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ORIGINAL: Comparison of COVID-19 Anxiety in Nurses and Midwife Personnel in the Teaching Hospitals Affiliated to Mazandaran University of Medical Sciences

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ABSTRACT

Introduction: The spread of the coronavirus, its high transmission rate, and lack of a definitive treatment for the novel disease have led to psychological disturbances in societies. Nurses are exposed to numerous psychological issues as they are on the frontline in the battle against COVID-19. The present study aimed to compare nurses and midwife personnel in terms of the anxiety caused by COVID-19.

Material and Methods: This descriptive, cross-sectional study was conducted on 130 nursing staff and midwife personnel working in the teaching hospitals affiliated to Mazandaran University of Medical Sciences, Iran. The participants were selected via convenience sampling. Data were collected using a corona disease anxiety scale, which was completed in a self-report manner. Data analysis was performed in SPSS version 16 using descriptive statistics (tables, mean, and standard deviation) and inferential statistics.

Results: The mean anxiety level of the nurses and midwife personnel was estimated at 30.33 ± 7.6 and 31.11 ± 9.03, respectively. However, the Mann-Whitney U test was indicative of no significant difference in this regard (P=0.08).

Conclusion: According to the results, the nursing and midwife personnel had similar levels of COVID-19 anxiety. Given the moderate anxiety level of the healthcare staff regardless of their work environment, it is recommended that special programs be considered by hospital managers to psychologically support the staff.

Introduction

COVID-19 is a large family of viruses that cause respiratory infections, including common cold and more serious illnesses such as MERS and SARS (1, 2). First reported in late December 2019 in Wuhan (China), COVID-19 has overwhelmed healthcare systems with its unprecedented prevalence and high transmission rate (3). One of the most important consequences of the coronavirus outbreak is the fear and anxiety caused by possible infection, which has imposed a heavy psychological burden

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that could give rise to mental disorders, weakened immune function, and reduced ability to fight the disease (4, 5). Healthcare staff (especially nurses) are on the frontline in the battle against COVID-19 and constantly at a high risk of the infection, while also experiencing long and stressful shifts to meet the care needs of patients (6, 7).

Working in environments with high work-loads and low resources increases nurses' job anxiety, and the symptoms of physical and mental stress may affect their health and wellbeing more severely (7-9). Therefore, it is vital to maintain the psychological health of nurses in order to control infectious diseases (7, 10). Furthermore, work-related stress is a major cause of concern for medical staff.

COVID-19 is associated with multiple clinical activities, anxiety caused by witnessing countless death cases, unknown treatment, and several treatment-related demands of the patients. COVID-19 anxiety is recognized as a key indicator of mental exhaustion (7). In a study by Liu and Yang, 42% of the physicians working in tertiary hospitals in China experienced increased fatigue (11). According to Xiang et al., surgical teams have had significantly higher levels of anxiety and depression and more psychological issues during the COVID-19 pandemic (7). Moreover, Ohler et al. reported a correlation between the work environment, depression, and work absenteeism (12).

The physical and psychological health of nurses, their interest in work, and increased satisfaction are directly correlated. Significant stress could be caused due to the exposure of midwife personnel and nurses to COVID-19 (especially in corona clinics), heavy workloads, lack of a definitive treatment due to the unknown nature of the virus, and the risk of developing the disease, which will increase anxiety and decrease the immune function. Given the importance of COVID-19 patient care, the present study aimed to compare midwife personnel with nurses in terms of COVID-19 anxiety.

Methods

This cross-sectional study was conducted using a descriptive-analytical approach in 2021. The subjects were selected via convenience sampling. Data were collected using an electronic questionnaire, which was provided to the personnel of the teaching hospitals in Mazandaran, Iran. The participants were enrolled in case of eligibility and consent. The inclusion criteria were as follows: 1) no history of mental and anxiety disorders or use of psychiatric drugs; 2) no participation in corona-related anxiety reduction courses; 3) hospital employment in Iran during the COVID-19 pandemic; and 4) more than two years of work experience. Questionnaires and checklists were completed by the subjects, and those excluded from the study for any reason were replaced by another participant.

