

Professional Quality of Life Among Nurses: Compassion Satisfaction, Burnout, and Secondary Traumatic Stress: A Multisite Study

SAGE Open Nursing
Volume 8: 1–8
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DOI: 10.1177/23779608221112329
journals.sagepub.com/home/son



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Abstract

Introduction: Increased stressors and decreased job satisfaction are major challenges in nursing. Important factors of better professional quality of life include compassion satisfaction, burnout, and secondary traumatic stress. It is critical to assess these factors to help improve nurses' clinical practices.

Objective: The purpose of this study was to determine the relationships between the three factors and associated factors.

Methods: A cross-sectional, multisite study was conducted on a convenience sample of 464 nurses working at three public hospitals in Saudi Arabia. The Professional Quality of Life Version 5 was used to collect data. Bivariate and multivariate analyses were run using SPSS.

Results: Scores were slightly moderate on the compassion satisfaction, burnout, and secondary traumatic stress levels. Compassion satisfaction was statistically significantly and negatively associated with burnout. A statistically significant relationship was reported between compassion satisfaction and secondary traumatic stress. Further, there was a statistically significant association between burnout and secondary traumatic stress. In regression, only the secondary traumatic stress model was statistically significant.

Conclusions: Nurse managers should use highly standard guidelines to reduce secondary traumatic stress levels. Further actions addressing potential issues for improving compassion satisfaction and reducing burnout levels among nurses are also recommended.

Keywords

compassion satisfaction, burnout, secondary traumatic stress, nurses

Received 8 March 2022; accepted 18 June 2022

Introduction

Quality and safe care is a fundamental goal of health care systems around the world. However, job-related stress is on the rise, posing a severe threat to both individuals and institutions. This issue can also lead to increased absenteeism and poor performance among workers (Almazan et al., 2019). Though stress is a significant issue for organizations due to its potential negative consequences, it may be even more serious for healthcare workers, particularly nurses who are subjected to extreme stress in clinical settings due to heavy workloads (Alamri & Almazan, 2018). Nursing ranks 27th out of 130 difficult jobs due to psychological health issues; thus, high stress levels have been reported in hospitals (Asefzadeh et al., 2017). Stress also negatively impacts a person's psychophysical state and personality, which is

reflected physically, emotionally, psychologically, or socially (Starc, 2018). According to Starc, nursing fosters close interactions with patients, which can lead to the development of stress symptoms.

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Literature Review

The term “professional quality of life” (ProQOL) has been introduced recently to illustrate levels of occupational stress. The ProQOL has also been particularly important in studying health-care workers (Salimi et al., 2020). It is defined as “the quality of one’s feeling in relation to his/her job as a helper” (Stamm, 2010, p. 8). Three factors influence nurses’ ProQOL at the workplace: compassion satisfaction, burnout, and secondary traumatic stress. Compassion satisfaction arises when empathy motivates the helper to act altruistically and alleviate patients’ pain, which helps cope with the negative aspects of work (Sacco & Copel, 2018). Nurses are filled with hope, optimism, and the desire to continue serving as professional caregivers. Care, compassion, and empathy for patients are thought to impact care professionals’ personal and professional lives (Salimi et al., 2020).

Burnout is a serious problem in work environments due to its negative consequences for employee productivity (De-Oliveira et al., 2019). Burnout refers to a psychological syndrome marked by emotional issues, depersonalization, and a feeling of diminished accomplishment in day-to-day work (Patel et al., 2018). According to Patel et al., emotional exhaustion is characterized by a sense of being overworked and of using up one’s emotional and physical energy, resulting in exhaustion. Depersonalization, or treating people as objects rather than human beings, can result in negative, antagonistic attitudes and poor feelings toward patients. Low levels of day-to-day accomplishment are associated with negative self-esteem, feelings of incapacity, and low effectiveness at work.

