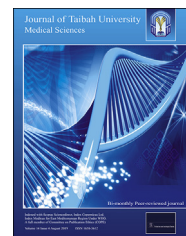Taibah University

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Original Article

Exploring nurses' work-related stress in an acute care hospital in KSA

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الملخص

أهداف البحث: هدفت هذه الدراسة إلى تقييم الإجهاد الناتج عن العمل لدى التمريض وتحديد العلاقة بين الإجهاد المرتبط بالعمل والبيانات الديموغرافية.

طرق البحث: استخدمت هذه الدراسة تصميما مستعرضا وصفيا. أجريت هذه الدراسة في مستشفى حكومي ثانوي (عدد المشاركين ١٧٨، سعة المستشفى ٢٢٥ سريرا) في منطقة الرياض، بالمملكة العربية السعودية. يقدم هذا المستشفى العديد من الخدمات الطبية والجراحية المهمة للحصول على رعاية وخدمات للمرضى ذات جودة عالية. وتمت مقابلة ما مجموعه ١٧٨ ممرضا وممرضة. ثم تم استبعاد ١٥ استبانة بسبب نقص البيانات (معدل استجابة ٩٢.٥٢٪).

النتائج: كان رأي المشاركين أن بيئة العمل مرهقة إلى حد ما، وارتبطت الجنسية بشكل كبير وكانت مؤشرا كبيرا لمستوى الإجهاد لدى المشاركين. كان لدى الممرضات من الجنسية الهندية مستويات إجهاد أعلى مقارنة مع الجنسيات الأخرى. وكانت ساعات العمل في الأسبوع مؤشرا كبيرا لمستويات الإجهاد لدى التمريض.

الاستنتاجات: سلطت هذه الدراسة الضوء على الإجهاد المرتبط بعمل التمريض وتحديد العلاقة بين الإجهاد المرتبط بالعمل والبيانات الديموغرافية. ارتبطت جنسية الممرضين وساعات العمل في الأسبوع مع مستوى الإجهاد لديهم. يمكن استخدام نتائج هذه الدراسة كدليل لوضع سياسات الموارد البشرية نحو تقليل التوتر لتعزيز الرعاية الصحية وتحسين أداء العمل.

الكلمات المفتاحية: مستشفى الرعاية الحرجة؛ التمريض؛ الممرضين؛ رعاية المرضى؛ الإجهاد

Abstract

Objectives: This study aimed to assess the perceived work-related-stress of staff nurses and determine the relationship between work-related stress and demographic profile.

Methods: This study used a descriptive cross-sectional design and was conducted in a secondary public hospital (staff nurses = 178, bed capacity = 225) in Riyadh, KSA. The hospital provides medical and surgical services that are important to achieve optimum quality patient care and services. In total, 178 staff nurses were interviewed, but 15 responses were excluded because of missing data (response rate: 92.52%).

Results: Nurses reported a moderately stressful work environment. Nationality was found to be a significant predictor of nurses' stress levels. Indian nurses had higher stress levels compared with nurses of other nationalities. Working hours per week was another significant predictor of stress.

Conclusion: This study highlighted perceived work-related stress of staff nurses and determined the relationship between work-related stress and demographic profile. Most nurses were moderately stressed. Working hours were associated directly with stress level. The study findings can serve as a guide for establishing human resources policies aiming at reducing nurses' stress and, thereby, promoting improved health care and task force work performance.

Keywords: Acute care hospital; Nurses; Nursing profession; Patient care; Stress

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Introduction

Job stress is increasing globally and causing serious concerns for both workers and organizations, as it can lead to illness, absenteeism, and reduced work performance.[1] Although it is a main concern for organizations because of its negative consequences, it may be a more pressing concern for health care professionals, especially nurses, who face extraordinary stress in clinical health settings.[2,3] Nurses are prone to work-related stress because they are at the frontline of a health care service. The nursing profession is perceived as laborious, complicated, and having high demands. These demands, along with many other work responsibilities, are the major causes of job stress among nurses.[4] Additionally, factors, such as work overtime, understaffing, and job satisfaction, could create high stress levels that may affect negatively the holistic well-being of workers.[4,5] Another study reported that about 35.1% (350) of nurses experience a high stress level in hospitals worldwide.[6]

A study in the United Kingdom showed that heavy workload, extrinsic effort, and absenteeism are related to high stress levels.[7] In KSA, most nurses in hospitals are migrant workers with diverse cultural backgrounds.[8] Nurses are exposed to various stress factors because they are responsible for the health and treatment of patients.[8] Cultural diversity may also affect nurses' stress levels.

