UNLOCKING THE POWER OF SPIRITUAL INTELLIGENCE: ENHANCING THE PROFESSIONAL QUALITY OF LIFE OF CRITICAL CARE NURSES IN PRIVATE HOSPITALS

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Abstract

Caring for critically ill patients may have a negative impact on nurses' professional quality of life (ProQOL), including their compassion satisfaction (CS), burnout (BO), and secondary traumatic stress (STS), leading to nurses' turnover and concerns about the quality of care provided. Spiritual intelligence (SI) has been considered an important quality in most professions in recent years, but there is limited research on its role in contributing to the ProQOL of nurses. Therefore, it is crucial to understand the role of SI and its relationship with professional nurses' ProQOL. This study aimed to determine the level of SI and ProQOL among critical care nurses in private hospitals. Followed by examining the relationship between SI and demographic data towards the dimension of ProQOL. A multisite study using a cross-sectional design was conducted on 136 nurses working at three private hospitals in Malaysia from March 2021 to March 2022 via an online survey. Data was gathered using the Spiritual Intelligence Self-Report Inventory (SISRI-24) and the Professional Quality of Life Version 5 (ProQOL-5), and descriptive and multivariate analyses were run using SPSS. SI among nurses was found at moderate to high levels of (61.30 ± 12.95), and the majority nurses had a moderate level of CS (72.1%), BO (77.2%), and STS (75.0%). In regression, there was a statistically significant relationship between SI toward CS ($\beta = 0.61$, $t = 9.79$, $p < 0.01$) and BO ($\beta = -0.31$, $t = -4.19$, $p < 0.01$), suggesting that CS levels were significantly higher with increasing SI levels, and BO levels significantly reduced with increasing SI levels. Also, female nurses are predicted to have a higher level of BO than male nurses ($\beta = 0.20$, $t = 2.77$, $p = 0.01$). The study's results suggested that a holistic strategic approach is needed to improve CS and mitigate the negative component of ProQOL (BO and STS) by utilizing SI. It is hoped that nursing education institutes and hospital organizations can contribute to cultivating SI among nurses with extra consideration given to female nurses.

Keywords: Spiritual Intelligence, Professional Quality of Life, Critical Care Nurse(s), Private Hospital(s)

Introduction

Caring is a multifaceted part of nursing practice and crucial to nurses in their personal and professional lives (1). The quality an individual perceives about their work when caring for those who have experienced traumatic events is called professional quality of life (ProQOL), which influences their work-life's positive and negative aspects (2). The ProQOL was officially introduced by Stamm in 2010 and refer to as a psychological phenomenon that consists of compassion satisfaction (CS) and compassion fatigue (CF) (3). CS in nursing refers to the gratifying and fulfilling feeling that one experiences from providing care to patient, while CF is defined as a state of diminished ability to provide care due to constant exposure to the distress and traumatic experiences of patients, which can be subdivided into burnout (BO) and secondary traumatic stress (STS) (3-5). Many high-income countries have recognized the negative consequences of poor ProQOL, including decreasing CS levels and increasing CF levels, which impacts nurses more than other health workers (6). The overall mean scores for CS, BO, and STS from 79 studies involving 28,509 nurses from 11 countries worldwide were 33.12, 26.64, and 25.24, respectively, with the Americas and Europe having the highest CS and lowest CF, while the Asian region had the lowest CS and highest CF symptoms (7). From 2010 to 2019, there was a gradual increase in CF among nurses, with the highest levels of symptoms observed in those working in the critical care unit (7). Studies have shown that critical care nurses have a higher incidence of CF compared to nurses working in areas where they are less exposed to dying and death, with rates exceeding 50 percent (8, 9).

In Asia, specifically in Malaysia, there is limited data on the incidence of CF, but the behaviour and the trends resembling poor ProQOL in the nursing profession as a whole have been reported, such as leading to a loss of perspective and hindering the individual ability to recognize the humanity of others, ultimately impeding one capacity to effectively and adequately respond to patient suffering and pain as well as losing joy at work (10). Caring for critically ill patients can expose nurses to ethical dilemmas and traumatic experiences, making them more susceptible to occupational stress (11), which further affect their ProQOL. This has a detrimental impact, causing physical and emotional strains that may lead nurses to leave their jobs and, ultimately, their profession unexpectedly (5, 12).

