

Compassion Fatigue in Nurses: The Role of Spiritual Well-Being, Emotion Regulation and Time Perspective

Abstract

Background: Nurses experience many psychological problems in the coronavirus disease 2019 (COVID-19) outbreak. This study aimed to investigate the prevalence of Compassion Fatigue (CF) in nurses and the role of Spiritual Well-being (SW), Emotion Regulation (ER), and Time Perspective (TP) in predicting it. **Materials and Methods:** The research method was descriptive-correlational. The statistical samples of this study included 394 nurses in Iran who were selected by the census sampling method. The sub-scale of CF from the Professional Quality of Life Scale, SW questionnaire, ER, and the short form of TP questionnaires were used to collect data. Descriptive statistics and analysis of covariance tests were used to analyze the data. **Results:** The prevalence of CF in nurses in the COVID-19 outbreak was 59.39%. CF in female nurses was higher than that in male nurses ($F_{3,392} = 15.23, p < 0.001$); in married nurses, it was higher than that in single nurses ($F_{3,392} = 14.23, p < 0.001$); and in nurses on fixed shifts, it was higher than that in nurses on rotating shifts ($F_{3,392} = 5.63, p < 0.001$). Also, CF in the emergency nurses, intensive care unit nurses, and coronary care unit nurses working under COVID-19 pandemic was higher than that in the emergency nurses and nurses who worked in other wards ($F_{3,388} = 14.31, p < 0.001$). The results of hierarchical regression showed that SW, ER, and positive past negatively and suppression, present-fatalistic, negative past, and negative future positively predicted the CF ($p < 0.001$). **Conclusions:** Based on the results, programs and psychological trainings based on SW, ER, and TP are suggested to reduce CF in nurses in the COVID-19 outbreak.

Keywords: *Compassion fatigue, COVID-19, emotion regulation, nurses, spirituality, time perspective*

Introduction

Coronavirus disease 2019 (COVID-19), which has spread rapidly around the world, was first detected in December 2019 in Wuhan, China, and has severely affected the respiratory system.^[1] Because of direct contact with patients, health care providers, especially nurses, face care challenges in dealing with this disease.^[2] Therefore, caregivers' challenges during the outbreak of the disease can lead to psychological problems. The effect of the pandemic on nurses' psychological problems have been confirmed.^[3] A psychological variable that is important to consider in nurses in the COVID-19 outbreak is Compassion Fatigue (CF). CF is defined by Figly (2003; cited in Ariapooran, 2014)^[4] as a combination of physical, emotional, and psychological pressures on emotional pain and physical suffering associated with

patient care. The rate of CF before the outbreak of COVID-19 was reported to be 52.7% in Turkish nurses^[5] and 45.3% in Iranian nurses.^[4] CF was higher in female nurses than in male nurses.^[6] The CF rate of nurses was reported to be moderate in the COVID-19 outbreak.^[7] Spiritual Well-being (SW) has been studied in nurses during the COVID-19 outbreak^[8] and can be associated with CF.

According to Gomez and Fisher (2003; cited in Ariapooran *et al.*, 2020),^[9] SW means the ability to experience meaning and purpose in life through one's relationship with oneself, others, art, music, literature, nature, and a higher power or God. Existential and religious health are the dimensions of SW.^[9] Research on the COVID-19 outbreak has shown that spirituality can help nurses in the difficult conditions of COVID-19^[8] and strengthen their resilience.^[10] Spirituality is

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considered as a protective factor in moderating CF^[11] and is also associated with low CF in health care providers.^[12] One of the variables related to SW^[13] that can be related to CF in nurses in the COVID-19 outbreak as well is the Emotion Regulation (ER). According to Gross and John (2003; cited in Weilenmann *et al.*, 2018),^[14] ER is a range of cognitive and behavioral strategies of consciousness and unconsciousness that are used to reduce, maintain, or modify an emotion. Effective ER is critical to prevent the CF.^[14] Research has confirmed the relationship between ER and secondary traumatic stress in health care providers.^[15] Expressing negative and positive emotions were found to be correlated with CF in nurses.^[16] Among the variables related to SW^[17] and ER,^[18] the Time Perspective (TP) can be associated with CF. According to Zimbardo and Boyd (1999; cited in Reig-Botella *et al.*, 2021),^[19] TP is a process of unconsciousness by which personal and social experiences are placed in time classes (past, present, and future). Five different types of TP are identified: Positive Past (PP), Negative Past (NP), Present-Hedonistic (PH), Present-Fatalistic (PF), and the Future (F).^[19] In non-nurses' samples, NP, present, and future TP were found to be correlated with fatigue.^[19,20] However, there is a research gap in the relationship between TP and nurses' CF in the COVID-19 outbreak.

