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Emotional intelligence of nurses caring for COVID-19 patients: A cross-sectional study

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ABSTRACT

Purpose: The aim of this study was to assess the emotional intelligence of nurses caring for COVID-19 patients.
Methods: This was a descriptive cross-sectional study that was conducted from May to July 2020 in Tehran, Iran. Nurses caring for patients with COVID-19 were requested to fill in Bradbury and Graves's questionnaire online using a questionnaire in electronic format.
Results: Finally 211 nurses completed the questionnaires. Most of the nurses were working in critical care wards and caring for critical patients (61.6). Nurses' emotional intelligence was reported to be 63.19 (8.22). In general, the nurses' emotional intelligence was moderate. Between the dimensions, self-awareness and self-management had the highest scores. Also, the lowest score was related to self-management. The ward type and complexity of care had no effect on the scores of emotional intelligence. Nurses caring for patients with moderate disease severity had a higher relationship management score than nurses caring for critically ill patients ($P < 0.05$).
Conclusion: The total score of emotional intelligence was moderate. Due to the continuation of the COVID-19 pandemic and the possibility of mental and physical fatigue of health care workers, improving emotional intelligence can be effective in resilience and stability of the psychological status of employees.

Introduction

World health organization declared the COVID-19 crisis as a pandemic with a public health emergency (Priesemann et al., 2021; Smith et al., 2020). Health care providers have a high tendency to be infected with the virus. The prevalence of COVID-19 in health care workers (HCW) is more than the general population. HCWs are prone to psychological problems (Huang et al., 2020). Studies report that this pandemic could increase the risk of psychological symptoms in asymptomatic populations and exacerbate the symptoms in previously diagnosed psychological problems (Sommer et al., 2016). Anger, confusion, and post-traumatic stress disorder are reported as a consequence of this pandemic (Mo et al., 2020).

HCWs who are working in the frontline are at risk for psychological disorders and sometimes the prevalence of disorders such as depression and anxiety in HCWs is reported more than the general population (Montes-Berges & Augusto, 2007). As a result, we should take measures to improve the psychological health of frontline nurses to prevent further damage to the nurses and their patients (Doherty et al., 2013). Emotional intelligence (EI) is one of the most important aspects that improve psychological health. EI is the ability to recognize, understand, and regulate emotions and use them in life (Morris & Wakefield, 2008). Also, EI is recognized as a core variable affecting job performance (Nightingale et al., 2018). It is also a key factor for Creating, reinforcing the emotional capacity that nurses need to interact with patients, and bearing the emotional burden (Morris & Wakefield, 2008). The level of EI may vary between different occupations, especially among health care professionals (Talman et al., 2020). Some studies report a strong correlation between EI and nurses' performance. They also report the EI of nurses high (Alonazi, 2020).

The intensifying of the COVID-19 pandemic plays a strong role in emotional and psychological disorders between HCWs especially nurses (Wu et al., 2020). The level of emotional intelligence during the COVID-19 crisis has been evaluated in previous studies (Alonazi, 2020; Baba, 2020). Improving emotional intelligence skills affects nurses' performance (Alonazi, 2020) and less experiencing negative emotions (Moroń

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et al., 2021). This study was to assess the EI in nurses caring for COVID-19 patients. The results of present study besides having theoretical implications could open pathways for conducting more research.

Methods

Aim

This descriptive cross-sectional study was done from May to July 2020 in Tehran, Iran. The aim of the study was to assess the EI of nurses caring for COVID-19 patients.

Sample

All nurses who were working in COVID-19 wards were invited to participate in the study. Those with at least an associate degree in nursing who were caring for COVID-19 patients and had willing to participate in the study were included. Totally 211 nurses participated in the study.

Data collection

Sampling was done using a web-based online questionnaire. The questionnaire was sent online to 250 people via email and social media. The required time for responding the questionnaire was 5 to 7 min. If no response was given, after one week a reminder was sent. Finally, 211 questionnaires were completed. These questionnaires were assessed and analyzed using statistical software. Totally the response rate was reported 87.2%. The questionnaire had two parts. The first section was demographic and job description and the second part was the Emotional Intelligence questionnaire developed by Brad berry and Greaves in 2005.