CF may be brought on by repeated exposure to stressful situations that strain a nurse's mental and physical limits. The capacity or interest in being empathic diminished as a natural consequence of the emotional strain and hardship the individual experiences (13). Traumatic experiences such as exposure to pain, suffering, and loss of their patients resulting a reduction in CS that induces immediate and delayed stress responses that impair personal health and general well-being (14). This exhaustion impacts nurses, patients, and the healthcare organization significantly. The healthcare industry worldwide faces a major challenge in managing its human capital, particularly the high turnover rate of nurses, which can be as high as 13% to 37% (15). In Malaysia, this issue is exacerbated by a nurse-to-patient ratio of 1:300, higher than the World Health Organization (WHO) recommended ratio (1:200) (16). The private sector in Malaysia also faces a high turnover rate of medical staff, including nurses, due to unfavorable working conditions (17, 18). This situation can be worsened when nurses are exposed to extreme and traumatic circumstances, which can decrease their intention to stay and lead to high nurse turnover (19, 20). Nurses suffering from CF often struggle to show high levels of empathy and compassion toward their patients, becoming less empathetic and compassionate (21). Delivering empathetic nursing care is crucial to delivering high-quality care, and this challenge adds to nurses' fatigue, leading to a total collapse in their ability to care (14). Additionally, nurses who experience a high level of CF have also been reported to have low patient safety standards, poor judgement, and reduced productivity in the workplace (22). It may also reduce engagement with patients and a loss of emotional connection to their practice, which can lead to medical errors and pose a risk to ethical nursing practice (23).

Several studies have suggested that general empathic compassion can be promoted when an individual has strong personal faith and spirituality, reducing the risk of experiencing CF (24, 25). Spirituality refers to an individual's approach to existence, involving a sense of connectedness with oneself, others, and/or a higher power or natural entity; encompasses a sense of purpose in life and the ability to transcend beyond oneself, typical daily routines, and difficult experiences (26), while intelligence is a psychological factor that represents the ability to solve complex problems or make decisions that benefit the individual, and it has evolved in life forms to allow them to adapt to different situations for their own survival and growth (27). Integrating ideas from spirituality and intelligence contributes to spiritual intelligence (SI), which is now considered a vital indicator of psychological well-being (28). SI is theoretically defined as individuals' abilities to connect, realize, and recognize spiritual resources, beliefs, and attributes that help them work better daily, boosting their spiritual well-being (29). In addition to ensuring compassion and flexibility in behaviour, SI can refer to a set of actions that give life a quality of purposefulness in a manner that draws goals beyond the material world (30). With a high level of SI, individual tolerance and adaptability to life difficulties are amplified, leading to increased job satisfaction levels and reduced burnout, reducing the effects of CF (31). Most of the recent studies that investigate SI in the nursing profession have been carried out to evaluate the effect on patient care, such as quality of nursing care (32), psychology ownership and caring behaviour (33), and spiritual care competency (34). However, most studies on SI have focused on the Middle East geographical setting, and limited study on the positive effect SI has been conducted in Malaysia, and it is important to examine how SI impacts the nurses' ProQOL dimension in this specific context.

Given the limited research on SI in the nursing profession in Malaysia, a quantitative study is warranted. An understanding of the application of SI in psychotherapy cannot be underrated, given that it enhances personal effectiveness and improves patient outcomes. A study of the relationship between SI, demographic variables, and ProQOL dimensions is necessary. Therefore, the significance of this study lies in its potential to improve nurses' well-being, patient outcomes, and healthcare delivery in the country by highlighting the importance of SI in improving nurses' ProQOL. To the authors' knowledge, no other study with this primary focus has been conducted in Malaysia, and there are also limited studies that specifically focus on critical care nurses in private hospitals. This study aims to determine the SI and ProQOL among critical care nurses in private hospitals. The outcome of the present study will be added as new ideas and values to the current understanding and knowledge of SI and ProQOL. It also may assist an organization or education institution in identifying potential strategies to promote SI and buffer the impacts of having poor ProQOL among nurses in Malaysia, ultimately improving the quality of care provided to the patients.

Materials and Methods

Sample collection

This cross-sectional study was conducted in three private hospitals located in Peninsular Malaysia. The study population was recruited between March 2021 and March 2022, using a proportionate stratified random sampling method. The inclusion criteria for participation in this

study were a registered nurse working in the critical care area; Intensive Care Unit (ICU), Cardiac Care Unit (CCU) and High Dependency Unit (HDU), with a minimum of seven months of work experience in critical care, and proficient in the English language, both in understanding and communication, whereas the exclusion criteria were nurse that holds a managerial post and nurses recently returned from an extended leave during a study conducted in the setting. To determine the appropriate sample size, Raosoft software was employed, considering a critical care nurse population of 200 individuals from three private hospitals, a 95% confidence level, and a 5% margin of error. The recommended sample size was 132 respondents; however, accounting for an anticipated dropout rate of 10%, a total of 147 respondents were targeted for participation.

