



Rimsha Nisar¹, Huzaifa Nasreen², Muhammad Junaid Javaid³, Umar Hayat⁴, Zainab Kausar Khan⁵, Noor ul ain Ahmad⁶

Abstract

There is an increasing attention to identify the occupational stressors on clinical performance among nurses due to the shortfall of paramedical staff especially nurses to an alarming extent globally. We develop a research framework to examine the impact of occupational stress on nurses' clinical performance. A cross-sectional research design was used for data collection (n= 251). Data collection was accomplished by conducting a survey as a method. Data were analyzed through SPSS. The results indicate that occupational stress is negatively correlated with clinical performance among nurses. Work demand, work-family conflicts, occupational hazards, and occupational issues have a significant impact on nurses' clinical performance. Moreover, interpersonal relationships and workplace violence are found to be the insignificant impact on clinical performance. Demographic variables like marital status and computer skills have significant differences in occupational stress and clinical performance. Married nurses have a higher level of occupational stress and lower level clinical performance as compared to unmarried. Nurses with computer skills have low occupational stress and higher clinical performance than those without computer skills. The results of the study have theoretical as well as practical implications, needed to be addressed on a priority basis.

Keywords: Occupational stressors, clinical performance

1. Introduction

According to the International Labour Organization (2020), occupational stress is becoming a worldwide concern that affects employees in all sectors and nations. Nurses are reported to face high job demands, greater job stress, a higher incidence of exhaustion (Kupcewicz & Jozwik, 2019), lack of job satisfaction (Khamisa et al., 2019), workplace bullying, and suffer from mental health issues (Chin et al., 2019). Job stress, as well as exhaustion, are the collective impacts of stresses in the nursing profession, and they may have an impact on patient health as well as nurses' intentions to quit their positions (TUNA, 2020).

Globally, there is a nurse shortage, which is causing tremendous worry. According to the European Commission, there will be a shortfall of 590,000 nurses by the close of 2020. The nursing deficit in the United States will hit 340 000 nurses by the conclusion of 2020 (Nardi & Gyurko, 2013). Nearly 78 percent of nurses additionally said that their hospital administrators do not always appropriately handle their complaints (Atefi et al., 2015), exacerbating the problems caused by continuous staff shortages and pressures. The findings of the Health Resources Report for the Western Pacific Region on the current condition, deficiencies, and development outlook in the field of nursing in 2001–2002 revealed that the physician-to-nurse ratio in Hong Kong, Japan, Thailand, Germany, and the United Kingdom was higher than 1:4 and that the physician-to-nurse ratio in Finland, Norway, and Canada was higher than 1:6. Without a question, the insufficient availability of nurses has remained a challenge in China. The most well-known source of shortage of nurses appears to be nurses leaving the field. Numerous nurses abandon the nursing practice, which is viewed as a worldwide political problem (Xiaoyan, 2016).

Occupational stress can be described as a negative physical and psychological reaction which happens when the job demands are not on par with the worker's supplies, skills, and requirements" (Safarpour et al, 2018). The expense of job stress and related conditions is estimated to be over \$ 150 billion yearly by the World Health Organization (WHO) (Mokhtar et al., 2016). Furthermore, poor work performance and poor nursing quality of service have an impact on patient health. As per the American Institute of Stress Work, stress is to blame for 80% of work-related accidents and 40% of employee departure. Roughly 70% of absences are caused by work stress, as well as about 10% of the country's gross domestic product is lost as a result. It's believed that 93% of nurses work under stress (Sarafis et al., 2016). The term "performance word" (criterion) refers to a way of assessing competence. Task performance refers to the components of a work that a certain person is responsible for. The volume of work done, the standard of work done, the speed with which tasks are completed, the precision with which tasks are completed, and the diversity of jobs done or executed by the employees are all examples of job activities (Tufail et al 2017). The validity of the performance evaluation is largely determined by the competencies picked. Nurse performance evaluation is critical for ensuring high-quality clinical care and achieving targeted objectives. Performance, which includes both care level and efficiency.

Edwards et al. (2008) define competence as the capacity to complete a task with desired results. Professional standards have always included competency as a crucial aspect. It is the application of information and abilities practically. Performance is associated with a defined capacity to execute something, as well as a technique of determining competency attainment. As a result, the efficiency of performance assessments is determined by the competencies specified (Halcomb et al., 2016). Since trained nurses are attached to their patients and can handle their demands, trained and capable nurses deliver high-quality clinical services and then improve patients. The fundamental issue is determining which criteria may be utilized to assess a nurse. For each skill, there are two to seven requirements (Flinkman et al., 2017).