All nurses included in the study worked in the wards where COVID-19 patients were admitted. Nurses from both private and governmental sectors were included. Also, they were working in both general and intensive care wards. Participants were informed about the study objective and the confidentiality of the data. They had the right to withdraw the study based on their desire. The informed written consent was taken from all participants.

This questionnaire has 28 items and four aspects of Self-awareness (questions 1–6), self-management (questions 7–15), social awareness (questions 16–21), and relationship management (questions 22–28). The scoring of this questionnaire is based on a Likert scale from 1 to 6. The sum of the score is the total score of each aspect. Then we computed them and calculate the total score of the questionnaire. For better understanding, the total score of the questionnaire was computed to 0 to 100. Having a higher score means higher EI. This questionnaire is translated and transcultural adapted in Persian. The reliability of this test in studies based on internal consistency method, Cronbach's alpha coefficient has been reported 0.83. The validity of this scale has been determined by a correlation coefficient of $r = 0.67$ and $P < 0.01$ (Ganji et al., 2006).

Ethical consideration

The present study was approved by the Ethics Committee of Baqiyatallah University of Medical Sciences, Tehran, Iran, with code IR.BMSU.REC.1399.227.

Statistical analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 25.0 statistical package (Chicago, IL, USA), and a two-sided P-value > 0.05 was considered as a statistically significant difference. Categorical variables are presented as frequency rates and percentages, and continuous variables are described using mean ± standard deviation (SD) values. Data analysis was performed using descriptive and inferential statistics (independent *t*-test, Multinomial logistic regression, Spearman's rho correlation coefficient). The normality of numeric variables was tested using the Kolmogorov-Smirnov test. The comparison of demographic characteristics and job experience parameters was done by independent *t*-test for continuous variables and Chi-square test or Fisher's exact test for categorical variables.

Results

Totally 211 nurses participated in the study. Of these, 52.7% of them were female, 71.6% were married, and 72.5% of them were BSc. The mean age and work experience of participants were 34 (7.85), and 9.76 (6.67), respectively. Most of the nurses were working in critical care wards and caring for critical patients. Other demographic data are presented in Table 1.

Mean of EI of nurses was 63.19 (8.22) and in different subscales of the EI self-awareness had the highest grade and self-management had the lowest grade. Details are summarized in Table 2.

Independent *t*-test did not show a statistically significant difference in the mean scores of emotional intelligence in terms of gender and type of ward. Also, the independent t-test showed that married nurses had higher EI scores compared to single nurses. The one-way ANOVA statistical test didn't show any significant difference in the scores of EI based on caring level, education, and employment status (Table 3).

Married nurses had a higher score in subscales of self-management and relationship management compared to singles. Also, nurses who were caring for more complex patients had a higher score in the relationship management subscale (Table 3).

Discussion

Based on available data the EI of nurses caring for COVID-19 patients is not well studied. This study was done to assess the EI of nurses caring for COVID-19 patients. Nurses had a moderate score in EI. The EI of married nurses was higher than single. In general, the highest and lowest scores were for self-awareness and self-management, respectively.

Different scores are reported for EI in different studies. Some studies report that the EI of nurses is optimal (Barkhordari et al., 2016; Konstantinou et al., 2017; Rostami et al., 2016; Saeid et al., 2013). In some studies nurses' EI score is reported low (Codier et al., 2008; Harper & Jones-Schenk, 2012). The reason for this discrepancy could be the assessment tool or the definition of EI. Despite the difference in assessment tools, the results of these studies affirm that the EI of nurses needs more considerations and some measures should be planned. The nature of the nursing profession and the diversity of situations they face require the nurses have high EI (Barkhordari et al., 2016). The EI, during

Table 1
General information of respondents.

Characteristics		Frequency (%)
Gender	Male	98 (46.4)
	Female	111 (52.6)
Marriage	Single	58 (27.5)
	Married	151 (71.6)
University degree	BSC	153 (72.5)
	MSc	56 (26.5)
Ward	General	74 (35.1)
	ICU	130 (61.6)
Level of Care	Mild	13 (6.2)
	Moderate	83 (39.3)
	Sever	110 (52.1)
Employment	Formal	144 (68.2)
	Informal	51 (24.2)
	Partial time	10 (4.7)

Most of nurses participated in this study were Female, married, and were working in ICU wards.