The study collected data through an online survey using the Google Forms platform. The link to the online questionnaires were distributed to participants via WhatsApp application by an appointed person from each private hospital. Nurse managers from each of the private hospitals sent messages to their respective WhatsApp groups with a link to the survey and the aforementioned information. To minimize missing data, all questions in the survey form were mandatory.

The online survey consisted of three sections: Section A collected demographic data, Section B used the Spiritual Intelligence Self-Report Inventory (SISRI-24) developed by King (29), and Section C utilized the Professional Quality of Life Version 5 (ProQOL-5) developed by Stamm (3). The SISRI-24 demonstrated a high level of internal consistency and reliability, with a Cronbach's alpha of 0.92, and is considered suitable for use in various settings. The ProQOL-5 subscales showed acceptable Cronbach's alpha values, with CS=0.88, BO=0.75, and STS=0.81, respectively. The SISRI-24 consisted of 24 items divided into four subscales, while the ProQOL-5 comprised of three main dimensions. Both instruments used a Likert scale, with scores for the SISRI-24 ranging from 0 to 96, and the ProQOL-5 ranging from 10 to 50 for each dimension. Higher scores indicated elevated levels of spiritual intelligence and professional quality of life dimensions. Prior to the study, a pilot test was conducted with 30 respondents, and the questionnaires were reviewed by a lecturer and statistician from the Faculty of Health Sciences, UiTM Selangor. The pilot test revealed that both questionnaires had acceptable levels of internal consistency, with Cronbach's alpha values of $\alpha = 0.84$ for SISRI-24, and α: CS = 0.91, BO = 0.70, STS = 0.81 for ProQOL-5.

The data collection process for this study began after receiving ethics clearance from the Research Ethics Committee at Universiti Teknologi MARA (Ref: 600-TNCPI (5/1/6) and data collection permission from the listed private hospitals. Participants provided implied consent by completing the online questionnaire and clicking the 'submit' button. The questionnaire included information on the purpose of the study, the study procedures, potential risks and benefits, participation duration, voluntary participation, the right to withdraw, confidentiality, and researcher contact information. All data provided by participants were kept confidential and stored in a password-protected archive folder to ensure the anonymity of the respondents.

Data analysis

Data were analyses with descriptive and inferential statistics in Statistical Package for the Social Sciences (SPSS) version 26.0. A descriptive statistical test (frequency, percentage, means and standard deviation) was performed to determine levels of SI and ProQOL among critical care nurses while multiple linear regression (MLR) was used to examine the relationship between SI and the demographic characteristics of respondents towards the dimension of ProQOL. The significant level was set at a 0.05 (p-value < 0.05).

Results

Demographic characteristics of respondents

Out of the 147 critical care nurses who were invited to participate in the study, 136 successfully completed the online questionnaire, yielding a response rate of 92.5%. The respondents had a mean age of 30.57 years (SD = 6.47) and a mean working experience of 7.05 years (SD = 5.39). Most participants were female (n = 123, 90.4%), between 21-30 years old, and had 1-5 years of working experience. The highest number of respondents had a diploma as their highest educational qualification. Table 1 provides a summary of the demographic data.

Table 1: Demographic Characteristics of respondents

Variables		Mean ± SD	Frequency (n)	Percentage (%)
Gender				
Male			13	9.6
Female			123	90.4
Age	(Min = 22; Max = 27)	30.57 ± 6.47		
21 – 30 years			81	59.5
31 – 40 years			39	28.7
> 40 years			16	11.8
Working Experience	(Min = 1; Max=35)	7.05 ± 5.39		
1 - 5 years			70	51.5
6 - 10 years			34	25.0
11 - 15 years			21	15.4
> 15 years			11	8.1
Education Level				
Diploma			75	55.1
Degree			61	44.9

Spiritual intelligence

The results showed that 56.6% of the nurses had a moderate level of SI (a score between 32 and 63) and 43.4% had a high level of SI (a score of more than 63). None of the nurses had a low SI (a score of less than 32). The overall total score of SI was 61.30 ± 12.95, indicating a moderate level. Only the total mean SI score was used for further analyses. The frequency distribution of critical care nurses' spiritual intelligence levels is shown in Table 2.