The third factor influencing nurses’ ProQOL is secondary traumatic stress. This factor refers to natural follow-up behaviors and feelings that occur after learning about a terrible event or experience (Bock et al., 2020). Secondary traumatic stress symptoms include negative thoughts, feelings, and/or behaviors triggered by awareness of traumatic events that others have gone through, as well as involvement in supporting trauma sufferers. Individuals with secondary traumatic stress symptoms could have the same symptoms of post-traumatic stress disorder (Ogińska-Bulik et al., 2021). Secondary traumatic stress has been observed regularly in various caring professions, including nursing. Nurses with secondary traumatic stress are emotionally distressed and have frequent negative thoughts and sleep difficulties (Bock et al., 2020). They are at risk of diseases since they are providing care for nearly 24 h a day. Nurses are also subjected to a variety of mental strains and developing different psychological disorders as a result of caring (Lee et al., 2021).

Nurses in Saudi Arabia and other countries work in either the public or private health care sector. The public sector provides free health care to Saudis from governmental medical institutes, while the private sector serves both citizens and foreigners for a fee. At the time of this study, the total number of public hospitals in Saudi Arabia was around 487, while the number of private hospitals was around 158 (Ministry of Health, 2017). In

2018, there were approximately 185 thousand nurses; only 38% of these nurses were Saudi (Alluhidan et al., 2020). The low number of Saudi nurses in hospitals can be attributed to various factors, such as a lack of financial incentives and the difficulties of continuing education. Such factors could lead to increased stress levels and low performance among nurses.

To address current nursing challenges across the country, there should be innovative strategies that make nursing more appealing (Alluhidan et al., 2020). One of the objectives of the Saudi National Development Plan, *Vision 2030*, is to improve the attractiveness of nursing (Ministry of Health, 2021). Increased stressors and decreased job satisfaction are important challenges. Further, literature on compassion satisfaction, burnout, and secondary traumatic stress factors in Saudi Arabia is lacking. This could lead to low levels of understanding and knowledge of elements that support successful performance in nursing. On this basis, this study was developed to determine the relationships between compassion satisfaction, burnout, and secondary traumatic stress and associated factors. Our hypothesis was that there may be relationships between the three variables. The findings of this study could contribute to improved performance at the workplace, which could positively impact healthcare services and patient safety.

Methods

Study Design

A cross-sectional multisite study was conducted on nurses working at three public hospitals. The hospitals are coded as A, B, and C for confidentiality. The three hospitals were selected based on convenient accessibility. They are located in two different regions of Saudi Arabia: two are in the Central region (hospitals A & B) with a capacity of approximately 1,200 and 1,400 beds, respectively, and one is in the Southern region (hospital C), with a total bed capacity of nearly 575. Hospital A is a teaching hospital that serves university students, while hospitals B and C are public hospitals operated by the Ministry of Health. The three hospitals have large capacities and distinct health environments. Therefore, this study provides findings that might be applied to similar health settings.

Research Questions

1. What is the level of compassion satisfaction, burnout, and secondary traumatic stress among nurses in Saudi Arabia?
2. What are the factors that are associated with compassion satisfaction, burnout, and secondary traumatic stress?
3. What is the relationship between compassion satisfaction, burnout, and secondary traumatic stress while controlling for demographic variables?

Sampling

The study was conducted on a convenience sample of nurses working at the three selected hospitals. Participants were registered nurses in Saudi Arabia and provided daily care to patients at one of the three hospitals for at least a year. They also needed good English proficiency in order to answer the survey items. Those who did not seek to participate or were in positions that did not have direct contact with patients, such as administration, were excluded. Intern students who had passed the Saudi Nursing Licensure Exam were also excluded from participation, as they likely had limited experience in practical environments.

The total number of nurses in the three selected hospitals is likely around 2,000. The estimated minimum sample size was 323, with a proportion of 50%, a 95% confidence interval, and a 5% margin of error, using the Raosoft sample size calculator (<http://www.raosoft.com/samplesize.html>). This tool has been used in previous literature (Olowofela & Isah, 2017; Osei-Yeboah et al., 2021). To address potential missing data, about 15% was added to the estimated sample size, providing a minimum needed sample size of 371.

