid-19 on anxiety, quality of work life and fatigue in health care providers in centers involved with Covid-19.

Materials And Methods

The present study was a descriptive comparative study and the statistical population of the study included the staff of health centers of Shahrekord University of Medical Sciences in southwestern Iran . The study was approved with the code of ethics IR-SKUMS.REC.1399.018 and project number 5359.

In this study 442 people were selected by random sampling method .181 of these subjects who had direct involvement with patients with Covid-19 were selected as the case group and compared with the control group (261) who did not have direct involvement with patients with Covid-19.

Inclusion Criteria

Age range between 25 to 60 years, at least two years of working history, working in health centers of Shahrekord University of Medical Sciences

Exclusion criteria

Deficiencies in completing research information and questionnaires.

Study tools

For data collection, demographic information (demographic questionnaire) , QWL Questionnaire , fatigue severity questionnaire and Covid-19 anxiety questionnaire were used. The personal information questionnaire included age, gender, marital status and care of specific patients with Covid-19.

QWL Questionnaire: The Walton QWL Questionnaire was used to assess the QWL of nurses. The questionnaire assesses the QWL of nurses in eight dimensions, which consists of 24 questions based on a five-point Likert scale (very low, low, medium, high, and very high). In each sub-scale, scores 2-4, 5-7, 8-10 and were considered as low, medium, and high, respectively. The eight components of QWL that were measured in this questionnaire include fair and adequate pay (questions 1-2), safe and healthy work environment (questions 3-4), providing opportunities for growth and continuous security (questions 5-8), rule of law in the organization (questions 9-12), social dependence of work life (questions 13-14), general living space (15-18), social integration and cohesion (questions 19-21) and development of human capabilities (questions 22-24). To determine the QWL, the score of eight dimensions of QWL, which was 24 to 120, was divided into three parts, each part having a distance of 32 units. Thus, the QWL was determined at three levels: low (score 24-55), medium (score 56-87) and high (score 120-88). The QWL

Questionnaire is a standard questionnaire designed by the International Organization for Quality of Life and its validity and reliability have been examined in different groups. The reliability coefficient of the questionnaire was reported to be 0.78(22).

Fatigue severity questionnaire: This questionnaire is one of the most reliable tools in the field of fatigue assessment, which was designed by Krop et al. In 1989. This scale includes nine seven-point questions (a score of one means completely disagree and a score of seven means completely agree), five of which measure the quality of fatigue and three questions measure physical, mental fatigue and the effects of fatigue on a person's social status. One question compares the severity of fatigue with other symptoms in the patient. The total score was minimum nine and maximum 63, with a score of 9 indicating no fatigue and a score of 63 indicating the highest rate of fatigue (23).

Covid-19 Anxiety Questionnaire: To measure Covid-19 anxiety in health care providers, the researcher-made Covid-19 Anxiety Questionnaire was used which included 6 questions related to the concern of Covid-19 infection, concern of Covid-19 infection of family through health care providers, concerns about violence and aggression at work, concern about Covid-19 infection of friends and colleagues, concern about lack of personal protective equipment, and concern about the progress of Covid-19 infection prevention programs. Questions were scored on a 5-point Likert scale from zero (0) to very high (5). Higher scores meant higher Covid-19 anxiety.

Statistical methods of data analysis

To analyze the data, descriptive statistics parameters and independent t-test, one-way ANOVA and Pearson correlation tests were used.

Results

Table 1 shows the demographic distribution of the research subjects. The mean age of the caregiver in direct exposure to Covid-19 patients group was 35.59 and the mean age of the control group was 34.17. Also, in both groups, the number of women was more than men. Other demographic information can also be found in Table 1.

