Levels of Compassion Satisfaction, Compassion Fatigue and Burnout among Nurses in Public and Private Sector Tertiary Care Hospitals of Peshawar, Pakistan

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Abstract

Background: Providing care to patients involves both positive and negative aspects. An unpleasant feeling one derives from providing care to patients is Compassion Fatigue while Compassion Satisfaction is a constructive feeling drawing out from care provision. The balance between the two sustains professional quality of life.

Objective: The objective of the current study was to investigate and compare levels of compassion satisfaction, compassion fatigue and burnout among nurses in public and private tertiary care hospitals.

Methodology: This cross-sectional study was conducted among nurses of two hospitals in Peshawar. An adopted self-administered questionnaire of the Professional Quality of Life Scale (ProQOL), comprising 30 items, 3 subscales of compassion satisfaction, compassion fatigue and burnout was used for data collection. The questionnaire had a five-point Likert scale ranging from 1 to 5 (never=1, rarely=2, sometimes= 3, often=4, very often=5). Frequencies and percentages were calculated for demographic variables and responses on the Likert scale. Median and interquartile ranges were calculated for subscales. Mann-Whitney test was applied to compare responses between public and private sectors. A p-value of <0.05 was considered significant.

Results: Total number of 214 nurses participated in the study. The majority 171 (79.9%) were females, 159 (74.3%) were married, 163 (76.2%) were having diplomas (3 years) and 208 (97.2%) had \leq 10 years of experience. Median scores of compassion satisfaction, compassion fatigue, and burnout were 35 (IQR=29-40), 22 (IQR=19-25) and 31 (IQR=27-35) respectively.

Conclusion: Current findings revealed moderate scores for compassion satisfaction, compassion fatigue and burnout. Findings of compassion satisfaction and burnout were significantly higher for the private sector than for the public sector. It is concluded that nurses are at moderate risk for emotional and psychological challenges and patients may not receive appropriate care.

Keywords: Compassion fatigue, compassion satisfaction, nurses, professional quality of life, nursing caring.

INTRODUCTION

The professional quality of life is considered to be the quality, one perceives in relation to the working environment as a helper and it involves both positive and negative aspects [1, 2]. This professional quality of life arises out of a balance between compassion satisfaction and compassion fatigue [3]. Compassion satisfaction is a positive aspect of the working environment and is the feeling to sense accomplishment and reward while providing care to the patient [4]. On the other hand, compassion fatigue is characterized by the gradual decline in feeling compassion over time [5] which may subsequently lead to alterations in mood, pain, complaint, detachment and emotional isolation [6]. Whereas burnout is a state of mind caused by chronic emotional and psychological stress reflecting emotional exhaustion, depersonalization and a low sense of accomplishment at work [7]. Literature suggests that compassion fatigue is a direct and sudden response to a specific event while burnout results over time and is more

strongly associated with the working environment and career responsibilities [2]. Consequently, in the health care environment, it leads to negative repercussions both for nurses and patients such as harmful job attitudes, negative self-concept and loss of concern for the patients [8].

A body of knowledge, in previous research, has proven that negative aspect of the working environment is associated with adverse consequences of low quality of life [9]. Multiple factors may be involved in compassion fatigue *i.e.*, the personality of the sufferer and the external world. Personal factors may consist of personality traits, advanced age, a person's level of sympathy and personality and ideology. External factors may involve a demanding job, and a lack of support from society, family, friends and ethnicity [5].

In the nursing profession, it is widely considered that compassion fatigue and burnout have an adverse impact on nurses' job satisfaction and well-being, subsequently leading to poor patients' outcomes and dissatisfaction [10]. The consensus has been noted among the researchers that high levels of burnout (BO)

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and compassion fatigue (CF) harm health providers as a negative correlation was found between BO and CS [11]. Prior studies have shown that this issue has consistent links to medical errors, diminished patient satisfaction, high turnover rates, increased health care costs, physical and psychological impairment, absenteeism and disruption of family [12]. On the other hand, the previous literature has also suggested that nurses can derive pleasure from helping patients cope with traumatic events which empowers them to deal with challenges and enhances their compassion satisfaction [13].