Table 2: Level of the Spiritual Intelligence

Score of spiritual intelligence	Frequency (n = 136)	Percentage (%)
< 32 (low level if SI)	0	0.0
32-63 (Moderate level if SI)	77	56.6
>63 (High level if SI)	59	43.4
Min - Max	38.00 - 94.00	
Mean ± SD	61.30 ± 12.95	

Professional quality of life

Based on the proQOL manual's interpretation guidelines, the results revealed that the CS levels of the critical care nurses were high (n = 33, 24.3%), moderate (n = 98, 72.1%), and low (n = 5, 3.2%). Regarding BO, 77.2% (n = 105) had moderate BO and 22.8% (n = 31) had low BO. Meanwhile, for STS levels, 75% (n = 102) had moderate STS, and 25% (n = 34) had low STS. Notably, none of the participants scored 42 or higher, indicating high levels in either dimension. On average, the total CS, BO, and STS scores were 36.06 ± 7.35, 26.80 ± 5.42, and 26.43 ± 6.27, respectively. Table 3 illustrates the frequency distribution at each scoring threshold for each dimension of ProQOL.

Table 3: Descriptive Findings on The Level for Each Dimension in ProQOL

ProQOL Dimension	Frequency (n = 136)			Mean ± SD	Min - Max
Total Score	**Low (£ 22)**	**Moderate (23 – 41)**	**High (42)**		
CS	5 (3.2%)	98 (72.1%)	33 (24.3%)	36.06 ± 7.35	13 - 50
BO	31 (22.8%)	105 (77.2%)	0 (0%)	26.80 ± 5.42	14 - 39
STS	34 (25.0%)	102 (75.0%)	0 (0%)	26.43 ± 6.27	13 - 40

Relationship between spiritual intelligence and demographic characteristic towards professional quality of life

MLR was performed to examine the relationship between SI and demographic characteristics (age, gender, working experience, and educational level) towards the dimension of ProQOL among critical care nurses. Since there were two categorical variables, the numerical code was used for gender (male = 0, female = 1) and educational level (diploma = 0, degree = 1). Preliminary analyses were conducted to ensure that there were no violations of normality, linearity, or homoscedasticity assumptions. There was no multicollinearity because the variance inflation factor (VIF) is below 10 (35). The results showed the MLR model summary and overall fit statistics for each ProQOL dimension except for the STS model. The analyses revealed that only SI had a significant positive relationship in predicting CS ($\beta = 0.61$, $t = 9.79$, $p < 0.01$), whereas the remaining independent variables did not have a predictive value for CS. For BO, out of all independent variables, it was found that SI had a significant negative relationship with BO ($\beta = -0.31$, $t = -4.19$, $p < 0.01$), and gender had a significant positive relationship with BO ($\beta = 0.20$, $t = 2.77$, $p = 0.01$). Table 4 summarizes the overall regression analysis for the variables associated with each ProQOL dimension.

Discussion

Spiritual intelligence level of critical care nurses

This study found that the overall SI was moderate. A previous study conducted solely on critical care nurses working at a Tehran University of Medical Sciences affiliated hospital in Iran (n = 400) found that most of their participants (76.3%) had moderate levels of SI, 21% had high levels of SI, and 2.7% had low levels of SI, which was most similar to the findings of the present study (36). This results also parallel with the findings study conducted among nurses from seven public hospitals in Kuala Lumpur, Malaysia (n = 448) that demonstrating moderate SI among their participants (33). However, the results of this study differ from those of a recent study conducted on 92 nurses from Shoushtar educational hospitals in Iran, where most of the participants had a high level of SI (37). The discrepancy in the results may be attributed to the fact that the data in the current study were collected from multiple centers, while the previous study was conducted in a single center with a limited number of respondents. Nonetheless, the findings suggest that interventions to boost SI levels to a high level are warranted. Future research may explore the underlying factors that can cultivate the development of SI among critical care nurses to inform the development of effective interventions.