The main issue of the present study was to investigate the prevalence of CF in nurses and the role of SW, ER, and TP in predicting it. Research in the COVID-19 outbreak has not examined the prevalence of CF in Iranian nurses. Therefore, research on nurses' CF in the COVID-19 outbreak is necessary to develop psychological strategies for reducing the psychological effects of COVID-19. Identifying variables related to CF, especially SW, ER, and TP, can help psychologists to use psychological planning based on these variables to reduce CF in nurses during the COVID-19 outbreak.

Materials and Methods

The research method was descriptive-correlational. The statistical population of this study consisted of some nurses in the western regions of Iran. Because of the uncertainty of the population, Cochran's formula was used to estimate the variance of the prototype. Accordingly, 384 people are enough for the sample size. The confidence level, test power, and z were considered to be 0.95%, 0.90%, and 1.96, respectively. All nurses were selected through census sampling method from January 1 to August 1, 2020. Questionnaire links were made available to nurses through WhatsApp, Telegram, and other social networks. A total of 402 questionnaires (79.81%) were answered. Eight questionnaires were removed from the final sample because of incomplete responses, and the sample size was reduced to 394 (75.04%).

We collected data using four instruments. Tool I: CF Subscale for the Quality of Work Life Scale: This scale

was constructed by Stamm (2009; cited in Al Barmawi *et al.*, 2019).^[6] The total scale consists of 30 items and three dimensions: CF (10 items), burnout (10 items), and compassion satisfaction (10 items). The answers are based on a 6-point Likert scale as "0 = never" to "5 = always". The cut-off point is considered for the CF sub-scale above 17.^[6] The Cronbach's alpha coefficient of CF was 0.81,^[6] and in Iran, it was 0.72.^[4] In our study, the Cronbach's alpha coefficient of CF was 0.76.

Tool II: SW Questionnaire: This questionnaire has been constructed by Paloutzian and Ellison (1982; cited in Ariapooran *et al.*, 2020)^[9] and has 20 items and two dimensions: religious well-being (10 items) and existential well-being (10 items). The answers are based on a 6-point Likert scale from "strongly disagree = 1" to "strongly agree = 6". The range of scores is between 20 and 120. The Cronbach's alpha coefficient of the whole scale was 0.89 in Paloutzian and Ellison (1982; cited in Ariapooran *et al.*, 2020)^[9] study, and in Iran, it was 0.85. In our study, the Cronbach's alpha coefficient for the whole scale was 0.79.

Tool III: ER Questionnaire: This questionnaire has been constructed by Gross and John (2003; cited in Mashhadi *et al.*, 2013)^[21] and has 10 items and two sub-scales: re-appraisal and suppression. The answer to this questionnaire is based on a 7-point Likert scale from "strongly disagree = 1" to "strongly agree = 7". In Gross and John (2003; cited in Mashhadi *et al.*, 2013),^[21] the Cronbach's alpha coefficient was reported to be 0.79 for re-appraisal and 0.73 for suppression, and the re-test validity after 3 months for the whole scale was 0.69. The validity of the questionnaire was 0.81 in Iran.^[21] In our study, the Cronbach's alpha coefficients for the re-appraisal and suppression were 0.71 and 0.756, respectively.

Tool IV: The Short form of TP Questionnaire: This scale has 18 items and six dimensions of PP, NP, PH, PF, positive future (PoF), and negative future (NF).^[22] The scoring method is based on a 5-point scale from "very false = 1" to "very true = 5". The Cronbach's alpha coefficient of the dimensions of this scale was between 0.65 to 0.78. The validity of this scale was 0.99.^[22] In our study, the Cronbach's alpha coefficient of this scale was between 0.66 and 0.75. In addition, the relationship between the dimensions was significant and ranged from -0.27 to 0.66.

Analysis of Covariance (ANCOVA) was used to compare the variables based on demographic variables with controlling the effect of age and work experience. In addition, Pearson correlation and hierarchical regression were used to investigate the relationship between predictor (independent) variables and CF. We used the 23rd version of Statistical Package for the Social Sciences Software (IBM SPSS; version 23, SPSS Inc., Chicago, IL, USA) to analyze the data.

Ethical considerations

The participants (nurses) were informed of the purpose of the study, and they completed the consent form. Nurses were assured that their data remained confidential. They agreed the research results to be published as a scholarly article. This study was approved by the Ethics Committee of Malayer University (IR.MALAYERU.REC.1399.002).

Results

The mean [Standard Deviation (SD)] age of all nurses was 35.35 (8.41), and the mean of work experience was 10.6 (14.57). The mean working hours of nurses who had rotational shifts was 13.47 (7.17). The results showed that the prevalence of CF in nurses in the COVID-19 outbreak was equal to 59.39% [Table 1].