A considerable amount of literature has been published in the western world regarding this topic. The nurses in our country are dealing with traumatic patients in both the public and private sectors. Besides, they are also confronted with social, emotional and psychological issues. So, it is commonly assumed that they are at risk to develop compassion fatigue and burnout. In order to address this issue among nurses in our country research is needed. Further, the working environment of both the public and private sector is different in our country. Therefore, both sectors are needed to be investigated for compassion satisfaction, compassion fatigue and burnout. The findings of the current study will provide useful contributions to the background of the problem and may be utilized by the health care administration and the nurses at the managerial level to prevent compassion fatigue and enhance compassion satisfaction among nurses. Therefore, the objective of the current study was to investigate and compare compassion fatigue, compassion satisfaction and burnout among nurses in public and private sector hospitals in Peshawar, Pakistan.

METHODS

This descriptive cross-sectional study was conducted at Hayatabad Medical Complex (HMC) Peshawar and Rehman Medical Institute (RMI) Peshawar from November 2018 to March 2019. HMC is a public sector tertiary care hospital while RMI is a private tertiary care hospital. Approval for the study was obtained from the Advance Study and Research Board (AS&RB) of Khyber Medical University Peshawar (DIR-KMU-AS&RB/ LC/000540). Moreover, written informed consent was signed by all the participants prior to data collection. A stratified random sampling technique was utilized to include 214 participants in the study. An online calculator of Epitools was used for sample size calculation for all three variables of compassion satisfaction, compassion fatigue and burnout. The desired precision was taken as 3, while the confidence interval was considered as 99%. The assumed standard deviations were taken from the previous study which was compassion satisfaction (37.9±8.8), compassion fatigue (31.1±8.9) and burnout (30.7±5.3) [11]. All registered nurses who had one year of experience were included in the study. The participants who had a history of psychiatric disease or chronic medical problems were excluded from the study.

An adopted self-administered questionnaire of the Professional Quality of Life Scale (ProQOL) was utilized for data collection through a face-to-face interview by the primary author. Permission was sought from the author of the questionnaire. The ProQOL consisted of 30 items, constituting three subscales of burnout (Item = 10), compassion fatigue (Item = 10) and compassion satisfaction (Item = 10). The questionnaire has a five-point Likert scale ranging from 1 to 5 (never = 1, rarely = 2, sometimes = 3, often = 4, very often = 5). The scores of Cronbach Alphas for the subscales of ProQOL have been reported as follows 0.87 for compassion satisfaction, 0.72 for burnout and 0.80 for compassion fatigue [14]. For all the 3 subscales, the total score of 22 and less was considered low, 23 to 42 moderate and 42 and higher was considered as high [15, 16].

Statistical Package for the Social Sciences (SPSS) version 19 was utilized for the analysis of data. Frequencies and percentages were calculated for all the demographic variables and the responses on the Likert scales. Median scores and interquartile ranges (IQR) were calculated for the subscales of burnout, compassion fatigue and compassion satisfaction after checking asymmetrical distributions with the Shapiro-Wilk test. Mann-Whitney test was applied to compare the responses of the items of compassion satisfaction, compassion fatigue and burnout between public and private sector hospitals. A p-value of <0.05 was considered significant.