Some of the health care services in KSA are acute health care, which includes promotive, preventive, curative, and rehabilitative care. This type of health care seeks to improve health in a time-sensitive manner.[9] Most nurses in the country originate from other countries with different cultures (Indians, Filipinos, Sudanese, and Egyptians),[10] and thus may be unacquainted with the sensitivity of Saudi culture.[10] As a result, they may feel disrespected and reprimanded, which leads to them experiencing work stress. Saquib studied the nurses working at two government hospitals in KSA and found that migrant nurses face heavy workload and uncooperative colleagues, which cause them to experience medical errors, anxiety, and stress.[11] Additionally, acute health care centers are strategically located across the country to deliver preventative and curative services.

However, compared with other health care systems, acute care is supported inadequately.[9] Hence, nurses working in acute health care settings may have high levels of job stress, which may cause sub-optimal patient care. However, previous empirical data identifying stress among nurses are limited by the methods available.[12] Moreover, previous studies that explain the stress phenomenon among staff nurses in clinical settings in KSA are only few.[13–15] Many studies have focused on nurses' stress, but only few have examined nurses working in acute health care settings. The latter is important to maintain a competent and safe health care practice in Saudi where population is increasing. The factors affecting nurses' stress in acute clinical care settings, especially in the Arab peninsula, have not been investigated thoroughly,[13] although questions about the effect of stress on nurses in clinical practice and on the delivery and quality of health care have been raised.[16,17] Therefore, determining the stress levels of nurses in an acute clinical care setting is essential to identify the sources of stress that may hinder quality patient care.

This study aimed to assess the perceived work related-stress of staff nurses and determine the relationship between work-related stress and demographic profile.

Materials and Methods

Study design

This study used a descriptive cross-sectional design.

Setting and sample characteristics

This study was conducted in a secondary public hospital (staff nurses = 178, bed capacity = 225) in Riyadh, KSA. This hospital offers several medical and surgical services that are important for achieving optimum quality patient care and services. Inclusion criteria were as follows: (a) male/female nurses, (b) employed as a nurse in KSA for at least six months, and (c) consented to participate.

Those excluded from the study were the head nurses, supervisors, and managers. The total enumeration (total population of nurses) of 178 staff nurses were approached and asked to answer the questionnaire. Fifteen surveys were excluded because of missing data. Therefore, 163 staff nurses were included in the final analysis, with a 92.52% response rate.

Questionnaire

A self-administered questionnaire was used in data gathering. The questionnaire had two sections, namely, demographic profile and stress.

Demographic profile

This section included information on age, gender, marital status, educational attainment, clinical area, total years of experience in the current hospital, nationality, monthly gross salary (SAR), working hours per week, and total years of experience as a nurse.

Stress

This section assessed the respondents' perceived stress levels using the perceived stress scale (PSS), which measures the perceived daily stress of an individual.[18] The PSS-14 included seven positively worded stress items and seven negatively worded counter-stress items. The items were evaluated on a 5-point Likert scale (from 0 = Never to 4 = Very often). Reverse coding of the items was impossible because it might confound the counter-stress factor.[19] A high mean score indicates a high stress level. Several studies have demonstrated the suitability, reliability, and validity of the scale.[20–22] The questionnaire was pilot tested and had a Cronbach's alpha of 0.85.

Data collection

Data were collected from June to July 2018. Prior to data collection, the researchers asked permission from the department heads of the hospital. Upon approval, the researchers disseminated the questionnaires conveniently to the staff nurses, with support from the head nurse of each ward. Completed questionnaires were given directly to head nurses. Unavailable respondents during the distribution of the questionnaires were followed up to allow extra time to complete the survey. The questionnaires were collected by an assigned person for easy retrieval. Afterward, data were analysed and interpreted.

Statistical method

SPSS 24 was used for data analysis. Descriptive statistics were used to determine respondents' demographic and work-related characteristics and their stress levels. Frequency, percentage, mean, and standard deviation were used to express results. ANOVA, t-tests, and Pearson's product moment correlation were employed to examine the relationship between demographic characteristics and perceived stress. A standard linear regression analysis was performed to assess the relationship between independent (demographic profile and work assignment) and dependent (stress level) variables. The level of statistical significance was set at $P < 0.05$.