According to figures from the Taiwanese National Union of Nurses Associations (TUNA, 2020), only around 60% of certified nurses in Taiwan are currently practicing. Singapore and Australia, on the other hand, have roughly 86.1 percent and 98.5 percent active

¹ City College University Campus Multan, Pakistan, rimshanisar241@gmail.com

² City College University Campus Multan, Pakistan, huzaiifakhan5806@gmail.com

³ City College University Campus Multan, Pakistan, rj430070@gmail.com

⁴ Ph.D Scholar, National College of Business Administration and Economics Sub Campus, Multan, Pakistan, umarhayatrehmani786@gmail.com

⁵ Department of Psychology City College University Campus Multan, Pakistan, zainabkaykhan@gmail.com

⁶ Corresponding Author, City College University Campus Multan, Pakistan, nullain428@mail.com

practitioners, respectively (Ministry of health, 2020; NMBA, 2020). According to TUNA, 57.28 percent of nurses want to change careers, with the top three reasons being "compensation and bonus," "hard workload," as well as "work-life conflict." 27.1 percent of nurses pondered leaving the profession in a survey of eleven European nations, and their impressions of the nursing practicing environment were a significant factor in turnover (Leineweber et al., 2016). Work expectations, "inadequate assistance from colleagues or caregivers," and "workplace aggression and harassment" (Liu et al., 2018) may all be plausible predictors of individual and client-related exhaustion. Burnout was found to be strongly linked to work-life problems (Chen et al., 2018). As a result, the link between "work-family tension" and burnout is well-known. Ergonomic risks are one of the possible health dangers among health care professionals, as per the World Health Organization (2019). Manually carrying patients or large things is a risk factor for musculoskeletal illnesses such as lower back discomfort, according to research done in Hong Kong and Japan.

Several researchers discovered a link between lower back discomfort and personal exhaustion. As a result, it appears that the "occupational dangers" element is linked to personal exhaustion. Nurses find it difficult to take sick days or absences for a personal reason; lacking replacements, other nurses must work harder or longer hours to adjust. As a result, nurses may feel bad about taking time off, and their unwillingness to do so might lead to stress or even death from work overload (Kozak et al., 2014). Burnout may be accurately predicted by the "difficulty requesting leave" element. Elements in the "helplessness" component have been proven to be linked to client-related fatigue. Nurses may experience more emotional exhaustion than other occupations due to the increased regularity with which they come into touch with the patients. Burnout is common among caregivers of dying patients (Wang et al., 2020), and the concomitant sense of powerlessness and incapacity to provide appropriate care to such people can lead to moral difficulties and fatigue (Brindley, 2017).

It is critical to identify and treat issues that might induce job stress in nurses. Examining job stress and its related causes is one of the major actions that hospitals should do to enhance work conditions and minimize nursing work-related stress (Karimi et al., 2018). Research on nursing job stressors has been performed. The job stress of Greek nurses was found to be low in literature (Chatzigianni et al., 2018). Nurses from rural parts of Australia experienced a high degree of strain and mental anguish, according to the findings of the research. Research in Ireland similarly reported that Irish nurses had a high degree of work stress. Because of the high incidence of professional load among nurses and the harmful implications of work stress (Luo et al., 2017), as well as a lack of understanding about work stress and its related aspects among nurses, this is an important element to explore.

2. Literature review

Nursing is often acknowledged as one of the most demanding occupations (Hersch et al., 2016). Work stress has a negative impact on nurses' psychological, physical health and on their productivity (Okita et al., 2017). It can also lead to low self-esteem, reduced performance, and discontent with one's employment (Sarafis et al., 2016). Job stress is a situation in which the mental and physical circumstances of an individual are altered as a result of job-related issues, causing the person to deviate from healthy behavior. Work stress has seven elements: role conflict, duty, physical environment, role inadequacy, role barrier, and role overload (Hoboubi et al., 2017). Because of the peculiar characteristics of the nursing field, there are a variety of stressors that can negatively impact both individuals and institutions. Workplace organization, financial means, and interaction are all stressors (Trifunovic et al., 2017). The elevated levels of work stress found in this research are a result of the Iranian health system's latest reform as well as the execution of the Health Sector Evolution Plan. The perceived inequity in compensation and tasks are recognized difficulties that this change does not adequately address. Increased responsibilities, salary caps, and personnel shortages have all been recognized as reasons that have lowered medical nurses' job satisfaction in the past (Salarvand et al., 2017).