RESULTS

The mean age of the participants was 25.97 ± 4.55 years. The total sample consisted of 214 participants. Of the total sample, 171 (79.9%) were females and 43

Table 1: Demographic characteristics of registered nurses.

| Variables | Frequency (%) |
|---------------------------------------|---------------|
| Age Group | |
| 20-30 Years | 187 (87.4) |
| 31-40 Years | 25 (11.7) |
| 41-50 Years | 2 (0.9) |
| Gender | |
| Male | 43 (20.1) |
| Female | 171 (79.9) |
| Marital Status | |
| Married | 55 (25.7) |
| Single (unmarried, widowed, Divorced) | 159 (74.3) |
| Qualification | |
| Diploma in Nursing (3 Years) | 163 (76.2) |
| BSN | 27 (12.6) |
| MSN | 7 (3.3) |
| Post Basic Diploma in Nursing | 17 (7.9) |
| Working Experience | |
| ≤10 years' Experience | 208 (97.2) |
| >10 years' Experience | 6 (2.8) |
| Type of Hospital | |
| Public Sector Hospital | 107 (50) |
| Private Sector Hospital | 107 (50) |

Table 2: Responses to ProQOL Scale.

| S.No | Items | Never n (%) | Rarely n (%) | Sometimes n (%) | Often n (%) | Very Often n (%) |
|------|--|----------------|-----------------|--------------------|----------------|---------------------|
| 1 | I am happy with my job as a nurse. | | 43(20) | 54(25.1) | 55(25.6) | 47(21.9) |
| 2 | I am preoccupied with more than one person I care. | | 46(21.4) | 58(27) | 46(21.4) | 51(23.7) |
| 3 | I get satisfaction from being able to take care of my patients. | 8(3.7) | 35(16.3) | 37(17.2) | 60(27.9) | 74(34.4) |
| 4 | I feel connected to others. | | 26(12.1) | 76(35.3) | 52(24.2) | 40(18.6) |
| 5 | I jump or am startled by an unexpected sound. | 45(20.9) | 39(18.1) | 95(44.2) | 21(9.8) | 13(6) |
| 6 | I feel invigorated after working with my patients. | 52(24.2) | 34(15.8) | 78(36.3) | 29(13.5) | 18(8.4) |
| 7 | I find it difficult to separate my personal life from my life as a nurse. | | 41(19.1) | 87(40.5) | 42(19.5) | 17(7.9) |
| 8 | I am not as productive at work because I am losing sleep over traumatic experiences of patients. | 65(30.2) | 52(24.2) | 58(27) | 27(12.6) | 10(4.7) |
| 9 | I think that I might have been affected by the traumatic stress of those my patients. | 59(27.4) | 47(21.9) | 68(31.6) | 34(15.8) | 5(2.3) |
| 10 | I feel trapped by my job as a nurse. | 36(16.7) | 44(20.5) | 82(38.1) | 39(18.1) | 12(5.6) |
| 11 | Because of my nursing profession, I have been left on edge about many things. | 20(9.3) | 44(20.5) | 85(39.5) | 50(23.3) | 14(6.5) |
| 12 | I like my work as a nurse | 4(1.9) | 46(21.4) | 38(17.7) | 51(23.7) | 75(34.9) |
| 13 | I feel depressed because of the traumatic experiences of patients I care for | 43(20) | 43(20) | 74(34.4) | 36(16.7) | 16(7.4) |
| 14 | I feel as though I am experiencing the trauma of some of my patients. | 15(7) | 44(20.5) | 90(41.9) | 45(20.9) | 19(8.8) |
| 15 | I have beliefs that sustain me | 16(7.4) | 54(25.1) | 58(27) | 53(24.7) | 32(14.9) |
| 16 | I am pleased with how I am able to keep up with my on-job techniques and protocols. | 19(8.8) | 49(22.8) | 66(30.7) | 47(21.9) | 32(14.9) |
| 17 | I am the person I always wanted to be. | 28(13) | 33(15.3) | 68(31.6) | 46(21.4) | 39(18.1) |
| 18 | My work makes me feel satisfied | 8(3.7) | 33(15.3) | 45(20.8) | 64(29.8) | 64(29.8) |
| 19 | I feel worn out because of my work as a nurse. | 41(19.1) | 47(21.9) | 57(26.5) | 50(23.3) | 19(8.8) |
| 20 | I have happy thoughts and feelings about my patients and how I could help them. | 6(2.8) | 39(18.1) | 56(26) | 49(22.8) | 64(29.8) |
| 21 | I feel overwhelmed because my workload seems endless. | 23(10.7) | 42(19.5) | 69(32.1) | 69(22.8) | 31(14.4) |
| 22 | I believe I can make a difference through my work. | 9(4.2) | 43(20) | 86(40) | 49(22.8) | 27(12.6) |
| 23 | I avoid certain activities or situations because they remind me of the frightening experiences of my patients. | 45(20.9) | 39(18.1) | 77(35.8) | 39(18.1) | 14(6.5) |
| 24 | I am proud of what I can do to help my patients, | 5(2.3) | 38(17.7) | 55(25.6) | 50(23.3) | 66(30.7) |
| 25 | As a result of my nursing job, I have intrusive and frighting thoughts. | 31(14.4) | 41(19.1) | 84(39.1) | 42(19.5) | 16(7.4) |
| 26 | I feel "bogged down" by the system | 46(21.4) | 49(22.8) | 72(33.5) | 28(13) | 18(8.4) |
| 27 | I have thoughts that I am a "success" as a nurse | 8(3.7) | 44(20.5) | 48(22.3) | 64(29.8) | 50(23.3) |
| 28 | I cannot recall important parts of my work with trauma victims | 40(18.6) | 48(22.3) | 74(34.4) | 40(18.6) | 12(5.6) |
| 29 | I am a very caring person. | 1(0.5) | 39(18.1) | 55(25.6) | 56(26) | 63(29.3) |
| 30 | I am happy that I chose to do this work. | 5(2.3) | 45(20.9) | 46(21.4) | 49(22.8) | 69(32.1) |