Table 4: Multiple Linear Regression Analysis for Variables Associated with ProQOL

	CS				BO				STS			
	B	SE	β	Sig.	B	SE	β	Sig.	B	SE	β	Sig.
Constant	0.73	0.38		0.05	4.13	0.33		<0.01	3.20	0.46		<0.01
SI	0.83	0.08	0.61	<0.01*	-0.31	0.07	-0.31	<0.01*	0.06	0.10	0.05	0.59
Age	0.02	0.01	0.15	0.15	-0.02	0.01	-0.19	0.12	-0.02	0.01	-0.22	0.12
Gender (Female)	0.04	0.15	0.02	0.79	0.37	0.13	0.20	0.01*	-0.03	0.18	-0.02	0.86
Working Experience	0.02	0.01	0.18	0.08	-0.02	0.01	-0.20	0.09	0.01	0.01	0.08	0.58
Education Level	0.09	0.09	0.06	0.33	-0.12	0.08	-0.11	0.13	-0.18	0.11	-0.14	0.10

Note. B = unstandardized regression coefficient; SE = standard error; β = standardized regression coefficient. *$p < 0.05$.
Model Summary:

CS: F [5, 130] = 29.12, $p < 0.01$, $R^2 = 0.53$.
BO: F [5, 130] = 13.68, $p < 0.01$, $R^2 = 0.34$.
STS: F [5, 130] = 1.25, $p = 0.29$, $R^2 = 0.05$.

The level of professional quality of life

The overall respondents in this study had low to moderate levels for all dimensions. Most participants had a moderate level of CS, with less than 25% having a high level and only 3.2% having a low level. Focusing on the CS dimension, it is worth noting that most participants still had moderate Compassion Satisfaction (CS) levels, consistent with previous research. Many studies have reported moderate levels of CS among nurses, particularly those working with high acuity patients (9, 38, 39). This similarity in findings may be due to the shared experiences and exposure to high-acuity patients across different countries, nurse populations, and settings. Interestingly, the levels of CS among nurses remained consistent before and during the COVID-19 outbreak, indicating that nurses are adaptable to any scenario while still feeling appreciated and benefiting from their work (40). This suggests that nursing is a rewarding profession and that nurses can manage stress and maintain their emotional well-being over time. However, it is important to note that some participants had low levels of CS, which may indicate a need for targeted interventions to improve their work experience and emotional well-being.

Next, the CF in this study measured via the BO and STS dimensions showed that, on average, the respondents had only low to moderate levels, with none having a high level. These findings are consistent with previous research, which has reported moderate levels of BO and STS among critical care nurses (39, 41-43). It has been widely acknowledged that critical care nurses are more likely to experience moderate to high levels of BO and STS, particularly when compared to nurses working in other areas (3). A global systematic review of 79 studies has indicated that critical care nurses exhibit the highest levels of BO and STS, which can be attributed to the complexity of critical care settings and the constant exposure to critically ill patients with poor prognoses (44). In addition, critical care nurses cannot avoid the emotional burden of caring for patients with high acuity and complexity, which further exposes them to BO and results in CF (13). The present study was conducted in a private hospital setting, which may explain the absence of high STS levels. Most of the private hospital critical care units were classified as level 1 or 2, indicating that the acuity and complexity of cases the nurses encountered were slightly lower than those in government hospital settings, where 99% of cases were classified as level 2 or higher (45).

The relationship between spiritual intelligence and demographic characteristics towards professional quality of life among critical care nurses.

In this study, SI was found to influence CS positively. To the authors' knowledge, previous studies have not specifically explored the impact of SI on CS among nurses, and this study's results provide new insights into this relationship. The authors note that although the present study cannot be directly compared with previous nursing studies, it is consistent with non-nursing studies involving teaching and administrative staff (46) and pastor populations (47). Theoretical explanations for this finding include SI's integration of intelligence and spirituality, which allows individuals to engage in intellectual and humane activities while maintaining internal and external serenity (48). The previous evidence suggests that SI's benefits extend beyond organizational employees to include healthcare professionals such as nurses (28). Therefore, based on previous studies and the literature, it can be concluded that SI significantly predicts CS levels.

This study also found that as the level of SI increased, BO decreased, and female participants were more susceptible to high levels of BO than males. This finding was consistent with previous studies that examined the direct effects of SI on nurses' BO in Iran, Malaysia, and Indonesia (49, 33, 50), whereas the majority of the existing literature has found no significant difference between gender and BO (2, 9, 51). The relationship between SI and BO can be explained by SI's spiritual elements, which determine the extent of BO symptoms, effects, and coping mechanisms (52). SI creates resilience, enabling individuals with higher SI to cope better

with difficulties resulting from traumatic exposure (53, 54). The finding that female participants were more susceptible to high levels of BO than males can be attributed to gender differences in coping strategies. Females tend to use coping techniques that regulate emotional responses to stress, while males typically employ problem-focused or instrumental approaches to manage stressful experiences (55, 56).