The larger numbers of married female nurses fulfill the conventional role of wife and mother, which includes housekeeping and parenting obligations. The increased stress levels indicated by this group may be related to a mix of job and home pressures. Other researchers have found that female nurses are more stressed at work than male nurses in certain cases (Jaracz et al., 2017; Kwiatosz-Muc et al., 2018). Nurses with a lesser degree of education reported significantly greater stress ratings. Nurses with a lesser academic background have fewer opportunities since they have less influence over their job and are therefore less inclined to partake in decision-making. It is critical to provide continuing professional growth opportunities, which include skill use and growth, as well as decision-making possibilities, to recruit more nurses and maintain employees (Gao et al., 2017). Long shifts, overtime work, staff shortages, inadequate compensation, prejudice at work, uncondusive administration, lack of communication, and regulations were all highlighted as key contributors to work stress. Other Iranian studies (Parizad et al., 2018) have raised similar issues, with research revealing that the majority of nurses experience workplace stress as a result of excessive workloads and personnel. According to one study, 75% of participants reported high workloads for nurses (Atefi et al., 2015) while others cited insufficient clinical personnel, which is a recurring employment issue.

The researchers discovered a link between work satisfaction and unfinished nursing chores. Non-nursing responsibilities may also drive nursing services out of a timeline, and ignored nursing care has been proven to be a powerful determinant of the desire to quit (Bekker et al., 2015). Another source of nursing stress might be a dispute with patients and their relatives. Nevertheless, there were no substantial links between this item and job discontent or desire to quit. When "work-family tension" grew, job satisfaction declined, and the desire to quit grew, according to a study of physicians (Hinz, 2019). Furthermore, when attending to extremely contagious patients, nurses were upset with the lack of safe clothing (Chen et al., 2018). The access and utilization of work-family health strategies were shown to be positively associated with job satisfaction and desire to continue in a meta-analysis. In other words, the "struggle taking leave" component may be a reliable predictor of fatigue, job unhappiness, as well as the desire to quit. Nurses' lunch and break intervals have long been seen to be a determinant in job contentment and willingness to remain for ages (Wendsche et al., 2017).

The number of times nurses delayed their urine or reduced their water intake was observed. As a result, the items classified as “unmet fundamental physical demands” are likely to be frequent in Taiwan and China. Despite the reality that relatives of hospitalized patients are not instinctively perceived as having the same collaborative ties as nurses, relatives have historically made pledges to care for hospitalized patients due to the general Chinese ideal of familism (Xu et al., 2016). Since hospitals cut nursing staff to save money, a percentage of the care is provided by relatives or private caregivers. As a result, client-related fatigue is predicted by “feeling overwhelmed because primary caretakers do not perform their jobs effectively.” Fatigue, which has long-term repercussions on the person and has an influence on job performances and environment, is one of the negative outcomes of work stress (Hayes et al., 2015). Other effects of stress comprise, but may not be confined to, a desire to quit the job, a decreased life quality, lack of job satisfaction (Cheng et al., 2015), and poor job productivity (Cheng et al., 2015). Additionally, stress might impair a person's attention, attentiveness, and judgment abilities (Gao et al., 2017). Work stress in the nursing field can have a detrimental influence on patients and families. Work stress can lead to poor medical care for patients, lowering the quality of healthcare and affecting treatment results (Adriaenssens et al., 2015).

Numerous factors are correlated to work stress in the nursing profession (Sarafis et al., 2016). Nursing is a highly difficult profession due to long shift length, difficult working conditions, and irregular hours. High responsibilities, the conflict between nurses and other medical practitioners, insufficient training, a loss of social and workplace assistance, a lack of supportive comments, understaffing, rates of pay, and awareness to illness and death have all been identified as sources of work stress for nursing staff (Mark & Smith, 2012). The Iranian healthcare sector has consistently had a shortage of nurses to satisfy the country's needs. Workplace stress and fatigue are expected to affect nurse enrollment and turnover as a result of insufficient personnel and job discontent (Tahghighi et al., 2017). In Jordan, research was conducted to determine the relationship between work stress and nursing productivity at King Abdullah Hospital in Irbid, Jordan, as a result of family considerations, financial environment, peer competitiveness, job difficulties, and organizational climate. The findings revealed that the most significant source of stress is the organizational environment. As per the nurses, family considerations are not a stressor that affects their work performance, but other four factors including the organizational environment, economic reasons, job difficulties, and peer competitiveness do (Al-Khasawneh & Futa, 2017; Haneen Falah Salame & Mohammed AL Bashtawy, 2019).