(20.1%) were males. Most of them were unmarried 159 (74.3%). The findings showed that 163 (76.2%) of study participants were having diploma (3 years), 27 (12.6%) were graduate in Nursing, 17 (7.9%) were Post Basic Diploma holders and only 7 (3.3%) were Master's Degree holder in Nursing. Of the participants, 208 (97.2%) had \leq 10 years' experience while 6 (2.8%) had more than 10 years of experience. Out of 214, half of them were working in private sector hospital and the remaining half were working in public sector hospital. Demographic characteristics are provided in Table **1**.

The median scores were calculated for each scale. Participants awarded the highest median score of 35 (IQR=29-40) to Compassion Satisfaction, while the lowest mean score of 22 (IQR=19-25) was obtained by Compassion fatigue. The median score for Burnout was 31 (IQR=27-35).

Table 2 Illustrates the response distribution of the participants. Table 3 Shows a comparison of responses of

public and private sector hospitals regarding subscales. Scores of Compassion satisfaction (p-value<0.001) and Burnout (p-value<0.001) were significantly higher for private sector hospitals than for public sector hospitals.

DISCUSSION

The current study was carried out to investigate compassion satisfaction, compassion fatigue and burnout in nurses and to compare them in public and private sector tertiary care hospitals. Median scores on the subscale of the current study revealed that the participants were on average for compassion satisfaction 35, compassion fatigue 22 and burnout 31.

The moderate score of compassion satisfaction confirmed the findings of the previous local study where the participants awarded a mean score of 36.95 to CS. Moreover, the moderate score is also in accordance with the result, found among the subgroups of the participants such as Emergency Nurses (35.25±7.62),

| Sub-Scale | Participants | Median | Mean Rank | Mann-Whitney U statistic | p-value |
|-------------------------|-------------------------|------------|-----------|--------------------------|---------|
| Compassion Satisfaction | Public Sector Hospital | 30 (24-37) | 80.20 | 2803.0 | < 0.001 |
| Compassion Satisfaction | Private Sector Hospital | 38 (34-41) | 134.80 | 2803.0 | |
| Compassion Fatique | Public Sector Hospital | 22 (19-25) | 100.16 | 4939.0 | 0.082 |
| | Private Sector Hospital | 24 (19-26) | 114.84 | 4939.0 | |
| Burnout | Public Sector Hospital | 29 (33-23) | 89.38 | - 3786.0 | <0.001 |
| Burnout | Private Sector Hospital | 32 (28-36) | 125.62 | 3700.0 | |

Table 3: Comparison of subscales among public and private sector hospitals.