Results

Table 1 reveals the respondents' demographic profile and work assignment. Most respondents were female (87.3%,

Table 1: Respondents' demographic profile (N = 164).

Variables	n	%
Gender		
Male	21	12.7
Female	143	87.3
Marital Status		
Single	69	42.07
Married	95	57.93
Education		
Bachelor's degree	146	89.024
Master's degree	18	10.976
Nationality		
Saudi	62	37.80
Filipino	35	21.34
Indian	64	39.02
Others (Sudanese, Egyptian, Jordanian)	3	1.83
Clinical Area		
Emergency Room	33	20.12
Outpatient Department	30	18.29
Medical and Surgical Department	32	19.51
Intensive Care Units	17	10.37
Operating Room	22	13.41
Obstetric Department	18	10.98
Artificial Kidney Unit	10	6.10
Nursing Administration	2	1.22
	Average	SD
Age	29.32	3.91
Working hours per week	44.14	4.03
Total years of experience as a nurse	7.29	6.0
Monthly gross salary (in SAR)	6,781	2,387.43

n = 143), married (57.93%, n = 95), and obtained a bachelor's degree (89.02%, n = 146).

Filipino nurses accounted for 21.34% of the total nurses in the hospital. The value was lower compared with other nationalities. Moreover, the percentage of nursing administration (1.22%, n = 2) was lower than that of other work assignments. The respondents also received a satisfactory average monthly salary amounting to SAR 6,781 (387.43).

Table 2 shows the perceived stress level of the respondents. Among all items, the questions 'In the last month, how often did you feel that things were going your way?' and 'In the last month, how often did you feel that you were unable to control the important things in your life?' had the highest and lowest mean scores of 2.39 (1.15) and 2.07 (1.07), respectively. Overall, the nurses had moderate stress levels.

Table 3 presents the association between work assignment and perceived stress (n = 164). Nationality and perceived

Table 2: Perceived stress level (N = 164).

Statement	Mean	SD
1. In the last month, how often were you upset because of something that happened unexpectedly?	2.10	1.22
2. In the last month, how often did you feel that you were unable to control the important things in your life?	2.07	1.07
3. In the last month, how often did you feel nervous and 'stressed'?	2.30	2.46
4. In the last month, how often did you deal successfully with irritating life hassles?	2.27	1.09
5. In the last month, how often did you feel that you were effectively coping with important changes that were occurring in your life?	2.28	1.11
6. In the last month, how often did you feel confident about your ability to handle your personal problems?	2.35	1.17
7. In the last month, how often did you feel that things were going your way?	2.39	1.15
8. In the last month, how often did you find that you could not cope with all the things that you had to do?	2.23	1.56
9. In the last month, how often were you able to control irritations in your life?	2.36	1.17
10. In the last month, how often did you feel that you were on top of things?	2.26	1.19
11. In the last month, how often did you get angry because of things that happened outside of your control?	2.28	1.21
12. In the last month, how often did you find yourself thinking about things that you must accomplish?	2.33	1.32
13. In the last month, how often were you able to control the way you spend your time?	2.41	1.31
14. In the last month, how often did you feel that difficulties were piling up so high you could no longer overcome them?	2.37	1.38

Table 3: Association between work assignment and perceived stress (N = 164).

Variables	Mean	SD	Statistical test	p
Gender				
Male	2.47	0.62	$t = 1.37$	0.171
Female	2.22	0.81		
Marital Status				
Single	2.25	0.82	$t = -0.69$	0.945
Married	2.26	0.77		
Educational attainment				
BSN	2.24	0.77	$t = 1.02$	0.306
Master	2.01	0.88		
Nationality[a]				
Saudi	2.0	0.89	$F = 2.98$	<0.035**
Filipino	2.14	0.77		
Indian	2.47	0.67		
Others (Sudanese, Egyptian)	2.41	0.47		
Working Unit				
Emergency Room	2.36	0.74	$F = 1.23$	0.285
Outpatient Department	1.93	1.16		
Medical and Surgical Department	2.10	0.84		
Intensive Care Units	2.66	0.84		
Operating Room	2.31	0.63		
Obstetric Department	2.34	0.78		
Dialysis Unit	1.86	0.49		
Nursing Administration	2.47	0.50		
Age			$r = 0.07$	0.405
Working hours per week			$r = -0.07$	0.555
Total years of experience as a nurse			$r = 0.14$	0.085
Monthly salary income (in SAR)			$r = -0.102$	0.248

Note. [a]Saudi versus Indian ($p < 0.05$**).

stress level were significantly correlated ($F = 2.98 < 0.035$). The perceived stress mean level of Indian nurses was 2.47 (0.67), which was higher than that of other nationalities.