Research in Greece looked at the link among nurse job stress, patient care behaviors, and nurse health-related life quality. The most prevalent stresses for nurses, as per the research, were a lack of understanding in facing death and mortality, inability to assist patients and families in emotional support, disagreement with supervisors, and ambiguity about management's treatment response. In addition, all components of the caring behaviors questionnaire had a negative connection with job stress. Several stress variables are independently related for each CBI component, such as disagreement with coworkers, which is connected with mental wellbeing and is an individual determinant for reinforcement of human influence. The stressor of prejudice is a determinant of life quality (physical health) (Sarafis et al., 2016). Mental and physical violence and aggression, exposure to mortality, a scarcity of employees, and a large group of patients, disease, and disagreement with nursing management are all prevalent stresses in the workplace environment of nurses, according to previous studies (Starc, 2018).

2.1. Problem Statement

Nurses work as front-line medical professionals, providing intensive care and undertaking numerous responsibilities. Excessive workload, intensive care, and multiple responsibilities affect their performance. Occupational stresses are increasing with the paramount demand for professional care during this period of the pandemic. Several occupational stressors are causing, disruption in their clinical performance. The present study aims to investigate the impact of occupational stress on clinical performance among nurses. The researcher reviewed various studies but this combination of variables is still unexplored in Multan, Punjab, Pakistan. Therefore, the researcher wants to explore the impact of occupational stress on clinical performance among nurses

2.2. Objectives of the Study

- To explore the relationship between occupational stress and clinical performance among nurses.
- To investigate the impact of occupational stressors on clinical performance among nurses.
- To know the difference in demographic variables (marital status and computer skill) in terms of occupational stressors and clinical performance among nurses.

2.3. Hypotheses of the Study

- There would be a negative relationship between occupational stressors and clinical performance among nurses.
- There would be a significant impact of occupational stressors on clinical performance among nurses.
- There would be significant differences in occupational stressors and clinical performances with respect to demographic variables (marital status and computer skills) among nurses.

3. Materials and Methods

3.1. Study Design

The present study was carried by correlational study design to investigate the impact of occupational stress and clinical performance among nurses. A survey will be used as a method of data collection.

3.2. Participants and Ethical Consideration

The population of the study was employed nurses in Nishter hospital, Combined Military (C.M.H), Children Complex hospital, and Cardiology hospital from Multan, Pakistan. Informed consent was obtained before conducting the study. Further, none of the ethical issues occurred during the study.

3.3. Data Collection

A convenient sampling technique was used to approach the sample. Nurses were approached from different wards and self-administered questionnaires were distributed then handed back by the researcher after completion.

3.4. Instruments

Two instruments were used to measure study variables

3.5. Nurses' Occupational Stressors Scale (NOSS)

It is developed by Yi-Chuan Chen and colleagues in 2019. This is a 43-items scale, on a five-point Likert scale. Two items were excluded. Responses were with reliability range from 0.71 -0.83. The internal consistency range is from 0.35-0.77.

3.6. Clinical Performance Scale

It is developed by Emin Kahaya and Nurten Orall in 2017. It consists of 38 items on a five-point Likert scale. Reliability of this scale range from 0.72 to 0.87. It is used to assess nurses' performance in clinical settings.

3.7. Data Analysis

Data was entered in SPSS for analysis. Descriptive and inferential statistics were used to analyze the data. Following statistical tests will be employed to analyze the data; Pearson Correlation Coefficient, Multiple Regressions, and t-test.

4. Results

Table 1: Correlation between Occupational Stress and Clinical Performance among Nurses

Variables	Mean	Std. Deviation	1	2
1 Occupational Stress	140.7934	29.26	1	-.772**
2 Clinical Performance	108.848	34.02		1

Table 2: Multiple Regression Analysis of Occupational Stress on Clinical Performance among Nurses

Predictor	B	Std. Error	Beta	T	p-value
(Constant)	239.720	6.475		37.024	.000
Work Demand	-3.090	.482	-.412	-6.413	.000
Work-family Conflict	2.450	.563	.351	4.351	.000
Workplace Violence	-.564	.712	-.054	-.792	.429
Organizational Issues	-2.812	.510	-.358	-5.516	.000
Occupational Hazards	-3.682	.605	-.470	-6.086	.000
Interpersonal relationship	.042	.520	.005	.082	.935

Table 3: Mean, Standard deviation, t-value and scores of Occupational Stress and Clinical Performance with respect to marital status among Nurses

Variables	Marital status	N	M	Std. Deviation	df	t-test	p-value
Occupational Stress	Married	153	151.52	25.71	249	8.156	.000
	Unmarried	98	124.04	26.55			
Clinical Performance	Married	153	91.29	23.93	249	-13.36	.000
	Unmarried	98	136.26	28.98			