Mann-Whitney Test applied.

ICU Nurses (37.71 ± 7.66) , Cardiology Nurses (35.43 ± 6.90) and Pediatric Nurses (38.08 ± 6.1) [16]. The moderate score of compassion satisfaction is consistent with some of the other prior studies [2, 17, 18]. A recent study conducted in Spain also found the mean score of compassion satisfaction among nurses as 39.9 ± 5.9 [19]. In contradiction, some studies have reported higher scores for compassion satisfaction [1, 20]. One probable explanation of the variability of the results may occur on the ground that latter studies have been carried out in developed countries where the health care systems are improved and psychological support is available.

A similar result for compassion fatigue score was also obtained in a study conducted in South Africa where 85% of the participants reported moderate to high compassion fatigue [11]. Similar findings for compassion fatigue were obtained in the study, conducted in Pakistan, where the majority of the participants reported moderate scores [5]. The population of the latter study was doctors, nurses and nursing assistants. Inversely lower scores were documented for the subscale of compassion fatigue among Spanish and Brazilian Palliative care professionals [21]. One of the probable explanations is that the difference may have occurred due to different populations of study where the health care system is different and may have enough facilities.

The median score of burnout of 31 shows that our patients are being cared for by individuals who are suffering from moderate burnout. Therefore, they are at high risk of compromised care which may lead to patient negative outcomes [22]. In a recent study conducted on US nurses leaving their jobs, 43.4% reported burnout as a major factor in the decision [23]. The Iranian Nurses reported the mean score of burnout to be 26.68±5.67 [18]. A study conducted in China among emergency nurses and physicians found a mean score of 27.74±6.19 [24]. The variations of burnout may have occurred due to the different populations of patients and improved conditions of the healthcare system.

The findings of the current study show the results to be significantly higher for private sector hospitals than public sector hospitals in terms of compassion satisfaction (p-value<0.001) and burnout (p-value<0.001). The variation in results between the two sectors may be due to the different determinant factors. The characteristics of

both sectors are different and future research is needed to investigate the predictors in both public and private sectors. In terms of the private sector, the current study showed moderate findings for compassion satisfaction, compassion fatigue and burnout (CS=38, CF=24, BO=32). These moderate findings were confirmed by a previous local study showing, compassion satisfaction (35.25±7.62), compassion fatigue (30.02±5.54) and burnout (31.51±5.29) among nurses in the emergency department of a private sector hospital in Karachi [16]. Another local study documented low burnout among nurses in a private hospital in Islamabad where most of the facilities are available and the hospital is wellequipped as compared to the private hospital of the current study [25]. The main reasons for moderate findings in the private sector may be the lack of job security, work burden and the inappropriate behaviour of the hospital administration. In terms of the public sector, the current study revealed the findings of CS=30, CF=22 and BO=29) which also falls within the moderate range except for compassion fatigue which is in the low range, but exists on borderline as the moderate range starts with 23. The determinant factors attributing to the moderate findings may be an increased number of patients, work overload, ambiguity in the job description, lack of facilities, lack of workplace dignity, and improper assignments. No study both in the context of Pakistan and the international level was identified that compare the three variables between the public and private sectors.