Instrumentation

The demographic survey included specific individual factors (i.e., age, gender, marital status, living with children, level of education, department type, and hospital type). The instrument used was the ProQOL Version 5, which includes 30 items presented in three subscales: compassion satisfaction (items 3, 6, 12, 16, 18, 20, 22, 24, 27, 30), burnout (items 1, 4, 8, 10, 15, 17, 19, 21, 26, 29), and secondary traumatic stress (items 2, 5, 7, 9, 11, 13, 14, 23, 25, 28) (Stamm, 2002; Stamm, 2010). The ProQOL is a 5-point Likert-type scale used to measure the frequency of respondents' experiences at work over the past 30 days. Scores range from 1 (never) to 5 (very often), with higher scores indicating higher levels in each subscale. The ProQOL demonstrates high reliability and validity in over 200 published articles (Misouridou et al., 2020). For example, an acceptable Cronbach's alpha ($\alpha=0.73$) value was determined in a study conducted in Iran (Ghorji et al., 2018). Further, the ProQOL scale is available in various languages, including Arabic. However, the English version was used since English is the official language of nursing education and practice in Saudi Arabia.

Ethical Approval

The study was approved by the institutional review boards located at King Khalid University Hospital (21/0826/IRB), King Saud Medical City (H1RE-06-Sep21-01), and Aseer Central Hospital (REC 15-09-2021). Another permission from unit managers to share the survey link with nurses was also obtained. There was no more than minimal risk for participating in the study. Specifically, participants may

experience possible discomfort responding to some questions. Further, there were no direct benefits to the participants from participation. However, knowledge gained from this study may help in future studies on ProQOL among nurses. Collected data were kept confidential, and no identifying information were collected or linked to the survey response. Participation was completely voluntary and informed consent was ensured.

Data Collection and Analysis

Due to COVID-19 restrictions, data collection was performed using an anonymous questionnaire created on a secure online platform. The study link was sent to nurses through unit managers at the selected hospitals. Before participation, eligible participants were informed that the study was completely anonymous and that they should only join if they were truly interested. Surveys were collected from September through November of 2021. Collected data were analyzed using SPSS (v. 26) (IBM Corp., Armonk, NY, USA). Frequency distributions were run to identify missing data and any data entry errors. No more than 3% of data were missing per item, and missing data were replaced with the item mean.

Descriptive statistics and central tendency measures were run to describe the sample and study variables. Some variables were collapsed into binary categories for analysis. Independent sample *t*-test and Pearson's coefficient correlation tests were used where appropriate. One-way analysis of variance (ANOVA) was also used to determine whether there were any statistically significant differences between the means of education levels, departments, and hospitals. Further, multiple linear regression tests were used to examine the predictors of compassion satisfaction, burnout, and secondary traumatic stress. The variables "level of education," "department," and "hospital" were each combined to create two dummy variables for regression analysis.

Results

Sample Characteristics

A total of 464 nurses at the three selected hospitals completed the questionnaire. Of the respondents, most were female (90.7%), aged between 24 and 62 years, married (67.5%), and lived with children (62.5%). About 70% held a bachelor's degree in nursing. Most participants worked at hospital A (51.3%) as it is a university hospital serving academic and research purposes continuously. More details concerning sample characteristics are provided in Table 1. Regarding the main variables, scores were slightly moderate on the compassion satisfaction subscale ($M=32.43$, $SD=6.64$, range: 10–50), burnout subscale ($M=28.74$, $SD=4.88$, range: 10–41), and secondary traumatic stress subscale ($M=28.82$, $SD=7.26$, range: 10–47). The internal consistency

of the ProQOL in this study was acceptable (Cronbach's $\alpha = 0.702$).

Bivariate Analyses

Using an independent sample *t*-test, no statistically significant differences were reported in the means of the demographic factors (gender, marital status, and living with children) and the main variables of compassion satisfaction, burnout, and secondary traumatic stress ($p > .05$). Additional findings about differences among demographic means and main variables are available in Table 2. When running one-way ANOVA for demographics (level of education, department, and hospital type), no statistically significant differences were reported ($p > .05$).

Additional bivariate analyses were conducted using the Pearson's coefficient correlation test (see Table 3). Age was found to be statistically significantly and negatively associated both with burnout ($r = -.105$, $p = .024$) and secondary traumatic stress ($r = -.105$, $p = .023$). Compassion satisfaction was also significantly and negatively associated with burnout ($r = -.356$, $p < .001$). A statistically significant, positive, and weak relationship was reported between compassion satisfaction and secondary traumatic stress ($r = .112$, $p = .015$). Further, there was a statistically significant

association between burnout and secondary traumatic stress ($r = .407$, $p < .001$).