Table 1

Comparison of demographic variables in medical staff who Exposure to covid pateint and control group

| Variable | Group | | | P-value |
|-----------------------|--|----------------------|--------------------|---------|
| | Exposure to covid pateint (n = 181) | Control (n = 261) | Total (n = 442) | |
| Age (years) | | | | 0.679 |
| Mean \pm SD | 33.59 \pm 8.9 | 34.17 \pm 7.8 | 33.94 \pm 8.71 | |
| Median [min,max] | 32.0[0,57] | 32.0[21,58] | 32.00[0,58] | |
| Gender f (%) | | | | 0.514 |
| Male | 42(38.2%) | 68(61.8%) | 110(100.0) | |
| Female | 136(41.7%) | 190(58.3%) | 326(100.0) | |
| Marital status | | | | 0.688 |
| Single | 58(43.3%) | 76(56.7%) | 134(100.0) | |
| Married | 120(40.4%) | 177(59.6%) | 297(100.0) | |
| divorce | 2(28.6%) | 5(71.4%) | 7(100.0) | |
| widow | 0(0.0%) | 1(100.0%) | 1(100.0) | |
| Ses f (%) | | | | 0.084 |
| good | 28(47.5%) | 31(52.5%) | 59(100.0) | |
| average | 145(41.2%) | 207(58.8%) | 352(100.0) | |
| poor | 6(22.2%) | 21(77.8%) | 27(100.0) | |
| Job f (%) | | | | 0.405 |
| Generalpractitioner | 4(26.7%) | 11(73.3%) | 15(100.0) | |
| specialist | 2(33.3%) | 4(66.7%) | 6(100.0) | |
| Nursingstaff | 144(45.1%) | 175(54.9%) | 319(100.0) | |
| Midwifery | 6(40.0%) | 9(60.0%) | 15(100.0) | |
| Health staff | 9(27.3%) | 24(72.7%) | 33(100.0) | |
| Pharmacist | 0(0.0%) | 1(100.0%) | 1(100.0) | |
| Dentist | 2(40.0%) | 3(60.0%) | 5(100.0) | |
| Radiologist | 5(25.0%) | 15(75.0%) | 20(100.0) | |

| Variable | Group | | | P-value |
|--|---------------------------|------------|-----------|---------|
| | Exposure to covid pateint | Control | Total | |
| | (n = 181) | (n = 261) | (n = 442) | |
| Office staff | 3(37.5%) | 5(62.5%) | 8(100.0) | |
| Laboratorist | 2(25.0%) | 6(75.0%) | 8(100.0) | |
| other | 2(28.6%) | 5(71.4%) | 7(100.0) | |
| Ward f (%) | | | | |
| icu | 88(100.0%) | 0(0.0%) | 88(100.0) | 0.001 |
| ccu | 23(100.0%) | 0(0.0%) | 23(100.0) | |
| heart | 0(0.0%) | 13(100.0%) | 13(100.0) | |
| Internal | 0(0.0%) | 45(100.0%) | 45(100.0) | |
| surgery | 0(0.0%) | 81(100.0%) | 81(100.0) | |
| emergency | 37(100.0%) | 0(0.0%) | 37(100.0) | |
| liber | 0(0.0%) | 13(0.0%) | 13(100.0) | |
| children | 0(0.0%) | 16(100.0%) | 13(100.0) | |
| infants | 0(0.0%) | 14(100.0%) | 16(100.0) | |
| Infectious | 33(100.0%) | 0(0.0%) | 14(100.0) | |
| other | 0(0.0%) | 46(100.0%) | 46(100.0) | |
| general | 0(0.0%) | 33(100.0%) | 33(100.0) | |
| Data were presented as Mean ± SD, frequency (%). | | | | |
| * Based on Chi-square or t-test. | | | | |

The results showed that in both groups the quality of life decreased sharply and, stress, anxiety and fatigue increased. Based on the results, except for the component of human resource development, no significant difference was observed between the other components of quality of work life in two groups. In the human resource development component, the control group scored higher than the caregivers group in direct exposure to Covid-19 (Table 2).