The findings of the current study are not satisfactory and present a potentially grim picture of an important health professional for the care of patients and the whole health care system. This is a serious issue and should never be underestimated by the hospital administration [22]. The study suggests that attention is required to be paid to their job satisfaction, occupational health and personal wellbeing [7], as literature claims that professional activity should be a source of satisfaction and economic development [9]. The previous studies suggested numerous interventions through which compassion satisfaction may be enhanced and burnout can be reduced such as mindfulness programmes, daily meditation and group support sessions [26]. Research is also needed to determine interventions to prevent burnout and compassion fatigue. Further, both, the administrations of public and private sectors are required to pay attention to improve the satisfaction level among nurses.

CONCLUSION

Current findings revealed moderate scores for compassion satisfaction, compassion fatigue and burnout. Findings of compassion satisfaction and burnout were significantly higher for the private sector than for the public sector. It is concluded that nurses are at moderate risk for emotional and psychological challenges and patients may not receive appropriate care.

LIMITATIONS

There are a few limitations of the current study. The sample of the study is drawn from a single region which might have limited the generalizability. If we had included other hospitals from various cities, it would have increased the generalizability of the findings.

ETHICS APPROVAL

Approval for the study was obtained from the Advance Study and Research Board (AS&RB) of Khyber Medical University Peshawar. The purpose of the study was explained to the participants before signing their consents. They were fully allowed to refuse participation. Moreover, they were ensured that their identity will be kept confidential. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the Helsinki declaration.

CONSENT FOR PUBLICATION

We obtained written informed consent from all the participants of the study. They were informed that the findings of the study will be published for the purpose of dissemination of information.

AVAILABILITY OF DATA

The data will not be publicly available but the corresponding author can be contacted for the data files for research purposes.

FUNDING

No funding was utilized for this study from any organization.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHORS' CONTRIBUTION

WTN conceptualized the study. WTN and DM contributed to the design of the study. WTN collected and entered the data obtained for the study. WTN, DM and AK worked on the analysis and interpretation of the data. AK drafted the manuscript and revised it for publication. WTN and DM revised it critically. DM supervised and gave the final approval of the manuscript.

REFERENCES

- 1. Arribas-García S, Alboniga-Mayor JJ, Iturrioz EB. Compassion satisfaction and compassion fatigue in oncology nursing staff: descriptive and correlational study. Enferm Glob 2020; 19(4): 133-44.
- Yu H, Jiang A, Shen J. Prevalence and predictors of compassion fatigue, burnout and compassion satisfaction among oncology nurses: a cross-sectional survey. Int J Nurs Stud 2016; 57(2016): 28-38.
- Yılmaz G, Üstün B. Professional quality of life in nurses: compassion satisfaction and compassion fatigue. J Psychiatr Nurs 2018; 9(3): 205-11.
- Baqeas MH, Davis J, Copnell B. Compassion fatigue and compassion satisfaction among palliative care health providers: a scoping review. BMC Palliat Care 2021; 20(88): 1-13.
- 5. Khan AA, Khan MA, Malik NJ. Compassion fatigue amongst health providrs. Pak Armed Forces Med J 2015; 65(2): 286-9.
- Ruiz-Fernández MD, Ortíz-Amo R, Ortega-Galán ÁM, Ibáñez-Masero O, Rodríguez-Salvador MDM, Ramos-Pichardo JD. Mindfulness therapies on health professionals. Int J Ment Health Nurs 2020; 29(2): 127-40.
- Wan Z, Lian M, Ma H, Cai Z, Xianyu Y. Factors associated with burnout among Chinese nurses during COVID-19 epidemic: a cross-sectional study. BMC Nurs.2022; 21(1): 1-8.
- Dev V, Fernando AT, Gigi A, Consedine NS. Does self-compassion mitigate the relationship between burnout and barriers to compassion ? A cross-sectional quantitative study of 799 nurses. Int J Nurs Stud 2018; 81(February): 81-8.
- Nogueira L de S, Sousa RMC de, Guedes E de S, Santos MA dos, Turrin RNT, Cruz D de ALM da. Burnout and nursing work environment in public health institutions. Rev Bras Enferm 2018; 71(2): 336-42.
- Zhang YY, Zhang C, Han XR, Li W, Wang YL. Determinants of compassion satisfaction, compassion fatigue and burn out in nursing. Med (United States). 2018; 97(26): 1-7.
- 11. Mashego TAB, Nesengani DS, Ntuli T, Wyatt G. Burnout, compassion fatigue and compassion satisfaction among nurses in the context of maternal and perinatal deaths. J Psychol Africa 2016; 26(5): 469-72.
- Nazir A, Smalbrugge M, Moser A, Karuza J, Crecelius C, Hertogh C, et al. The prevalence of burnout among nursing home physicians: an international perspective. J Am Med Dir Assoc 2018; 19(1): 86-8.
- Yu H, Qiao A, Gui L. Predictors of compassion fatigue, burnout, and compassion satisfaction among emergency nurses: a crosssectional survey. Int Emerg Nurs 2021; 55(May 2020): 100961.
- Atisfaction S, Urnout B, Li A, Early SF, Mahrer NE, Klaristenfeld JL, et al. Group cohesion and organizational commitment: protective factors for nurse residents' job satisfaction. J Prof Nurs 2014; 30(1): 89-99.
- Stamm BH. The ProQOL Manual (The Professional Quality of Life Scale) [Internet]. 2005. pp. 1–29. Available from: www.isu.edu/bhstamm
- Ahmed T, Ali A, Rasheed A, Naz S. Compassion satisfaction, fatigue and burnout among nurses working in clinical departments at a tertiary care hospital in Karachi. Pak J Physiol 2019; 15(3): 19-22.