This study possesses certain limitations that warrant careful consideration. First, the generalizability of the findings may be restricted by the cross-sectional research design, which cannot establish causal relationships. Additionally, data were obtained during the COVID-19 pandemic, which could be deemed a limitation of the study as the participant's physical and emotional conditions might have been compromised while completing the questionnaires. Another constraint relates to the study's geographic location, which could make it challenging to extrapolate these results to other contexts. Given that the study was conducted in private hospitals, the applicability of our findings to public institutions may be limited. Despite these limitations, this study has established a baseline of nurses' SI level and the level for each ProQOL, specifically CS, BO, and STS, while broadening the understanding of the SI influence on these three dimensions in the local context.

Conclusion

In summary, the level of SI and ProQOL dimension among nurses in this study was in moderate level. The study's results suggested that a holistic strategic approach is needed to improve CS and mitigate the negative component of ProQOL (BO and STS) by promoting SI. It is hoped that nursing education institutes and hospital organizations can contribute to cultivating SI among nurses with extra consideration given to female nurses. Further investigations into the relationship between SI, demographic data, and STS are warranted, as the model could not predict this relationship effectively.

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Competing interests

The authors declare that they have no competing interests.

Ethical clearance

Ethics approval obtained from the Research Ethics Committee at Universiti Teknologi MARA (Ref: 600-TNCPI (5/1/6) and data collection permission letter from the listed private hospitals.

References

1. Bahari G, Asiri KA, Nouh N, Alqahtani N. Professional Quality of Life Among Nurses: Compassion Satisfaction, Burnout, and Secondary Traumatic Stress: A Multisite Study. SAGE Open Nursing. 2022; 8:1-8.
2. Karlsson M, Pennbrant S. Ideas of caring in nursing practice. Nursing Philosophy, 2020; 21(4): 1-5
3. Stamm, BH. The Concise ProQoL Manual. Proqol.org. 2010. Available at: https://proqol.org/ProQOl_Test_Manuals.html. Accessed 19 May 2021
4. Sacco TL, Copel LC. Compassion satisfaction: A concept analysis in nursing. Nursing Forum. 2018;53(1):76–83.
5. Stoewen DL. Moving from compassion fatigue to compassion resilience Part 4: Signs and consequences of compassion fatigue. The Canadian Veterinary Journal. 2020;61(11):1207–1209.
6. Ondrejková N, Halamová J. Prevalence of compassion fatigue among helping professions and relationship to compassion for others, self-compassion and self-criticism. Health &Amp; Social Care in the Community. 2020;30(5):1680–1694.
7. Xie W, Chen L, Feng F, Okoli CT, Tang P, *et al*. The prevalence of compassion satisfaction and compassion fatigue among nurses: A systematic review and meta-analysis. International Journal of Nursing Studies. 2021;120(103973):1-17.
8. Dikmen Y, Aydın Y, Tabakoğlu P. Compassion fatigue: A Study of critical care nurses in Turkey. Journal of Human Sciences. 2016;13(2): 2879.
9. Jakimowicz S, Perry L, Lewis J. Compassion satisfaction and fatigue: A cross-sectional survey of Australian intensive care nurses. Australian Critical Care. 2018;31(6):396–405.
10. Mohd Ilahi BI. Compassion fatigue is 'the new black'. The Star. 2020. Available at: https://www.thestar.com.my/opinion/letters/2020/09/29/compassion-fatigue-is-the-new-black. Accessed 5 March 2021
11. Turan N, Ançel G. Examination of the psychological changes in nurses due to workload in an intensive care unit: a mixed method study. Contemporary Nurse. 2020;56(2):171–184.
12. Labrague LJ, De Los Santos JA. Resilience as a mediator between compassion fatigue, nurses' work outcomes, and quality of care during the COVID-19 pandemic. Applied Nursing Research. 2021;61: 151476.
13. Alharbi J, Jackson D, Usher K. Compassion fatigue in critical care nurses and its impact on nurse-sensitive indicators in Saudi Arabian hospitals. Australian Critical Care. 2020;33(6):553–559.
14. Gustafsson T, Hemberg J. Compassion fatigue as bruises in the soul: A qualitative study on nurses. Nursing Ethics. 2021;29(1):157–170.
15. Roche MA, Duffield CM, Homer C, Buchan J, Dimitrelis S. The rate and cost of nurse turnover in Australia. Collegian. 2015;22(4):353-358.
16. Yusof TA. Govt tackling nurse shortage. New Straits Times. 2019. Available at: https://www.nst.com.my/