Because of the normality of CF ($p < 0.08$), SW ($p < 0.11$), ER ($p < 0.17$), PP ($p < 0.09$), NP ($p < 0.14$), PH ($p < 0.12$), PF ($p < 0.06$), PoF ($p < 0.053$), and NF ($p < 0.06$), parametric tests have been used. According to ANCOVA, CF in female nurses was higher than that of male nurses; CF in married nurses was higher than that of single nurses; CF in nurses on fixed shifts was higher than that of nurses on rotating shifts. However, there was no significant difference between nurses with Bachelor of Science (BS) and Master of Science (MS) degrees [Table 2]. According to Bonferroni post-hoc test, the level of CF in emergency nurses, Intensive Care Unit (ICU) nurses, and Coronary Care Unit (CCU) nurses was higher than those of emergency nurses and nurses in other wards.

There was a significant negative correlation between SW (existential and religious well-being), re-appraisal, PP, PH, and PoF with CF ($p < 0.01$). However, there was a significant positive correlation between suppression, PN, PF, and NF with CF [Table 3].

Predictive variables explained approximately 0.49 of CF in nurses ($F = 43.17$; $p < 0.001$). Based on the beta value suppression, SW, reappraisal, PF, PP, NP, and NF have a significant role in explaining CF [Table 4].

Discussion

This study aimed to investigate the prevalence of CF in nurses and the role of SW, ER, and TP in predicting it. The results showed that 59.39% of nurses had symptoms of CF during the outbreak of COVID-19. This result is different from the findings prior to the outbreak of COVID-19, which

reported a rate of CF below 53%.^[4,5] Nurses in the COVID-19 outbreak are struggling to see the suffering of patients as well as their deaths because of COVID-19, so they may feel CF. There are several possible reasons: They watch patients' suffering, their job is monotonous, and they bear the high workload in the COVID-19 outbreak. Therefore, they are directly and emotionally involved in multi-dimensional care as well as end-of-life care for patients.^[23]

Given the high CF in female nurses compared to male nurses, it can be said that the results are consistent with previous findings.^[7] Generally, women are psychologically more vulnerable to stress than men^[24]; they may experience more stress in caring for patients than men in outbreak of COVID-19.

Considering the lack of difference in the CF between nurses with MS and BS degrees, it can be argued that this result is contrary to previous findings that reported CF in nurses with BS degree.^[25] One possible reason for this discrepancy may be the stressful condition of COVID-19. Regardless of their level of education, all nurses have been willing to care for patients with COVID-19.

Regarding the high rate of CF in married nurses compared to single ones, it can be said that this result is consistent with the previous findings.^[7] In addition to caring for patients, married nurses are also responsible for their own family at home, which can play a role in the high rate of CF in married nurses.

Regarding the high level of CF in nurses with fixed shifts compared to nurses with rotating shifts, it can be argued that nurses on fixed shifts feel more CF because their job is monotonous and routine. In other words, nurses on rotating shifts may feel less CF because of the breaks between work shifts.

The results showed that CF in emergency nurses, ICU nurses, and CCU nurses working under COVID-19 pandemic was higher than that of emergency nurses and nurses in other wards. This result is consistent with previous findings.^[6] Because of the COVID-19 outbreak, the mean of CF increases in ICU nurses, CCU nurses, and emergency nurses dealing with COVID-19 patients compared to nurses in other wards. The level of job stress and psychological problems among nurses in ICU, CCU, and emergency wards has been confirmed high.^[26]

The results confirmed a significant negative correlation between SW and CF and the predictive role of SW in nurses in the COVID-19 outbreak. This result is in line with previous findings which showed that spirituality modulates and reduces CF.^[11] Nurses with high SW (existential and religious) are more likely to do their job with more love and respect. Given that one of the most important aspects of existential well-being is one's relationship with others and religious health involves a relationship with a higher power or God,^[10] SW is likely to satisfy nurses in providing

Table 1: The prevalence of CF in nurses in the outbreak of COVID-19

	With CF* (Scores higher than 17)	Without CF (Scores lower than 17)	Statistical Test
n (%)	234 (59.39%)	160 (40.61%)	$\chi^2 = 13.89$ ($p < 0.001$)

*CF: Compassion fatigue

Table 2: Mean (SD) of variables of Compassion Fatigue (CF) by demographic variables and ANCOVA results by controlling the age and work experience

	Group	n (%)	Mean (SD*)	Statistic Test
Gender	Males	151 (38.32%)	23.94 (4.68)	F _{3,392} =15.23 (p<0.001)
	Females	243 (61.68%)	21.87 (5.43)	
Level of Education	BS**	205 (52.03%)	22.71 (5.53)	F _{3,392} =0.014 (p<0.905)
	MS***	189 (47.97%)	22.62 (4.52)	
Marital Status	Single	92 (23.35%)	22.17 (4.90)	F _{3,392} =14.23 (p<0.001)
	Married	302 (76.65%)	24.29 (5.28)	
Occupational Wards	Emergency	129 (32.74%)	24.27 (5.82)	F _{3,388} =14.31 (p<0.001)
	ICU**** and CCU*****	90 (22.84%)	23.68 (5.13)	
	Medical emergencies	69 (17.51%)	21.21 (3.64)	
Work Shift	Other wards	106 (26.90%)	20.77 (3.83)	F _{3,392} =5.63 (p<0.001)
	Rotating work shifts	272 (69.03%)	22.28 (5.02)	
	Fixed morning shifts	122 (30.97%)	23.52 (5.08)	