| Table 2. Distribution of quality of life Scale in medical staff who Exposure to covid pateint and control group | | | |
|--|---|------------------------------|----------------|
| Variable | Group | | P-value |
| | exposure to Covid patients (n = 181) | Control (n = 261) | |
| | | | 0.872 |
| Adequate pay | 8.03 ± 1.83 32.0[0,57] | 8.06 ± 1.86 32.0[21,58] | |
| Safe and healthy enviroment | 7.94 ± 1.47 32.0[0,57] | 7.78 ± 1.80 32.0[21,58] | 0.352 |
| Providing opportunities for growth | 8.55 ± 2.48 32.0[0,57] | 8.80 ± 2.95 32.0[21,58] | 0.341 |
| rule of law in the organization | 8.24 ± 2.84 32.0[0,57] | 8.36 ± 3.17 32.0[21,58] | 0.640 |
| social dependence of work life | 4.86 ± 1.42 32.0[0,57] | 5.02 ± 1.60 32.0[21,58] | 0.282 |
| general living space | 8.71 ± 2.48 32.0[0,57] | 9.19 ± 2.77 32.0[21,58] | 0.057 |
| social integration and cohesion | 7.31 ± 2.27 32.0[0,57] | 7.62 ± 2.29 32.0[21,58] | 0.156 |
| development of human capabilities | 8.27 ± 1.93 32.0[0,57] | 8.74 ± 2.13 32.0[21,58] | 0.017 |
| Quality of life | 53.50 ± 11.95 32.0[0,57] | 55.68 ± 13.46 32.0[21,58] | 0.08 |
| Data were presented as Mean ± SD, median [minimum, maximum]. | | | |
| * Based on t-test. | | | |

According to the results, there was a significant difference between the employees of different wards in the quality of work life scores. The highest scores of quality of working life was related to the cardiovascular ward and the lowest scores of quality of work life was related to the ca regivers of Covid-19 laboratory (Table 3).

Table 3
Parameter estimates One Way Onova on factors associated with the quality of life.

| Dependent Variable quality of life | | | | | |
|--|---------------|--------|-------|-------|---------|
| Parameter | Mean ± SD | 95% CI | | F | P-value |
| | | lower | upper | | |
| icu | 52.44 ± 11.15 | 50.08 | 54.81 | 1.915 | 0.036 |
| ccu | 56.58 ± 12.27 | 51.27 | 61.89 | | |
| heart | 58.01 ± 8.78 | 52.69 | 63.31 | | |
| Internal | 52.45 ± 13.14 | 48.50 | 56.39 | | |
| surgery | 54.84 ± 12.28 | 52.13 | 57.56 | | |
| emergency | 52.72 ± 13.06 | 48.37 | 57.08 | | |
| liber | 50.23 ± 12.18 | 42.86 | 57.59 | | |
| children | 56.20 ± 11.85 | 49.89 | 62.52 | | |
| infants | 54.95 ± 11.68 | 48.20 | 61.69 | | |
| Infectious | 55.01 ± 12.54 | 50.56 | 59.45 | | |
| other | 61.40 ± 16.98 | 56.35 | 66.44 | | |
| general | 55.48 ± 12.95 | 50.89 | 60.07 | | |
| Data were presented as Mean ± SD, median [minimum, maximum]. | | | | | |
| * Based on One Way ANOVA. | | | | | |

Based on the independent t-test, the results showed that there was no statistically significant difference between the two groups in terms of Covid-19 anxiety and fatigue (Table 4).

| Table4. Distribution of Corona Disease Anxiety Scale and Fatigue severity scale | | | | |
|--|----------------------------|----------------|----------------|----------------|
| Variable | Group | | | P-value |
| | exposure to Covid patients | Control | Total | |
| | (n=181) | (n=261) | (n=442) | |
| Corona Disease Anxiety Scale | 24.71±3.74 | 24.45±4.36 | 24.56± 4.11 | 0.527 |
| | 32.0[0,57] | 32.0[21,58] | 25.0[6,30] | |
| Fatigue severity scale | 13.99±1.04 | 14.82±0.917 | 37.88± 14.51 | 0.108 |
| | 32.0[0,57] | 32.0[21,58] | 38.0[9,63] | |
| Data were presented as Mean ± SD, median [minimum, maximum]. | | | | |
| * Based on t-test. | | | | |

The results obtained using Pearson correlation coefficient showed that there was a significant negative relationship between the level of anxiety caused by Covid-19 and the quality of work life and positive relation between the anxiety of Covid-19 and the severity of fatigue of the subjects ($p < 0.05$).