Table 4: Mean, Standard deviation, t-value and scores of Occupational Stress and Clinical Performance with respect to computer skills among Nurses

Variables	Computer Skill	N	M	Std. Deviation	df	t-test	p-value
Occupational Stress	Yes	139	128.31	28.28	249	-8.549	.000
	No	112	156.29	22.29			
Clinical Performance	Yes	139	116.69	35.67	249	4.205	.000
	No	112	99.11	29.19			

5. Discussion

Occupational stress is becoming a more widespread problem that affects workers in many industries and nations. Nurses are known for having high workloads, high occupational stress, high burnout rates, low job satisfaction, workplace bullying, and mental health issues. Job stress and burnout result from the cumulative effects of occupational stressors in the nursing profession consequently influence their clinical performance. There was a political problem faced globally is nurses abounding the nurses' practice (Xiaoyan, 2016).

This study aimed to identify the impact of occupational stress concerning clinical performances among nurses. Results reveal that perceived occupational stress is negatively correlated with nurses' clinical performance. It means with the increase of occupational stress the clinical performance among nurses will decrease. The level of occupational stress consequence nurses' clinical performance and makes it difficult for them to work effectively and efficiently (Luo et al., 2017). Occupational stress was categorized as work demand, work-family conflict, workplace violence and bullying, organizational issues, organizational hazards, and interpersonal relations among coworkers. These stressors show a significant impact on clinical performance among nurses except interpersonal relationships which was insignificant in this study (Kupcewicz & Jozwik, 2019). Marital status has a significant difference in perception of occupational stress and clinical performance among nurses. It is stated that occupational stress is higher among married nurses. Unmarried nurses show a higher mean on the performance scale, indicating better performance as compared to married nurses (Jaracz et al., 2017; Kwiatosz-Muc et al., 2018). Perceived occupational stress was found to have a low effect on computer skilled nurses as compared to non-computer skilled nurses. Similarly, nurses with computer skills reported having better performance as compared to non-skilled nurses. Computer skills are very important nowadays and knowing computer skills make work easier and faster that might be the reason the performance is higher among computer skilled nurses and it will automatically affect their perception of occupational stress.

6. Conclusion, Implication, Limitation, and Future Scope

We investigate the impact of occupational stress on clinical performance among nurses. We conclude work demand, work-family conflicts, workplace violence, organizational issues, occupational hazards, and interpersonal relationship as the indicators of occupational stress. Three hypotheses were formulated for this presenting study. The study outcomes show a significant negative correlation between occupational stress and clinical performance among nurses (hypothesis 1). Stressors like as work demand, work-family conflicts, organizational issues, and occupational hazards were found to have a massive impact on clinical performance among nurses, while interpersonal relationship and workplace violence remains insignificant (hypotheses 2). Married nurses were found to have greater occupational stress and lower clinical performance as compared to unmarried ones. Nurses with computer skills were found to have a lower perception of occupational stress and better clinical performance than those without computer skills (hypotheses 3).

6.1. Contribution to the Theory

This research has some key contributions and implications. First of all, the results of the study contribute to emergent literature on the impact of occupational stress on clinical performance among nurses. We focus on multiple dimensions of occupational stress, as an overall contributor to clinical performance among nurses. Different stressors like as work demand, work-family conflicts, workplace violence, organizational issues, occupational hazards, and interpersonal relationship are considered as indicators of occupational stress. This research can guide researchers to examine occupational stress and clinical performance with different variables like fatigue, socioeconomic status, self-efficacy, availability of resources, and level of occupational expertise or using the same variables on different samples to examine the occurrence of similarities or differences among results. Moreover, new researchers are advised to employ different psychological theories, contemporary theoretical frameworks to understand the way occupational stress affects clinical performance, ways to minimize its negative effects, and helps to enhance clinical performance among nurses. Secondly, the practice of cross-sectional design, allows us to observe the impact of occupational stress on clinical performance on a single point (in a specific period/circumstances of time). A deeper and clear understanding of these variables required an intensive and longitudinal approach with diverse contexts. It is also recommended for future researchers to examine these relationships for other samples (paramedical or non-paramedical professionals) and asses that association exhibit similar outcomes to other cohort groups. Third, the outcomes of the study highlight the need to investigate other occupational stressors that have the potential to affect job performance among nurses. The result of the study has the potential to ascribe the way nurse's clinical performance is related to the multiple occupational stressors and needed to be addressed immediately. Forth the percentage of variance in demographic variables (marital status, computer skilled knowledge) was observed, other demographic variables such as age. The number of children, experience, and socio-economic status are required to be examined. Furthermore, we investigate the hypotheses associated with married and unmarried nurses, it is recommended to carry this variable as divorced or single parents especially among those having meaningful work employment.