Multivariate Analyses

All factors, including demographic factors, were subjected to multiple linear regression analyses to identify predictors of compassion satisfaction, burnout, and secondary traumatic stress (see Table 4). The only regression model found to be statistically significant was the secondary traumatic stress subscale ($F [10, 463] = 2.727$, $p = .003$, $R^2 = .057$). As indicated through bivariate analyses, age was found to have a statistically significant negative association with secondary traumatic stress ($\beta = -0.175$, $p < .001$). Further, the variables of living with children ($\beta = 0.200$, $p = .004$) and higher education ($\beta = 0.099$, $p = .035$) were both statistically significantly associated with secondary traumatic stress.

Discussion

This study aimed to assess nurses' perceptions of compassion satisfaction, burnout, and secondary traumatic stress and the relationships of these variables. The findings revealed that the nurses had above-average levels of compassion satisfaction, while average levels of burnout and secondary traumatic stress were lower. Our findings were similar to prior studies of nurses in Saudi Arabia that used the same questionnaire (Alharbi et al., 2020a, 2020b; Cruz et al., 2020). Our findings were also consistent with studies of emergency nurses in the United States (Hunsaker et al., 2015) and Chinese nurses working in a tertiary hospital (Wang et al., 2020), as well as with a meta-analysis review study (Xie et al., 2021). The similarity of the findings might be explained by the diverse nursing working culture in Saudi Arabia. The number of Saudi nurses in the country does not satisfy the needs of the health care sector. Therefore, Saudi hospitals seek expat nurses to address the nurse shortage. To attract international nurses, hospitals tend to pay higher wages and provide accommodation and transport (Alluhidan et al., 2020). Further, salary and incentives were reported important predictors of satisfaction among nurses (Deriba et al., 2017). These incentives may have boosted nurses' levels of compassion satisfaction.

Our study showed that the younger the nurse, the higher the levels of burnout and secondary traumatic stress. However, age was not associated with compassion satisfaction. Our findings contrast with prior studies of nurses in Saudi Arabia, where age was not associated with ProQOL subscales (Alharbi et al., 2020a, 2020b; Cruz et al., 2020). A meta-analysis study also found that age was not associated with compassion satisfaction, burnout, and secondary traumatic stress (Zhang, Han et al., 2018). However, in a recent study of Chinese nurses, older nurses were found to have higher levels of compassion satisfaction and lower levels of burnout, though age was not associated with

Table 1. Sample Characteristics ($N = 464$).

Characteristics	N	(%)
Age (years), $M = 37.20$, $SD = 7.46$, range: 24–62		
25–30	78	(16.8)
31–45	297	(64.0)
> 45	67	(14.4)
Gender		
Female	421	(90.7)
Male	43	(9.3)
Marital status		
Single	137	(29.5)
Married	313	(67.5)
Divorced/widow	14	(3.01)
Level of education		
Diploma	120	(25.9)
Bachelor	324	(69.8)
Higher education	20	(4.3)
Live with children		
Yes	290	(62.5)
No	174	(37.5)
Work department		
Medical department	226	(48.7)
Critical care units	177	(38.1)
Surgical department	61	(13.1)
Hospital name		
Hospital A	238	(51.3)
Hospital B	133	(28.7)
Hospital C	93	(20.0)

Note. M = mean; SD = standard deviation.

Table 2. Mean Differences Between Compassion Satisfaction, Burnout, and Secondary Traumatic Stress and Some Demographic Variables.

Variable mean differences (t-test)	Binary categories	Compassion satisfaction		p-value	Burnout		p-value	Secondary traumatic stress M (SD)		p-value
		M (SD)	SD		M (SD)	SD		M (SD)	SD	
Gender	Female	32.35	6.50	.217*	28.71	4.77	.325*	28.88	6.99	.281*
	Male	33.18	7.90		29.06	5.86		28.20	9.53	
Marital status	Married	32.29	6.60	.261	28.81	4.78	.336	28.85	7.46	.435
	Not married	32.71	6.72		28.60	5.09		28.74	6.84	
Live with children	Yes	32.38	6.50	.420	28.86	4.81	.258	29.23	7.28	.057
	No	32.51	6.88		28.55	4.99		28.13	7.18	

Note. Marital status variable was collapsed into binary category.