news/government-public-policy/2019/05/487884/govt-tackling-nurse-shortage. Accessed 5 March 2021
17. Ezaili Alias N, Hazieqah Rohmanan N, Ismail S, Koe WL, Othman R. Factors Influencing Turnover Intention in a Malaysian Manufacturing Company. KnE Social Sciences. 2018;3(10):771.
18. Mun FC, Azam SMF, Albattat ARS. Employee Retention of Registered Nurses in a Malaysian Private Hospital: A Pilot Study. The Malaysian Journal of Nursing. 2021;12(4): 17-21
19. Wells-English D, Giese J, Price J. Compassion Fatigue and Satisfaction: Influence on Turnover Among Oncology Nurses at an Urban Cancer Center. Clinical Journal of Oncology Nursing. 2019:23(5):487–493.
20. Yang YH, Kim JK. Factors Influencing Turnover Intention in Clinical Nurses: Compassion Fatigue, Coping, Social Support, and Job Satisfaction. Journal of Korean Academy of Nursing Administration. 2016;22(5):562.
21. Graves J, Joyce C, Hegazi I. From Empathy to Compassion Fatigue: A Narrative Review of Implications in Healthcare. Intechopen.com. 2022. Available at: https://www.intechopen.com/online-first/84275. Accessed 4 May 2021.
22. Benyon B. Compassion Fatigue, Burnout Leads to High Nursing Turnover. Oncology Nursing News. 2021. Available at: https://www.oncnursingnews.com/view/compassion-fatigue-burnout-leads-to-high-nursing-turnover. Accessed 8 Feb 2020.
23. Lachman VD. Compassion fatigue as a threat to ethical practice: identification, personal and workplace prevention/management strategies. MedSurg Nursing. 2016;25(4).
24. Thomas C, Cuceu M, Tak HJ, Nikolic M, Jain S. *et al*. Predictors of Empathic Compassion: Do Spirituality, Religion, and Calling Matter? Southern Medical Journal. 2019;112(6):320–324.
25. Newmeyer M, Keyes B, Palmer K, Kent V, Spong S. *et al.* Spirituality and religion as mitigating factors in compassion fatigue among trauma therapists in Romania. Journal of Psychology and Theology. 2016;44(2):142–151.
26. Weathers E, McCarthy GM, Coffey A. Concept Analysis of Spirituality: An Evolutionary Approach. Nursing Forum, 2016;51(2):79–96.
27. Lee D (2020). Birth of Intelligence: From RNA to Artificial Intelligence. Oxford University Press. 1st Ed. London, England. 2020.
28. Stiliya KJ, Pandey N. Influence of Spiritual intelligence on Happiness and Wellbeing: A Review. Mind and Society. 2022;11(02):121–128.
29. King, D.B Rethinking claims of spiritual intelligence: A definition, model, and measure. Unpublished master thesis. Ontorio Canada: Trent University.2008.
30. Aliabadi PK, Zazoly AZ, Sohrab M, Neyestani F, Nazari N, Mousavi. *et al.*The role of spiritual intelligence in predicting the empathy levels of nurses with COVID-19 patients. Archives of Psychiatric Nursing. 2021;35(6):658–663
31. Koražija M, Šarotar Žižek S, Mumel D. The Relationship between Spiritual Intelligence and Work Satisfaction among Leaders and Employees. Naše Gospodarstvo/ Our Economy, 2016;62(2):51–60.
32. Beni KN, Dewanti N, Yanriatuti I, Prakosa MM, Purwanza S. Spiritual Intelligence Roles to Improve the Quality of Nursing Care: A Systematic Review. Jurnal Ners. 2020;14(3):93.
33. Kaur D, Sambasivan M, Kumar N. Effect of spiritual intelligence, emotional intelligence, psychological ownership, and burnout on caring behaviour of nurses: a cross-sectional study. Journal of Clinical Nursing. 2013;22(21–22):3192–3202.
34. Riahi S, Goudarzi F, Hasanvand S, Abdollahzadeh H, Ebrahimzadeh F, Dadvari Z. Assessing the Effect of Spiritual Intelligence Training on Spiritual Care Competency in Critical Care Nurses. Journal of Medicine and Life. 2018;11(4):346–354.
35. Kim JH. Multicollinearity and misleading statistical results. Korean Journal of Anaesthesiology. 2019;72(6), 558–569.
36. Moradnezhad M, Seylani K, Navab E, Esmaeilie M. Spiritual intelligence of nurses working at the intensive care units of hospitals affiliated with Tehran University of Medical Sciences. Nursing Practice Today. 2017;4(4):170–179.
37. Hatami A, Mahmoud R, Hafezi Nia D, Bahrain MR, Bamboo MS. The Relationship between Spiritual Intelligence and Resilience with Self efficacy of Clinical Performance in Nurses Working in Shoushtar Educational Hospitals. Journal of Research in Medical and Dental Science. 2019;7(3):8–13
38. Al-Majid S, Carlson N, Kiyohara M, Faith M, Rakovski C. Assessing the Degree of Compassion Satisfaction and Compassion Fatigue Among Critical Care, Oncology, and Charge Nurses. JONA. 2018;48(6):310–315.
39. Kelly LA, Lefton C. Effect of Meaningful Recognition on Critical Care Nurses' Compassion Fatigue. American Journal of Critical Care. 2017;26(6); 438–444.
40. Zakeri MA, Rahiminezhad E, Salehi F, Ganjeh H, Dehghan M. Compassion Satisfaction, Compassion Fatigue and Hardiness Among Nurses: A Comparison Before and During the COVID-19 Outbreak. Frontiers in Psychology. 2022;12.815180:1-9
41. Alharbi J, Jackson D, Usher K. Compassion fatigue in critical care nurses. Saudi Medical Journal. 2019;40(11):1087–1097.
42. Sacco TL, Ciurzynski SM, Harvey MW, Ingersoll GL. Compassion Satisfaction and Compassion Fatigue Among Critical Care Nurses. Critical Care Nurse. 2015;35(4):32–42.
43. Salimi S, Pakpour V, Rahmani A, Wilson M, Feizollahzadeh H. Compassion Satisfaction, Burnout, and Secondary Traumatic Stress Among Critical Care Nurses in Iran. Journal of Transcultural Nursing. 2019;31(1):59–66.
44. Xie W, Chen L, Feng F, Okoli CT, Tang P, *et al.* The prevalence of compassion satisfaction and compassion fatigue among nurses: A systematic