6.2. Contribution and Implication for Practice

The results provide significant implications for policymakers, educators, service providers, and administrators. The first information is about the antecedents of occupational stressors. Several variables that have the potential to contribute to occupational stress were investigated and found to be a significant impact on clinical performance in a negative manner. These findings suggest significant identification of a few occupational stressors for nurses and other professionals and administrators should address these issues to lessen the occupational stress for professionals. Administrators should focus on the work demand, occupational issues, occupational hazards, and workplace violence on a priority basis, it can help to minimize occupational stress and help to enhance job performance among nurses and other professionals also. Meanwhile, occupational stressors contribute negatively to any occupation so professionals other than nurses must consider alleviating these stressors. It will help policymakers to take preventing measures against study variables on the bases of perception of nurses included in this study

6.3. Limitation

This study is limited as the sample was considered four main hospitals located in Multan, Pakistan (one city). Another limitation is to exclude male nurses, the sample for the study was comprising female nurses only, and the reason is the availability of female nurses. The third limitation is excluded questionnaires with any missing items, to maintain the accuracy of the study, there might be

some useful responses on excluded questionnaires, as the name of respondents were not mentioned to maintain confidentiality thus the same respondent was unapproachable. Fourth, the nurses who have left the profession or moved to lesser or higher stressful environments were not assessed or addressed. Similarly, healthy and unhealthy respondents were not differentiated. The biggest limitation is not to consider the psychological condition of respondents while filling out the questionnaires. Although the researcher tried her best to approach the respondents at a suitable time full control of this phenomenon is beyond the researcher's control.