*SD: Standard deviation; **BS: Bachelor of Science; ***MS: ****ICU: Intensive care unit; *****CCU: Coronary care unit

Table 3: Correlation of SW, ER, and TP with Compassion Fatigue (CF) in nurses during the outbreak of COVID-19

Predictive Variables	Mean (SD)	Correlation (r)	p
SW*			
Existential well-being	35.91 (5.90)	-0.37	0.001
Religious well-being	33.68 (3.98)	-0.35	0.001
SW	69.59 (8.39)	-0.43	0.001
ER**			
re-appraisal	12.40 (3.91)	-0.21	0.001
suppression	11.71 (5.19)	0.33	0.001
TP***			
NP****	9.24 (1.97)	0.32	0.001
PP*****	10.01 (2.24)	-0.28	0.001
PH [§]	8.08 (2.11)	-0.12	0.01
PF ^{§§}	9.10 (1.82)	0.44	0.001
NF ^{§§§}	9.81 (2.52)	0.21	0.001
PoF ^{§§§§}	10.13 (2.32)	0.41	0.001

*SW: Spiritual well-being; **ER: Emotion regulation; ***TP: Time perspective; ****NP: Negative past; *****PP: Positive past; §PH: Present-hedonistic; §§PF: Present-fatalistic; §§§NF: Negative future; §§§§PoF: Positive future

services to patients in the COVID-19 outbreak and is followed by a reduction in CF.

The results showed that re-appraisal negatively and suppression positively correlated to CF. Also, re-appraisal negatively and suppression positively played a significant role in predicting nurses' CF in the COVID-19 outbreak. This result is in line with the previous findings.^[14] ER leads to awareness, acceptance, and modification of emotions, as well as re-appraisal;^[14] thus, if nurses have proper ER, when faced with negative emotions related to patient care in the COVID-19 outbreak, they would seek to moderate emotions which can possibly reduce CF.

In our results, PP, PH, and PoF negatively, and NP, PF and NF positively correlated to CF. PF, NP, and NF have

played a significant role in predicting CF in nurses. In other groups, except nurses, the relationship between past negative, present, future, and balanced TP with CF has been confirmed.^[19,20] Nurses with warm and receptive attitude toward the past (PP), enjoyable present and life (PH), and a positive view of the future (PoF) are more likely to show positive reactions to patient care and to experience low CF. Nurses with a negative attitude to the past, present, and future are more likely to consider COVID-19 as a stressful condition and more likely to experience CF.

This study had some limitations: The first one was that we did not examine the number and the age of married nurses' children. Likewise, in this study, we did not investigate the duration of nurses' relationship with COVID-19 patients, the impact of observing patients dying from COVID-19, and nurses and their families having contracted COVID-19. Moreover, another limitation in the present study was that all nurses were not involved in caring for COVID-19 patients. It is recommended to attend to these limitations in the future studies.

Conclusion

Our results supported the high prevalence of CF in nurses in the COVID-19 outbreak. High levels of CF in female nurses, married nurses, nurses on fixed shifts, emergency nurses, ICU nurses, and CCU nurses were highlighted. SW, re-appraisal, PP negatively and suppression, PF, NP, and NF positively predicted CF. Therefore, it is recommended to develop psychological programs and trainings based on SW, ER, and TP to reduce CF in nurses in the COVID-19 outbreak.

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Table 4: Summary of hierarchical regression results for predicting the Compassion Fatigue (CF) of nurses by SW, Emotion regulation (ER), and TP during the outbreak of COVID-19

Predictive variables	R	R ²	B*	F	df	p
PF**	0.44	0.19	0.22	92.87	1,392	0.001
NF***	0.56	0.31	0.18	89.01	2,391	0.001
SW****	0.63	0.39	-0.22	83.84	3,390	0.001
PP*****	0.65	0.42	-0.18	69.64	4,389	0.001
Re-appraisal	0.67	0.44	0.27	62.14	5,388	0.001
Suppression	0.69	0.48	-0.22	59.98	6,387	0.001
NP [§]	0.71	0.50	0.15	55.46	7,386	0.001

*B: Beta; **PF: Present-fatalistic; ***NF: Negative future;

****SW: Spiritual well-being; *****PP: Positive past;

§NP: Negative past

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Conflicts of interest

Nothing to declare.

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