*p-value <.05.

Table 3. Correlations Between Continuous Variables.

	Age	Compassion satisfaction	Burnout	Secondary traumatic stress
Age	1			
Compassion satisfaction	.040	1		
Burnout	-.105*	-.356**	1	
Secondary traumatic stress	-.105*	.112*	.407**	1

*Correlation is significant (less than .05 level).

**Correlation is significant (less than .001 level).

secondary traumatic stress (Wang et al., 2020). Older emergency nurses in the United States and Portugal also had higher levels of compassion satisfaction and lower levels of burnout and secondary traumatic stress compared with younger nurses (Borges et al., 2019; Hunsaker et al., 2015), which is consistent with our findings regarding the relationships between age, burnout, and secondary traumatic stress. Younger nurses may lack clinical experience and feelings of competence, which might increase their sense of burnout and secondary traumatic stress.

In this study, compassion satisfaction had a moderate inverse relationship with burnout, whereas secondary traumatic stress had a weak positive association with compassion satisfaction. In addition, a moderate positive correlation was found between burnout and secondary traumatic stress. These findings are consistent with a correlative meta-analysis of compassion satisfaction, compassion fatigue, and burnout in nursing, which found similar relationships between compassion satisfaction and burnout and between burnout and secondary traumatic stress (Zhang, Han et al., 2018). However, the relationship found in our study between compassion satisfaction and secondary traumatic stress contrasts with previous studies (Zhang, Han et al., 2018). The discrepancy in our findings may be explained by the unique and

diverse nursing work environment in Saudi Arabia, which provides extra incentives for expat nurses and might increase their compassion satisfaction levels. Accordingly, examinations of other factors associated with nurses' job satisfaction, such as work-related factors (workload, autonomy, and commitment) and personal factors (sleep quality, smoking, and exercise), are suggested for future studies.

Among the multivariate analyses in this study, only the secondary traumatic stress model was statistically significant. This model revealed that being a younger nurse, living with children, and holding a higher education degree influenced secondary traumatic stress. To our knowledge, this is the first study to examine the relationship between living with children and secondary traumatic stress. Providing care for children along with work obligations might contribute to secondary traumatic stress (Perry, 2014). In addition, higher levels of education in nursing were associated with secondary traumatic stress. However, higher education in another study was associated with reduced compassion fatigue (Zhang, Zhang et al., 2018), which is inconsistent with our findings. The explanation for this may be that nurses with higher education may have more advanced roles like leadership and education, which could contribute to their secondary traumatic stress, as discussed in the literature (Shingler-Nace et al., 2018; Ulmen & Lloyd, 2021). Thus, health institutions may benefit from raising awareness through resilience training for nurses, including nurse managers and educators, to support and strengthen their personal and professional wellbeing.

Study Limitations

There are several limitations to be noted. Despite the use of a multisite design, convenience sampling may have introduced sampling bias, limiting the generalizability of our findings. In cross-sectional research, it is also challenging to report cause-and-effect relationships. Another limitation is related to the study's geographic setting, which may make it difficult to apply these findings elsewhere. Because the study was conducted at public-sector hospitals, our findings may not

Table 4. Regression Analysis for Variables Associated With Satisfaction, Burnout, and Secondary Traumatic Stress (N = 464).