References

- Al-Khasawneh, A. L., & Futa, S. M. (2013). The relationship between job stress and nurses performance in the Jordanian hospitals: A case study in King Abdullah the Founder Hospital. *Asian Journal of Business Management*, 5(2), 267-275.
- Atefi, N., Abdullah, K. L., Wong, L. P., & Mazlom, R. (2014). Factors influencing registered nurses' perception of their overall job satisfaction: a qualitative study. *International nursing review*, 61(3), 352-360.
- Bekker, M., Coetzee, S. K., Klopper, H. C., & Ellis, S. M. (2015). Non-nursing tasks, nursing tasks left undone and job satisfaction among professional nurses in South African hospitals. *Journal of nursing management*, 23(8), 1115-1125.
- Brindley, P. G. (2017). Psychological burnout and the intensive care practitioner: a practical and candid review for those who care. *Journal of the Intensive Care Society*, 18(4), 270-275.
- Chatzigianni, D., Tsounis, A., Markopoulos, N., & Sarafis, P. (2018). Occupational stress experienced by nurses working in a Greek Regional Hospital: A cross-sectional study. *Iranian journal of nursing and midwifery research*, 23(6), 450.
- Chen, L., Liu, J., Yang, H., Ma, H., Wang, H., Huang, Y., ... & Zhang, N. (2018). Work-family conflict and job burn-out among Chinese doctors: the mediating role of coping styles. *General psychiatry*, 31(1).
- Chen, Y. C., Guo, Y. L. L., Lin, L. C., Lee, Y. J., Hu, P. Y., Ho, J. J., & Shiao, J. S. C. (2020). Development of the nurses' occupational stressor scale. *International journal of environmental research and public health*, 17(2), 649.
- Cheng, C. Y., Liou, S. R., Tsai, H. M., & Chang, C. H. (2015). Job stress and job satisfaction among new graduate nurses during the first year of employment in Taiwan. *International Journal of Nursing Practice*, 21(4), 410-418.
- Chin, W. S., Chen, Y. C., Ho, J. J., Cheng, N. Y., Wu, H. C., & Shiao, J. S. (2019). Psychological work environment and suicidal ideation among nurses in Taiwan. *Journal of Nursing Scholarship*, 51(1), 106-113.
- Edwards, B. D., Bell, S. T., Arthur, Jr, W., & Decuir, A. D. (2008). Relationships between facets of job satisfaction and task and contextual performance. *Applied psychology*, 57(3), 441-465.
- Flinkman, M., Leino-Kilpi, H., Numminen, O., Jeon, Y., Kuokkanen, L., & Meretoja, R. (2017). Nurse Competence Scale: a systematic and psychometric review. *Journal of Advanced Nursing*, 73(5), 1035-1050.
- Gao, F., Newcombe, P., Tilse, C., Wilson, J., & Tuckett, A. (2017). Challenge-related stress and felt challenge: Predictors of turnover and psychological health in aged care nurses. *Collegian*, 24(4), 361-369.
- Giorgi, G., Mancuso, S., Fiz Perez, F., Castiello D'Antonio, A., Mucci, N., Cupelli, V., & Arcangeli, G. (2016). Bullying among nurses and its relationship with burnout and organizational climate. *International journal of nursing practice*, 22(2), 160-168.
- Haneen Falah Salame and Mohammed AL Bashtawy. "Managing Workplace Stress among Health Care Providers". *EC Psychology and Psychiatry* 2019; 8:792-794.
- Hayes, B., Douglas, C., & Bonner, A. (2015). Work environment, job satisfaction, stress and burnout among hemodialysis nurses. *Journal of nursing management*, 23(5), 588-598.
- Hegney, D. G., Rees, C. S., Osseiran-Moisson, R., Breen, L., Eley, R., Windsor, C., & Harvey, C. (2019). Perceptions of nursing workloads and contributing factors, and their impact on implicit care rationing: A Queensland, Australia study. *Journal of Nursing Management*, 27(2), 371-380.
- Hersch, R. K., Cook, R. F., Deitz, D. K., Kaplan, S., Hughes, D., Friesen, M. A., & Vezina, M. (2016). Reducing nurses' stress: A randomized controlled trial of a web-based stress management program for nurses. *Applied nursing research*, 32, 18-25.
- Hoboubi, N., Choobineh, A., Ghanavati, F. K., Keshavarzi, S., & Hosseini, A. A. (2017). The impact of job stress and job satisfaction on workforce productivity in an Iranian petrochemical industry. *Safety and health at work*, 8(1), 67-71.
- International Labour Organization. Occupational Stress and Stress Prevention in Specific Occupations. Online: [https://www.ilo.org/safework/areasofwork/workplace-health-promotion-and-well-being/WCMS_250122/lang--en/index.htm](https://www.ilo.org/safework/areasofwork/workplace-health-promotion-and-well-being/WCMS_250122/lang-en/index.htm) (accessed on 3 January 2020).
- Jaracz, M., Rosiak, I., Bertrand-Bucińska, A., Jaskulski, M., Nieżurawska, J., & Borkowska, A. (2017). Affective temperament, job stress and professional burnout in nurses and civil servants. *PLoS one*, 12(6), e0176698.
- Karimi, A., Adel-Mehraban, M., & Moeini, M. (2018). Occupational stressors in nurses and nursing adverse events. *Iranian Journal of Nursing and Midwifery Research*, 23(3), 230.
- Khamisa, N., Peltzer, K., Ilic, D., & Oldenburg, B. (2019). Work related stress, burnout, job satisfaction and general health of nurses: A follow-up study. *International journal of nursing practice*, 22(6), 538-545.
- Kozak, A., Schedlbauer, G., Peters, C., & Nienhaus, A. (2014). Self-reported musculoskeletal disorders of the distal upper extremities and the neck in German veterinarians: A cross-sectional study. *PLoS one*, 9(2), e89362.
- Kupcewicz, E., & Józwick, M. (2019). Positive orientation and strategies for coping with stress as predictors of professional burnout among Polish nurses. *International journal of environmental research and public health*, 16(21), 4264.