Table 2
Mean Score and standard deviation Emotional Intelligence and Components.

Variable	Mean (SD)
Emotional intelligence	63.19 (8.22)
Self-awareness	68.83 (11.46)
Self-management	56.41 (9.99)
Social awareness	63.24 (10.39)
Relationship management	66.55 (11.47)

Totally, nurses' emotional intelligence was moderate. Also, self-awareness and self-management had highest and lowest scores, respectively.

situations such as the COVID-19 outbreak, could have a protective role for negative emotions such as fear, anxiety, and sadness (Moroń & Biolik-Moroń, 2020). This issue is more important due to the effects of a pandemic on the occurrence of psychological symptoms and the mental health of health care workers (Di Tella et al., 2020; Sampaio et al., 2020). One of the main challenges managers are faced is the psychological well-being of health care workers (Greenberg et al., 2020; Maben & Bridges, 2020).

This issue could have multiple negative consequences such as job dissatisfaction, stress, burnout, reduced performance, and the quality of care. EI gives the nurses the power to think better during critical and difficult situations and make better decisions by controlling the psychological reactions (Kelishami et al., 2017). Also, EI is an effective strategy for reducing job stress and promoting resiliency (Cleary et al., 2018; Khoshnazary et al., 2016). In terms of clinical performance, improving EI will lead to improving the quality of nursing care (Codier et al., 2013; Jang et al., 2016).

Self-awareness and self-management had the highest and lowest scores, respectively. This means that nurses have a high competency in recognizing their emotions, but their ability to manage them is not desirable. The results of similar studies also confirm the findings of the present study (Ko & Kim, 2014; Mosadegh Rad, 2015; Štiglic et al., 2018). Trying to improve the self-management is necessary. Self-management causes better performance in different stressful situations such as discordant with colleagues, denial, and emotions of patients and family members (Meires, 2018).

Considering the dimensions of EI is very important. Because we can assess the nurse and diagnose the area the person is weak and plan for improving it. Self-awareness and self-management are considered as individual capabilities of emotional intelligence and social awareness and relationship management as social capabilities (Ganji et al., 2006). Therefore, we should not focus only on the overall score of emotional intelligence, but the score of dimensions are more important.

Married nurses had higher scores in EI. Also, the score of self-management and relationship management were higher in married nurses. This difference also has been mentioned in other studies (Ebrahimi et al., 2020; Kalyoncu et al., 2012). This can be due to the involvement of married people in issues such as personal disputes and unfulfilled expectations that require empathy and adjustment. Therefore, it can be an exercise to improve and develop emotional intelligence. There is no significant relationship between gender and age with emotional intelligence in other similar studies (Khandan et al., 2015; Kooker et al., 2007; Petrovici & Dobrescu, 2014). However, differences in the type of tools used to assess emotional intelligence can also be particularly effective.

In the present study, there was no difference between the EI of nurses caring for patients with COVID19 in the normal and critical wards. In terms of dimensions of emotional intelligence, nurses caring for clinically stable COVID19 patients had a higher relationship management score. In the literature review, the results indicate a moderate and low level of emotional intelligence in nurses working in the intensive care unit (Delpasand et al., 2011; Saeed et al., 2013).

However, COVID19 pandemic affects the mental health of health

Table 3
The relationship between emotional intelligence and Dimensions with demographic characteristics.