The nurses' demographic profiles and work assignments were analysed using a multiple regression analysis to predict the stress levels. Table 4 reveals that nationality and the number of working hours per week are significant

predictors of stress level. The adjusted R^2 was 0.064, which indicate that about 6.4% of the variation in stress was attributable to demographic profile and work assignment. Moreover, a one unit increase in nationality score corresponded to a 0.41 increase in stress score ($P = 0.005$, 95%CI = 0.02−0.07). Similarly, a one unit increase in working hours per week score corresponded to a 0.42 increase in stress score ($P < 0.005$, 95%CI = 0.015−0.049).

Discussion

This study assessed the perceived work-related stress of staff nurses and determined the relationship between work-related stress and demographic profile. Our findings highlighted the perceived stress of nurses in clinical settings. Three main findings are emphasized in this study.

First, nurses reported a moderately stressful work environment. This finding was consistent with the findings of previous studies in Korea[23] and Iran,[24] which revealed that moderate stress is common in staff nurses in clinical settings. This finding may be attributed to clinical settings being characterized as having many potential physical stressors. For example, night-shift duty nurses may possibly experience circadian rhythm disruptions, which affect their physical health. Nurses may experience challenging situations, such as caring for and communicating with critically ill persons. Encountering these situations (e.g., lifting and transferring patient, changing duty schedule, and longer work hours) may add to nurses' stress.[25] Najimi et al.'s analysis[24] noted that nurses may also experience increased risk of violent or aggressive patients. These issues and challenges imply an emotional challenge for nurses and impair their work performance. Similarly, a previous study found that most nurses working in KSA come from different countries with diverse cultures (Indians, Filipinos, Sudanese, and Egyptians).[10] The cultural differences may influence how individuals respond to different workplace environments. These unfamiliar environments may possibly increase their anxiety and stress, causing them to commit medical errors and which, in turn, exacerbates their work stress. Other studies have found opposite findings and showed that a moderate level of stress is an important motivating factor in working environments.[26] Hence, this research gap regarding stress

Table 4: Predictors of stress (N = 164).

Predictor variables	β	SE-*b*	Beta	t	p	95% CI Lower	95% CI Upper
Age	0.02	0.02	0.07	0.71	0.48	−0.25	4.44
Gender	−0.43	0.24	−0.16	−1.80	0.07	−0.03	0.06
Marital Status	−0.13	0.14	−0.09	−0.93	0.35	−0.90	0.04
Educational Attainment	0.18	0.10	0.16	1.78	0.08	−0.42	0.15
Clinical Area	0.00	0.03	−0.01	−0.15	0.88	−0.02	0.38
Total Years of Experience	0.00	0.01	0.03	0.31	0.76	−0.07	0.06
Nationality	0.36	0.11	0.41	3.33	0.005**	0.02	0.07
Monthly Gross Salary (in SAR)	0.00	0.00	0.18	1.35	0.18	0.15	0.57
Working Hours per Week	0.27	0.02	0.42	2.79	0.005*	0.015	0.049

Note. Intention to leave was the dependent variable. β is the unstandardized coefficients; SE-b is the standard error.
**Significant at $p < 0.05$ level, ***Significant at $p < 0.001$ level.
$R^2 = 0.0129$; Adjusted $R^2 = 0.064$.

level and its effects on the overall health and work performance of nurses warrants in-depth exploration. Improved understanding of nurses' stress level informs policies aimed at cultivating nursing administrator skills and strategies for alleviating stress associated with nursing work. Therefore, recognizing individual stress levels is important to provide appropriate interventions in maintaining quality patient care.