	Compassion satisfaction*				Burnout**				Secondary traumatic stress***			
	B	SE	Beta	Sig.	B	SE	Beta	Sig.	B	SE	Beta	Sig.
Constant	29.420	1.889		<0.001	31.905	1.377		<0.001	32.600	2.018		<0.001
Gender	1.029	1.094	0.045	0.348	0.006	0.797	0.000	0.994	-0.953	1.168	-0.038	0.415
Age	0.055	0.047	0.061	0.249	-0.091	0.034	-0.139	0.009	-0.170	0.051	-0.175	<0.001
Marital status	0.762	0.956	0.054	0.426	-0.110	0.696	-0.011	0.874	1.316	1.020	0.085	0.198
Live with children	-0.041	0.966	-0.003	0.966	1.042	0.704	0.104	0.139	2.996	1.031	0.200	0.004
Diploma	0.194	0.791	0.013	0.807	-0.432	0.577	-0.039	0.454	1.158	0.845	0.070	0.171
Higher education	-0.417	1.564	-0.013	0.790	1.031	1.139	0.043	0.366	3.531	1.670	0.099	0.035
Critical	0.343	0.690	0.025	0.619	-0.053	0.502	-0.005	0.916	0.242	0.736	0.016	0.742
Surgical	0.239	0.981	0.012	0.807	0.371	0.715	0.026	0.604	-1.372	1.047	-0.064	0.191
Hospital B	0.829	0.835	0.050	0.321	-0.352	0.608	-0.029	0.563	0.858	0.891	0.047	0.336
Hospital C	1.044	0.741	0.071	0.159	-0.975	0.540	-0.090	0.072	-0.648	0.791	-0.040	0.413

Note. Bachelor is reference for diploma and high education variables; medical department is reference for surgical and critical unit variables; Hospital A is reference for hospital B and C variables.

*F [10, 463] = 0.540, $p = .862$, $R^2 = .012$.

**F [10, 463] = 1.320, $p = .217$, $R^2 = .028$.

***F [10, 463] = 2.727, $p = .003$, $R^2 = .057$.

be applicable to private institutions. Further, we conducted no comparison between Saudi and non-Saudi nurses and not specifying non-Saudi nationalities, which is important given the potential for differences in ProQOL between these groups. Therefore, nationalities should be identified in future research and how this factor may affect compassion satisfaction, burnout, and secondary traumatic stress. Despite these limitations, this study adds to our understanding of factors that impact nurses' ProQOL and shows how these factors contribute to a successful nursing workplace.

Implications for Practice

Despite the moderate levels of compassion satisfaction, burnout, and secondary traumatic stress, nurse managers may benefit from providing support for nurses to help them cope with burnout and secondary traumatic stress. They should also provide effective interventions to improve nurses' satisfaction levels. Training programs, including programs for stress management and peer social support, are also necessary to reduce burnout and secondary traumatic stress levels. Further, health institutions may provide continuous education targeting younger nurses to increase their competence levels and their awareness of the effects of burnout and secondary traumatic stress on ProQOL. Nurse managers should also evaluate current international standards of burnout to help increase workflow efficiency and teamwork, as burnout is primarily linked to workplaces.

Conclusions

This study aimed to evaluate the important factors of ProQOL among nurses working at public hospitals in Saudi Arabia. Levels of compassion satisfaction, burnout,

and secondary traumatic stress among nurses were all slightly moderate. Compassion satisfaction was also associated with both burnout and secondary traumatic stress. Similar association was found between burnout and secondary traumatic stress. Thus, more research is needed on other variables that may influence nurses' performance.

Acknowledgements

The authors are thankful to the Deanship of Scientific Research, College of Nursing Research Center at King Saud University for funding this research.


Declaration of Conflicting Interests


The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was funded by the Deanship of Scientific Research through the Research Center at the College of Nursing, King Saud University.

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References

- Alamri, M., & Almazan, J. (2018). Barriers of physical assessment skills among nursing students in arab Peninsula. *International Journal of Health Sciences*, 12(3), 1–9.
- Alharbi, J., Jackson, D., & Usher, K. (2020a). Compassion fatigue in critical care nurses and its impact on nurse-sensitive indicators in Saudi Arabian hospitals. *Australian Critical Care*, 33(6), 553–559. <https://doi.org/10.1016/j.aucc.2020.02.002>