	Gender		Marriage		University degree		Ward		Level of Care			Employment		
	Male	Female	Single	Married	BSC	MSc	General	ICU	Mild	Moderate	Severe	Formal	Informal	Partial time
Emotional intelligence (mean (SD))	63.43 (7.80)	62.8 (8.55)	61 (8.48)	64 (7.96)	62.71 (8.05)	64.22 (8.54)	63.99 (8.27)	62.38 (8.02)	59.29 (8.07)	64.29 (8.12)	62.61 (8.24)	62.60 (7.02)	63.26 (7.02)	64.43 (8.63)
Test	t-Test		t-Test[a]		t-Test		t-Test		ANOVA			ANOVA		
	T = 0.51, P = 0.6		T = 2.27, P = 0.02		T = 1.18, P = 0.23		T = 1.36, P = 0.13		F = 2.49, P = 0.08			F = 0.32, P = 0.72		
Self-awareness (mean (SD))	68.54 (11.78)	68.89 (11.23)	66.26 (12.18)	69.67 (11.07)	68.39 (11.11)	69.64 (12.4)	68.65 (11.89)	68.36 (11.3)	68.21 (12.4)	69.08 (11.43)	68.24 (11.34)	68.54 (11.22)	67.58 (10.58)	69.00 (14.66)
Test	t-Test		t-Test		t-Test		t-Test		ANOVA			ANOVA		
	T = 0.22, P = 0.82		T = 1.93, P = 0.054		T = 0.70, P = 0.48		T = 0.17, P = 0.86		F = 0.13, P = 0.87			F = 0.15, P = 0.85		
Self-management (mean (SD))	57.60 (9.48)	55.30 (10.30)	53.95 (9.49)	57.31 (10.02)	55.72 (10.12)	58.17 (9.38)	56.82 (10.08)	55.97 (9.97)	50.43 (9.53)	57.32 (10.86)	56.59 (9.32)	55.99 (10.09)	56.82 (9.33)	56.67 (10.89)
Test	t-Test		t-Test[a]		t-Test		t-Test		ANOVA			ANOVA		
	T = 1.67, P = 0.9		T = 2.20, P = 0.029		T = 1.58, P = 0.11		T = 0.58, P = 0.56		F = 2.69, P = 0.07			F = 0.14, P = 0.86		
Social awareness (mean (SD))	63.06 (10.09)	63.21 (10.6)	63.17 (11.25)	63.13 (10.05)	63.50 (9.75)	62.14 (11.9)	64.11 (11.01)	62.46 (9.89)	62.77 (11.1)	64.53 (10.87)	61.93 (9.77)	62.67 (10.31)	63.61 (10.28)	62.80 (11.00)
Test	t-Test		t-Test		t-Test		t-Test		ANOVA			ANOVA		
	T = 0.10, P = 0.91		T = 0.02, P = 0.97		T = 0.83, P = 0.40		T = 1.09, P = 0.27		F = 1.55, P = 0.22			F = 0.15, P = 0.85		
Relationship management (mean (SD))	66.38 (10.17)	66.55 (12.58)	63.62 (12.10)	67.57 (11.09)	65.82 (11.21)	68.26 (12.1)	68.48 (11.61)	65.06 (11.1)	60.38 (9.83)	68.40 (11.00)	65.59 (11.73)	65.54 (11.62)	67.06 (10.79)	70.75 (9.93)
Test	t-Test		t-Test[a]		t-Test		t-Test[a]		ANOVA[a]			ANOVA		
	T = 0.11, P = 0.91		T = 2.24, P = 0.026		T = 1.36, P = 0.17		T = 2.07, P = 0.03		F = 3.40, P = 0.03			F = 1.3192, P = 0.30		

[a] Married nurses had higher levels of emotional intelligence. In terms of dimensions of emotional intelligence, married nurses working in the general wards and caring for patients with moderate disease severity had a higher level of relationship management.

care workers and can affect the quality of care provided. Therefore, it is necessary to pay attention to the emotional intelligence of nurses caring for critically ill patients with COVID19.

Limitations

Due to limited access to research samples, questionnaires were sent and completed online. So we could not comply fully with our sampling schedule and plan.

Conclusion

The EI of nurses caring for patients with COVID19 was moderate. In terms of dimensions, the highest score was related to individual abilities (self-awareness and self-management). According to the results of the present study, the development of emotional intelligence based on the characteristics of nurses is very important in recognizing and managing their emotions. Due to the continuation of this pandemic and the possibility of mental and physical fatigue of health care workers, improving emotional intelligence can be effective in resilience and stability of the psychological status of employees.

Declaration of competing interest

We declare that we have no conflicts of interest.

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