Data were collected using two instruments, including a demographic questionnaire (age, marital status, education level, history of COVID-19 infection, and service location) and the corona disease anxiety scale (CDAS). The CDAS has been developed and validated in Iran to assess the anxiety caused by the coronavirus. The final version of the tool has 18 items and two components (factors); items 1-9 evaluate psychological symptoms, and items 10-18 assess physical symptoms. The items in the CDAS are scored based on a four-point Likert scale (Never=0, Sometimes=1, Often=2, Always=3), and the maximum and minimum scores of the scale are zero and 54, respectively; the higher scores are indicative of higher anxiety levels. The reliability of the instrument has been confirmed at the Cronbach's alpha of 0.879 (first component) and 0.861 (second component). Furthermore, the value of Guttman's λ2 has been estimated at 0.882, 0.864, and 0.992 for components 1-3, respectively.

Evaluation of the criterion validity was carried out using the general health questionnaire (GHQ-28). Based on the obtained results and the total score of the GHQ-28, the components of physical symptoms, social dysfunction, and depression had the criterion validity of 0.483,

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0.507, 0.418, 0.333, and 0.269, respectively, all of which were considered significant (P=0.001).

Data analysis was performed in SPSS version 16 using descriptive and inferential statistics, Chi-square, Mann-Whitney U test, and Kruskal-Wallis test. In all the statistical analyses, the P-value of 0.05 was considered significant.

Results

In total, 130 individuals were enrolled in the study, including 51 participants (39.2%) aged less than 30 years, and 51 (39.2%) and 28 subjects (21.5%) aged 30-40 and more than 40 years, respectively. In terms of marital status, 80 subjects (61.5%) were married, and 50 (38.5%) were single. In addition, 67.7% of the subjects were female. Among the participants, 61 (46.9%), 28 (21.5%), 22 (16.9%), 16 (12.3%), and three (2.3%) worked in midwifes, emergency departments, internal-surgical wards, nursing stations, and ICUs, respectively. Chi-square results indicated no significant correlations between the demographic characteristics and service location of the participants (***Table 1***).

The Kolmogorov-Smirnov test was used to evaluate the normality of the variable of corona anxiety level, and the results indicated the non-normal distribution of the data in this regard (P<0.05). Therefore, non-parametric tests such as Mann-Whitney U test and Kruskal-Wallis test were applied to compare the mean scores of corona anxiety based on demographic characteristics.

According to the information in ***Table 1***, anxiety levels were higher in the married subjects, those aged 30-40 years, those with a BSc degree, and those with more than one previous experience of corona infection; however, none of these were significant.

In this study, the mean score of corona anxiety in the nurses and midwife personnel was estimated at 30.33±7.6 and 31.11±9.03, respectively, which was considered statistically insignificant (P=0.726).

Table 1. Demographic Characteristics of Participants

Variable		Midwife N (%)	Nurse N (%)	Total N (%)	P-value*	COVID-19 Anxiety Score (Mean ± SD)	P-value‡
Age	<30	19 (31.1)	32 (46.6)	51 (39.2)	0.18	28.7±5.4	0.197
	30-40	26 (42.6)	25 (36.2)	51 (39.2)		32.1±10.9	
	>40	16 (26.2)	12 (17.4)	28 (21.5)		31.6±6.34	
Gender	Male	20 (32.8)	22 (31.9)	42 (32.3)	0.531	28.02±8.3	0.726
	Female	41 (67.2)	47 (68.1)	88 (67.7)		31.9±8.01	
Marital status	Married	40 (65.6)	40 (58)	80 (61.5)	0.24	31.4±8.44	0.267
	Single	21 (34.4)	29 (42)	50 (38.5)		29.5±8.03	
Education level	Diploma	3 (4.9)	1 (1.4)	4 (3.1)	0.219	24.2±2.87	0.203
	BSc	38 (62.3)	49 (71)	87 (66.9)		31.4±9.1	
	MSc	20 (32.8)	17 (24.6)	37 (28.5)		29.7±6.22	
	PhD	2 (1.5)	2 (2.9)	2 (1.5)		27±2.93	
History of COVID-19 infection	Never	31 (50.8)	39 (56.5)	70 (53.8)	0.126	30.1±7.4	0.48
	Once	24 (39.3)	20 (29)	44 (33.8)		31.2±10.1	
	More than once	6 (9.8)	10 (14.5)	16 (12.3)		31.6±6.1	