- Alharbi, J., Jackson, D., & Usher, K. (2020b). Personal characteristics, coping strategies, and resilience impact on compassion fatigue in critical care nurses: A cross-sectional study. *Nursing & Health Sciences*, 22(1), 20–27. <https://doi.org/10.1111/nhs.12650>
- Alluhidan, M., Tashkandi, N., Alblowi, F., Omer, T., Alghaith, T., Alghodaier, H., Alazemi, N., Tulenko, K., Herbst, C. H., Hamza, M. M., & Alghamdi, M. G. (2020). Challenges and policy opportunities in nursing in Saudi Arabia. *Human Resources for Health*, 18(1), 98. <https://doi.org/10.1186/s12960-020-00535-2>
- Almazan, J. U., Albougami, A. S., & Alamri, M. S. (2019). Exploring nurses' work-related stress in an acute care hospital in KSA. *Journal of Taibah University Medical Sciences*, 14(4), 376–382. <https://doi.org/10.1016/j.jtumed.2019.04.006>
- Asefzadeh, S., Kalhor, R., & Tir, M. (2017). Patient safety culture and job stress among nurses in Mazandaran, Iran. *Electronic Physician*, 9(12), 6010–6016. <https://doi.org/10.19082/6010>
- Bock, C., Heitland, I., Zimmermann, T., Winter, L., & Kahl, K. G. (2020). Secondary traumatic stress, mental state, and work ability in nurses—results of a psychological risk assessment at a university hospital. *Frontiers in Psychiatry*, 11, 298. <https://doi.org/10.3389/fpsy.2020.00298>
- Borges, E. M. das N., Fonseca, C. I. N. da S., Baptista, P. C. P., Queirós, C. M. L., Baldonado-Mosteiro, M., & Mosteiro-Diaz, M. P. (2019). Compassion fatigue among nurses working on an adult emergency and urgent care unit. *Revista Latino-Americana de Enfermagem*, 27, 1–6. <https://doi.org/10.1590/1518-8345.2973.3175>
- Cruz, J. P., Alquwez, N., Mesde, J. H., Almoghairi, A. M. A., Altukhays, A. I., & Colet, P. C. (2020). Spiritual climate in hospitals influences nurses' professional quality of life. *Journal of Nursing Management*, 28(7), 1589–1597. <https://doi.org/10.1111/jonm.13113>
- De-Oliveira, S. M., de Alcantara Sousa, L. V., Vieira Gadelha, M., & do Nascimento, V. B. (2019). Prevention actions of burnout syndrome in nurses: an integrating literature review. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*, 15, 64–73. <https://doi.org/10.2174/1745017901915010064>
- Deriba, B. K., Sinke, S. O., Ereso, B. M., & Badacho, A. S. (2017). Health professionals' job satisfaction and associated factors at public health centers in West Ethiopia. *Human Resources for Health*, 15(1), 36. <https://doi.org/10.1186/s12960-017-0206-3>
- Ghorji, M., Keshavarz, Z., Ebadi, A., & Nasiri, M. (2018). Persian Translation and psychometric properties of professional quality of life scale (ProQOL) for health care providers. *Journal of Mazandaran University of Medical Sciences*, 28(163), 93–106
- Hunsaker, S., Chen, H.-C., Maughan, D., & Heaston, S. (2015). Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *Journal of Nursing Scholarship*, 47(2), 186–194. <https://doi.org/10.1111/jnu.12122>
- Lee, M. S., Shin, S., & Hong, E. (2021). Factors affecting secondary traumatic stress of nurses caring for COVID-19 patients in South Korea. *International Journal of Environmental Research and Public Health*, 18(13), 6843. <https://doi.org/10.3390/ijerph18136843>
- Missouridou, E., Pavlou, V., Kasidi, K., Apostolara, P., Parissopoulos, S., Mangoulia, P., & Fradelos, E. (2020). Translation and cultural adaptation of the professional quality of life scale (ProQOL V) for Greece. *Materia Socio-medica*, 32(3), 187–190. <https://doi.org/10.5455/msm.2020.32.187-190>
- Ogińska-Bulik, N., Gurowiec, P. J., Michalska, P., & Kedra, E. (2021). Prevalence and predictors of secondary traumatic stress symptoms in health care professionals working with trauma victims: A cross-sectional study. *PloS one*, 16(2), e0247596. <https://doi.org/10.1371/journal.pone.0247596>
- Olowofela, A., & Isah, A. O. (2017). Antihypertensive medicines prescriptions before and after the Nigeria Hypertension Society guidelines and prescriber's awareness of the guideline. *Nigerian Medical Journal: Journal of the Nigeria Medical Association*, 58(3), 107–113. https://doi.org/10.4103/nmj.NMJ_131_16
- Osei-Yeboah, J., Owusu-Dabo, E., Owiredo, WKBA., Lokpo, S. Y., Agode, F. D., & Johnson, B. B. (2021) Community burden of hypertension and treatment patterns: An in-depth age predictor analysis: (the rural community risk of non-communicable disease study - nyive phase I). *PLoS ONE* 16(8): e0252284. <https://doi.org/10.1371/journal.pone.0252284>
- Patel, R. S., Bachu, R., Adikey, A., Malik, M., & Shah, M. (2018). Factors related to physician burnout and its consequences: A review. *Behavioral Sciences (Basel, Switzerland)*, 8(11), 98. <https://doi.org/10.3390/bs8110098>
- Perry, B. (2014). *The cost of caring: secondary traumatic stress and the impact of working with high-risk children and families*. The ChildTrauma Academy.
- Sacco, T. L., & Copel, L. C. (2018). Compassion satisfaction: A concept analysis in nursing. *Nursing Forum*, 53(1), 76–83. <https://doi.org/10.1111/nuf.12213>
- Salimi, S., Pakpour, V., Rahmani, A., Wilson, M., & Feizollahzadeh, H. (2020). Compassion satisfaction, burnout, and secondary traumatic stress among critical care nurses in Iran. *Journal of Transcultural Nursing*, 31(1), 59–66. <https://doi.org/10.1177/1043659619838876>
- Shingler-Nace, A., Gonzalez, J. Z., & Heuston, M. M. (2018). Conquering compassion fatigue: Lessons learned for the nurse manager. *Nursing Management*, 49(12), 38–45. <https://doi.org/10.1097/01.NUMA.0000547836.02707.ee>
- Stamm, B. H. (2002). Measuring compassion satisfaction as well as fatigue: Developmental history of the Compassion Satisfaction and Fatigue Test. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 107–119). Brunner-Routledge.
- Stamm, B. H. (2010). *The concise ProQOL manual*, 2nd Ed. ProQOL.org.
- Starc, J. (2018). Stress factors among nurses at the primary and secondary level of public sector health care: The case of Slovenia. *Open Access Macedonian Journal of Medical Sciences*, 6(2), 416–422. <https://doi.org/10.3889/oamjms.2018.100>
- The Ministry of Health. (2017). Annual statistical book. Retrieved from <https://www.moh.gov.sa/en/Ministry/Statistics/book/Documents/ANNUAL-STATISTICAL-BOOK-1438H.pdf>
- The Ministry of Health. (2021). Health sector transformation strategy. Retrieved from <https://www.moh.gov.sa/en/Ministry/vro/Documents/Healthcare-Transformation-Strategy.pdf>
- Ulmen, B. F., & Lloyd, C. A. (2021) Nurse educator compassion fatigue and intent to stay. *International Journal of Nursing and Healthcare Research* 4: 1247.
- Wang, J., Okoli, C. T. C., He, H., Feng, F., Li, J., Zhuang, L., & Lin, M. (2020). Factors associated with compassion satisfaction,