Second, results revealed that nationality was significantly associated with and was a significant predictor of nurses' stress level. Indian nurses had higher stress levels compared with nurses of other nationalities. Indian nurses are family-oriented.[27] Hence, they may experience homesickness because of the abrupt shifts in their environments. Almost everyone experiences homesickness, and intense homesickness can lead to reduced concentration and cause the nurses to return to their familiar environments.[27] Furthermore, non-Arab Asian countries experience cultural differences, language barriers, and management issues with other nationalities.[28] These factors may have negative effects on organizational productivity and may pose serious health and safety hazards in the workplace.[29] Therefore, nursing administration should conduct seminar-workshop regarding Arab culture and Arabic language, especially for migrant nurses. This finding may also support continuous orientation programs and socialization for new staff nurses to make them feel that they are part of the organization.[30]

Finally, working hours per week was a significant predictor of nurses' stress levels. The pressures of rendering overtime and long working hours create a work–personal life imbalance, which affects the health of employees.[30] These results are similar to those of studies conducted in Korea,[23] Iran,[31] Thailand,[16] and the United States[17] in that working more than 8 h a day is associated with stress, serious health problems, and reduced participation in healthy activities. A retrospective cohort survey among 1,926 individuals employed for at least 10 years showed that an average of 46-h work week is related to increased risk of heart disease compared with a 40- hour work week.[32] Nurses have a highly demanding job; the longer the individual works, the higher the risk of psychological stress. Thus, reducing the number of working hours could reduce stress levels. In contrast, reducing work hours does not equate to a low stress level and high productivity. Golden[19] later showed that reducing the number of working hours has negative implications to the organization because established work schedules must be followed. The labour hours for various skills are complicated and may differ from one clinical setting to another. Hence, the effects of labour hours on the overall health condition and performance of nurses is an interesting topic for future research.

Limitations should be acknowledged and considered when utilizing the findings of this study. First, the cross-sectional design used in this study does not classify causal relationships between demographic profile and perceived stress. Second, male nurses accounted for 12.7% ($n = 21$) of the total population, and convenient sampling, which limits the generalizability of the results, was used. Third, the study was conducted in an acute care setting, which is not representative of the country-wide situation of nurses. Fourth, data were gathered during the respondents' duty hours, which might have caused errors and inconsistencies because of the respondents' inability to recall information correctly. The methods only related comprehensive demographic profile and work assignment with perceived stress level, thereby limiting the ability to assess the association of other possible factors with stress level.

The investigators believed that the above limitations did not undermine the purpose of this study. Comprehensive demographic profile and work assignment data were collected by using a validated and reliable questionnaire. Demographic profile and work assignment were associated with nurses' stress levels. The respondents provided a remarkable response rate of 92.52%, which reduced social desirability bias. The findings of this study contribute to the limited literature about nurses' stress in acute care hospitals in Saudi Arab.

Conclusion

This study highlighted the perceived work-related stress of staff nurses and determined the relationship between work-related stress and demographic profile. Nurses were moderately stressed. Nurses' nationality and working hours per week were associated with their perceived stress level. Specifically, Indian nurses had higher stress level than nurses of other nationalities. Finally, the higher the working hours per week, the greater the stress level of nurses.

Recommendations

This study provides baseline information aimed at informing policies for the reduction of nurses' stress in clinical practice settings in Saudi Arab.

The findings of this study can be used as a guide for establishing human resources policies towards reducing stress to promote improved health and work performance. Hospital administration authorities must be aware that nationality and working hours are associated with nurses' stress. This approach enables the hospital administration to focus on primary stress issues and address such issues for improved work performance. For instance, stress management programs may be established to reduce stress, especially for nurses working more than 40 h a week. However, in-depth research is necessary to evaluate the effectiveness of stress management programs. Seminars related to cultural competence may also be conducted to provide migrant nurses with a sense of satisfaction and fulfilment. The appropriate management of nurses' working hours is vital in maintaining their physical and mental health to improve the quality of care they provide. These results provide valuable insights and guidance for reducing work-related stress in acute care settings.

Conflict of interest

The authors have no conflict of interest to declare.

Ethical approval

'All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards'.

Authors' contributions

Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work: JA; Data collection: JA, AA, MA; Data analysis: JA; Manuscript writing: JA, AA, MA; Drafting the work or revising it critically for important intellectual content: JA, AA, MA. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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