- Duarte J, Pinto-Gouveia J. The role of psychological factors in oncology nurses' burnout and compassion fatigue symptoms. Eur J Oncol Nurs 2017; 28: 114-21.
- Salimi S, Pakpour V, Rahmani A, Wilson M, Feizollahzadeh H. Compassion satisfaction, burnout, and secondary traumatic stress among critical care nurses in Iran. J Transcult Nurs 2020; 31(1): 59-66.
- Ruiz-Fernández MD, Ramos-Pichardo JD, Ibáñez-Masero O, Cabrera-Troya J, Carmona-Rega MI, Ortega-Galán ÁM. Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. J Clin Nurs 2020; 29(21–22): 4321-30.
- Wu S, Singh-Carlson S, Odell A, Reynolds G, Su Y. Compassion fatigue, burnout, and compassion satisfaction among oncology nurses in the United States and Canada. Oncol Nurs Forum 2016; 43(4): 161-9.
- Galiana L, Arena F, Oliver A, Sansó N, Benito E. Compassion satisfaction, compassion fatigue, and burnout in Spain and Brazil: ProQOL validation and cross-cultural diagnosis. J Pain Symptom Manage 2017; 53(3): 598-604.

- 22. Batayneh MH, Ali S, Nashwan AJ. The burnout among multinational nurses in Saudi Arabia. Open J Nurs 2019; 9: 603-19.
- Shah MK, Gandrakota N, Cimiotti JP, Ghose N, Moore M, Ali MK. Prevalence of and factors associated with nurse burnout in the US. JAMA Netw Open 2021; 4(2): 1-11.
- 24. Ma H, Huang SQ, We B, Zhong Y. Compassion fatigue, burnout, compassion satisfaction and depression among emergency department physicians and nurses: a cross-sectional study. BMJ Open 2022; 12(4): e055941.
- 25. Shahzad S, Javed A, Khan AS, Usman HB, Ali N. Prevelance of burnout and satisfacton with the profession, among doctors and nurses working in the emergendy department of a tertiary care hospital, Islamabad, Pakistan. South Asian J Emerg Med 2019; 2(2): 14-8.
- Ortega-campos E, Vargas-rom K, Velando-soriano A. Compassion fatigue, compassion satisfaction, and burnout in oncology nurses: a systematic review and meta-analysis. Sustainability 2019; 12(1): 72.