Discussion

The results showed that in both groups, the scores of quality of work life and its dimensions were low according to the cut-off score of the Quality of Work Life Scale, ie the quality of work life due to the prevalence of Covid-19 disease in all members of medical staff decreased. Anxiety and fatigue in both groups were also high according to the results. These findings confirmed the results of previous studies on the negative effects of Covid-19 disease on increasing stress and anxiety in health care providers(4–6). The results also showed that there was no significant difference between the level of Covid-19 anxiety and the fatigue of the personnel involved with Covid-19 with the personnel of other wards who did not have direct contact with Covid-19 patients. Regarding the quality of work life, except for the component of human resource development, no significant difference was observed between the two groups. The results also showed that there was a significant negative and positive relationship between the level of Covid-19 anxiety with quality of work life and fatigue, respectively.

The mental health of health care providers is of particular importance for ensuring proper care and treatment(24). Although the results of the present study did not show a significant difference in the components of the study between the two groups, but it showed that Covid-19 has reduced the quality of work life and increased fatigue and anxiety of all health care personnel. Working in the forefront clinical ward in the face of epidemics and dangerous diseases such as Covid-19 is always an independent risk factor for mental health (18).According to previous findings(6), front-line nurses engaged in clinical care

of patients with COVID-19 were at higher risk for psychological damage, including depression, which can reduce QOWL and increase fatigue.

Due to the large number of patients during the outbreak of COVID-19, the treatment team had to work more shifts and at full capacity. In addition, staff experienced the fear of being infected and spreading the virus to family and friends. All of these factors can significantly increase the conflict between role-playing and personal concerns. The outbreak of Covid-19 disease also increased the pressure on all health care providers. This pressure reduced quality of work life and increased anxiety and fatigue in the medical staff who are directly involved with Covid-19 patients and in the medical staff who indirectly experience increased care services for non-Covid-19 patients through.

Therefore, empathy and unity of people in the community and appreciation of the medical staff by different methods by members of the community, leads to the fact that the current difficult and exhausting conditions for the medical staff have been somewhat modified to care for patients and do their responsibilities with more motivation and energy. Also, services such as music therapy, counseling services, timely payment of salaries, increasing job motivation and morale by the people and officials can improve working conditions and increase employee morale. Other organizational measures, including the allocation of more resources (eg, floating nurses, physicians, patient care assistants, and new equipment), somewhat reduce the burden of care.

Healthcare providers should use self-management and confidence reinforcement to deal with the Covid-19 crisis. Due to the cultural context of Iran and the special emphasis of this culture on altruism, self-sacrifice, etc., health care providers also use this unique experience as a way to sublimate. The results of studies have also shown that in other cultures, health care providers have shown resilience and a spirit of professional sacrifice to overcome problems(1). Facing various challenges, health care providers were highly resilient. They used multiple support systems and adjustment skills to relieve stress because they knew they had to be strong and focused on their duty to save lives. Also, the actions of the Ministry of Health and the support of this ministry to health care providers by providing the necessary protection and support facilities can to some extent strengthen the morale and ability of the staff.

To protect the well-being of health care providers, they must be fully supported. Regular and intensive training is essential for all health care providers to improve preparedness and effectiveness in crisis management. Many health care providers from other wards have little clinical experience in infectious disease intensive care. When health care systems are not prepared to deal with the spread of an infectious disease, training and communication improvements are needed.

Promoting inter-professional and inter-organizational cooperation should be one of the necessary priorities to ensure efficient and quality care. Mutual trust and respect for staff should be developed, effective communication should be maintained, the role of individuals and teams and standards should be defined and a sense of belonging should be created. To help health care providers in reducing uncertainty and fear, in addition to improving infection prevention and control knowledge and personal protection skills, hospitals must provide a safe working environment and adequate protective equipment

and have continuous training, control and monitoring. Separating the living space, changing clothes, and taking a shower immediately after work may help reduce anxiety. Their mental health should be constantly monitored, support systems should be strengthened, and professional psychological counseling and critical interventions should be provided. Improving the quality of work life can also strengthen the psychological strength of staff and protect them from damages caused by Covid-19(25).

The present study also had some limitations. One of them is that the sample was selected only from Chaharmahal and Bakhtiari province and the conditions and status of the disease outbreak in this province could affect the response rate of caregivers and the quality of work life and the severity of their fatigue. Therefore, it is suggested that in future research, a comparison of these components in terms of the extent and severity of the disease in different provinces is done to a more accurate and comprehensive study of the mental and physical status of health care providers in the country be achieved.

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