review and meta-analysis. International Journal of Nursing Studies. 2021;120.103973.
45. Mat Nor MB. Intensive Care Units in Malaysia: Scope for Improvement. IIUM Medical Journal Malaysia. 2020;18(3): 1-2.
46. Mufti S, Naz I, Saif A. Relationship between Spiritual Intelligence and Professional Quality of Life among Professionals of University of Gujrat. European Academic Research. 2016;5(2):1527-1537.
47. Snelgar RJ, Renard M, Shelton S. Preventing Compassion Fatigue Amongst Pastors: The Influence of Spiritual Intelligence and Intrinsic Motivation. Journal of Psychology and Theology. 2017;45(4);247–260.
48. Amram YJ. The Intelligence of Spiritual Intelligence: Making the Case. Religions, 2019;13(12):1140.
49. Hojat M, Zeinijahromi M. The relationship between spiritual intelligence and burnout in nurses at Jahrom University of Medical Sciences. Journal of Fundamental and Applied Sciences. 2017;9:1419–1425.
50. Sunaryo H, Nirwanto N, Manan A. The Effect of Emotional and Spiritual Intelligence on Nurses' burnout and Caring Behavior. International Journal of Academic Research in Business and Social Sciences. 2018;7(12). 1211-1227.
51. Adolfo CS. Predictors of professional quality of life among nurses–A cross sectional study. International Journal of Advanced and Applied Sciences, 2021;8(2):44–53.
52. Jalaei HR, Tabarsa N. The Relationship between Spiritual Intelligence with Mental Health and Job Burnout (Case Study: Rural Cooperative Organization of Golestan Province). Dutch Journal of Finance and Management. 2017;1(2). 46
53. Ismail AA, Sulaiman T, Roslan S. Models of Relationship between Emotional, Spiritual, Physical and Social Intelligence, Resilience and Burnout among High School Teachers. Universal Journal of Educational Research. 2020;8(1A):1–7.
54. Khosravi M, Nikmanesh Z. Relationship of spiritual intelligence with resilience and perceived stress. Iranian Journal of Psychiatry and Behavioral Sciences. 2014;8(40):52–56.
55. Graves BS, Hall ME, Dias-Karch C, Haischer MH, Apter C. Gender differences in perceived stress and coping among college students. PLOS ONE. 2021;16(8):1-12.
56. Lee J, Cho YH. Gender Differences in Job Stress and Stress Coping Strategies among Korean Nurses. International Journal of Bio-Science and Bio-Technology. 2016;8(3):143–148.