* Chi-square; ǂ Mann-Whitney U test

Discussion

The present study aimed to compare nursing and midwife personnel in terms of COVID-19 anxiety levels. According to the obtained results, corona anxiety was higher in the midwife personnel compared to the nurses, while this was not considered statistically significant. In the literature review, no similar studies were found regarding the evaluation and comparison of COVID-19 anxiety in midwife and nursing staff, and most of the studies in this area have been focused on the stress and anxiety levels in healthcare nurses. According to the studies performed during

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the spread of the coronavirus in Wuhan (China), healthcare staff experience high levels of anxiety and depressive symptoms (13), which is consistent with our findings. In a study, Koh et al. reported stress in half of the nurses during the SARS epidemic in Singapore (14). According to the findings of Cheong in Hong Kong, anxiety in nurses increased after close contact with SARS-infected patients (15). Furthermore, Wu et al. investigated the psychological status of medical personnel during the SARS epidemic in 2003, reporting high stress levels in 10% of the staff (16).

Few studies have evaluated COVID-19 stress and anxiety in Iranian nurses. In a study in this regard, Hosseinabadi assessed anxiety, depression, and stress in nurses in Torbat Heydarieh during the COVID-19 pandemic, reporting moderate levels of stress, depression, and anxiety in the participants (17). In another study performed to evaluate the correlation between COVID-19 anxiety and the care behaviors of nurses in Kerman (Iran), and the results indicated no significant correlation in this regard (18). In the present study, COVID-19 anxiety was higher in women compared to men, which could be due to the larger number of the female participants. Notably, men are less inclined to expressing emotions such as fear, which is congruent with our findings (19, 20).

Several studies have shown an inverse correlation between age and COVID-19 anxiety as older nurses have been reported to experience lower anxiety levels compared to young nurses (21). In the present study, one of the reasons for the lack of correlation between age and COVID-19 could be the fact that the majority of the people in Iran are young.

Our findings demonstrated that coronavirus anxiety was higher in the married subjects compared to the single participants; however, this was not considered statistically significant. Overall, married individuals experience more stress than single individuals, which could be due to their life situations. In this respect, our findings are congruent with the results of the previous studies in this regard (22, 23). According to our findings, COVID-19 anxiety was significantly higher in the subjects with more work experience, which is inconsistent with the previous findings in this regard possibly due to different work conditions in the current pandemic (24, 25).

The main limitations of our study were unwillingness to participate in some cases, inadequate access to online questionnaires, dishonesty in completing the questionnaires, and mood/mental problems of the participants. Therefore, it is suggested that extensive research be designed as cohorts and implemented to more accurately identify the influential factors in the stress and anxiety caused by the coronavirus in healthcare staff.

Conclusion

According to the results, the midwife personnel and nurses had moderate levels of COVID-19 anxiety. Since nurses and midwife staff are exposed to long-term anxiety due to the occupational nature of working in the midwife, the close contact of nurses with COVID-19 patients, heavy workload, and excessive fatigue, they may experience decreased abilities to individually deal with various issues associated with the increased risk of COVID-19 infection. Therefore, it seems crucial to maintain the psychological health of nurses and provide proper training on COVID-19 anxiety.

Ethical standards statement

The study was approved by the Ethics Committee of Islamic Azad University-Sari Branch (Code: IR.IAU.SARI.REC.1399.040).

Conflicts of interest

The authors declare no conflict of interest.

Authors' contributions

All authors contributed equally to preparing this article.

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