- Kwiatosz-Muc, M., Fijałkowska-Nestorowicz, A., Fijałkowska, M., Aftyka, A., & Kowalczyk, M. (2018). Stress prevalence and stressors among anesthesiology and intensive care unit workers: A multicenter survey study. *Australian critical care, 31*(6), 391-395.
- Labarrere, C. A., Woods, J. R., Hardin, J. W., Campana, G. L., Ortiz, M. A., Jaeger, B. R., ... & Wozniak, T. C. (2011). Early prediction of cardiac allograft vasculopathy and heart transplant failure. *American Journal of Transplantation, 11*(3), 528-535.
- Leineweber, C., Chungkham, H. S., Lindqvist, R., Westerlund, H., Runesdotter, S., Alenius, L. S., & Tishelman, C. (2016). Nurses' practice environment and satisfaction with schedule flexibility is related to intention to leave due to dissatisfaction: A multi-country, multilevel study. *International Journal of Nursing Studies, 58*, 47-58.
- Liu, W., Zhao, S., Shi, L., Zhang, Z., Liu, X., Li, L., ... & Ni, X. (2018). Workplace violence, job satisfaction, burnout, perceived organizational support and their effects on turnover intention among Chinese nurses in tertiary hospitals: a cross-sectional study. *BMJ open, 8*(6), e019525.
- Luo, H., Yang, H., Xu, X., Yun, L., Chen, R., Chen, Y., ... & Tang, H. (2016). Relationship between occupational stress and job burnout among rural-to-urban migrant workers in Dongguan, China: a cross-sectional study. *BMJ open, 6*(8), e012597.
- Mark, G., & Smith, A. P. (2012). Occupational stress, job characteristics, coping, and the mental health of nurses. *British journal of health psychology, 17*(3), 505-521.
- Mokhtar, K., El Shikieri, A., & Rayan, A. (2016). The relationship between occupational stressors and performance amongst nurses working in pediatric and intensive care units. *Am J Nurs Res, 4*(2), 34-40.
- Nardi, D. A., & Gyurko, C. C. (2013). The global nursing faculty shortage: Status and solutions for change. *Journal of Nursing Scholarship, 45*(3), 317-326.
- Okita, S., Daitoku, S., Abe, M., Arimura, E., Setoyama, H., Koriyama, C., ... & Horiuchi, M. (2017). Potential predictors of susceptibility to occupational stress in Japanese novice nurses-a pilot study. *Environmental health and preventive medicine, 22*(1), 1-11.
- Parizad, N., Hassankhani, H., Rahmani, A., Mohammadi, E., Lopez, V., & Cleary, M. (2018). Nurses' experiences of unprofessional behaviors in the emergency department: A qualitative study. *Nursing & health sciences, 20*(1), 54-59.
- Ruotsalainen, H., Kyngäs, H., Tammelin, T., & Kääriäinen, M. (2015). Systematic review of physical activity and exercise interventions on body mass indices, subsequent physical activity and psychological symptoms in overweight and obese adolescents. *Journal of advanced nursing, 71*(11), 2461-2477.
- Safarpour, H., Sabzevari, S., & Delpisheh, A. (2018). A Study on the Occupational Stress, Job Satisfaction and Job Performance among Hospital Nurses in Ilam, Iran. *Journal of Clinical & Diagnostic Research, 12*(6).
- Salarvand, S., Azizimalekabadi, M., Jebeli, A. A., & Nazer, M. (2017). Challenges experienced by nurses in the implementation of a healthcare reform plan in Iran. *Electronic physician, 9*(4), 4131.
- Sarafis, P., Rousaki, E., Tsonis, A., Malliarou, M., Lahana, L., Bamidis, P., ... & Papastavrou, E. (2016). The impact of occupational stress on nurses' caring behaviors and their health-related quality of life. *BMC nursing, 15*(1), 1-9.
- Starc, J. (2018). Stress factors among nurses at the primary and secondary level of public sector health care: the case of Slovenia. *Open Access Maced J Med Sci [Internet]. 2018 Feb 15 [cited 2018 Sept 28]; 6* (2): 416-22.
- Tahghighi, M., Rees, C. S., Brown, J. A., Breen, L. J., & Hegney, D. (2017). What is the impact of shift work on the psychological functioning and resilience of nurses? An integrative review. *Journal of Advanced Nursing, 73*(9), 2065-2083.
- Trifunovic, N., Jatic, Z., & Kulenovic, A. D. (2017). Identification of causes of the occupational stress for health providers at different levels of health care. *Medical Archives, 71*(3), 169.
- Tufail, M. S., Mahesar, H. A., & Pathan, S. K. (2017). Organizational justice, task and contextual performance: empirical analysis for front line managers. *Grassroots, 51*(1).
- Wang, J., Okoli, C. T., 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.
- Wendsche, J., Ghadiri, A., Bengsch, A., & Wegge, J. (2017). Antecedents and outcomes of nurses' rest break organization: A scoping review. *International Journal of Nursing Studies, 75*, 65-80.
- Xu, D., Chen, L., Wan, X., Zhang, Y., Liu, N., & Wang, K. (2016). Toileting behaviour and related health beliefs among Chinese female nurses. *International journal of clinical practice, 70*(5), 416-423.
- World Health Organization. Occupational Health: A Manual for Primary Health Care Workers. Available online: https://www.who.int/occupational_health/publications/emhealthcarework/en/ (accessed on 26 December 2019).
- Nursing and Midwifery Board of Australia. NMBA Quarterly Registration Data. Available online: <http://www.nursingmidwiferyboard.gov.au/News/Newsletters/September-2015.aspx#quarterlydata> (accessed on 3 January 2020).
- Ministry of Health, Singapore. Health Manpower. Available online: https://www.moh.gov.sg/content/moh_web/home/statistics/Health_Facts_Singapore/Health_Manpower.html (accessed on 3 January 2020).