- burnout, and secondary traumatic stress among Chinese nurses in tertiary hospitals: A cross-sectional study. *International Journal of Nursing Studies*, *102*, 103472. <https://doi.org/10.1016/j.ijnurstu.2019.103472>
- Xie, W., Chen, L., Feng, F., Okoli, C. T. C., Tang, P., Zeng, L., Jin, M., Zhang, Y., & Wang, J. (2021). The prevalence of compassion satisfaction and compassion fatigue among nurses: A systematic review and meta-analysis. *International Journal of Nursing Studies*, *120*, 103973. <https://doi.org/10.1016/j.ijnurstu.2021.103973>
- Zhang, Y.-Y., Han, W.-L., Qin, W., Yin, H.-X., Zhang, C.-F., Kong, C., & Wang, Y.-L. (2018). Extent of compassion satisfaction, compassion fatigue and burnout in nursing: A meta-analysis. *Journal of Nursing Management*, *26*(7), 810–819. <https://doi.org/10.1111/jonm.12589>
- Zhang, Y., Zhang, C., Han, X.-R., Li, W., & Wang, Y. (2018). Determinants of compassion satisfaction, compassion fatigue and burnout in nursing. *Medicine*, *97*(26), e11086. <https://doi.org/10.1097/MD.00000000000011086>