



Kerman University
of Medical Sciences

International Journal of
Health Policy and Management

doi: 10.15171/ijhpm.2013.30

Journal homepage: <http://ijhpm.com>



Original Article

Occupational Stress and Turnover Intention: Implications for Nursing Management

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ARTICLE INFO

Article History:

Received: 10 May 2013

Accepted: 15 July 2013

ePublished: 24 July 2013

Keywords:

Occupational Stress

Hospital

Nurses

Iran

ABSTRACT

Background: The main purpose of this study was to explore the status of occupational stress among hospital nurses in Isfahan, Iran. It also aimed to examine the relationship between nurses' occupational stress and their intention to leave the hospital.

Methods: The study employed a cross-sectional research design. A validated questionnaire was used to collect data from 296 nurses. Respondents were asked to rate the intensity of 30 common occupational stressors using a five-point scale.

Results: A third of hospital nurses rated their occupational stress high. The major sources of stress were inadequate pay, inequality at work, too much work, staff shortage, lack of promotion, job insecurity and lack of management support. More than 35% of nurses stated that they are considering leaving the hospital, if they could find another job opportunity. Occupational stress was positively associated with nurses' turnover intentions.

Conclusion: Hospital managers should develop and apply appropriate policies and strategies to reduce occupational stress and consequently nurses' turnover intention.

Background

Employees' turnover is the process which employees leave their organisations. Turnover can be voluntary (employees intend to leave the organisation) or involuntary (managers make employees redundant). Employees' voluntary turnover has adverse impacts on organisational effectiveness, efficiency and productivity (1,2).

Nurses' turnover rate is among the highest rates for professional groups (3). Nurses' voluntary turnover has adverse effects on healthcare organisations and patients. Nurses' voluntary turnover imposes direct (e.g., advertising, recruiting and training new staff) and indirect costs (e.g., low productivity of new staff and decreased morale of other staff) to healthcare organisations. According to Waldman and colleagues, the total cost for a newly recruited nurse averaged 15,825 US dollars and the cost of reduced productivity ranged from 5,245 US dollars to 16,102 US dollars (4). Nurses' turnover results in an inadequate nurse staffing, work overload and longer shifts and consequently is associated with lower nurses' job satisfaction (5). High turnover affects the morale of nurses and consequently their ability to meet patient needs and to provide quality care (6–8).

Less quality of work life, job satisfaction and organisational commitment, organisational culture, job stress, burnout, long shifts, and work-family conflict have been identified as variables that could force nurses to leave their workplace (9–16). In

addition, socio-demographic characteristics such as age (17), marital status (18), tenure (19), and education (20) may also influence nurses' turnover.

Occupational stress is a crucial factor influencing employees' job satisfaction and organisational commitment, which are key turnover predictors. Occupational stress occurs when there is an imbalance between the demands of the work place and a worker's ability to cope (21). Healthcare is an inherently stressful profession with long working hours, difficult working conditions, dealing with difficult patients and numerous occupational health and safety hazards (22). Hospital nurses play critical roles in providing healthcare services and the management of patient care in the hospitals.

Nursing is a high-risk and stressful profession. Nurses are often confronted with critical incidents or acute stressors. Being responsible for patient outcomes, complexity of disease treatment, and uncertainty concerning treatment of patients, propagation of diseases from patients, and dealing with death and dying people have been identified as sources of occupational stress among nurses (23–25). Burdensome tasks, excessive workload, insufficient time, staff shortage, excessive working hours, irregular shift work, conflict with other colleagues and high job demands were also reported as nurses' occupational stressors (26–28). Other stress sources include inadequate resources, insufficient salary, lack of control over work, too

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much responsibility and too little authority, poor social support, job insecurity, poor opportunities for advancement, and poor management styles (29–31). Socio-demographic predictors of occupational stress include gender (32), age (33), educational level (34), and tenure (18).

Occupational stressors may have harmful effects on an individual's physical (35–37) as well as mental health and well-being (22,38). On the organisational level, high levels of occupational stress have been linked to high staff absenteeism and low levels of productivity (39,40). Stress decreases attention, concentration, and decision-making and judgment skills (41). Occupational stress is also negatively related to quality of care due to loss of compassion for patients and increased incidences of mistakes and practice errors (42,43).

A strong inverse relationship was found between occupational stress and employees' job satisfaction (44,45). Occupational stress also may lead to increased burnout (46). In addition, some studies found an association between employees' occupational stress and their organisational commitment (47,48) and intentions to leave their workplaces (49,50).

A conceptual framework aiming to explain the impact of occupational stress on employees' outcome is expressed graphically at Figure 1. A variety of job-related, organisational, interpersonal, and working environment factors influence an individual's level of occupational stress. The relationship between occupational stress and employees' outcomes is moderated by individual and socio-cultural factors.

Methods

Purpose and objectives

The purpose of this paper is threefold: first, to determine the level of occupational stress of nursing personnel in Isfahan, Iran; second, to identify factors that influence nurses' occupational stress; and third, to examine the relationship between occupational stress and nurses' turnover intention.

Design

The study utilised cross-sectional, descriptive and correlational design and survey methodology.

Setting

The study was carried out at six hospitals, three Ministry of Health (MOH), one Social Security Organisation (SSO) and two private hospitals to represent the three dominant hospital care systems in Iran.

Population and sample

Two hundred and seventy five nurses were selected for this research after a pilot study by using the following formula ($N=964$, $d=0.05$, $z=1.96$ and $s=0.50$). Employees who had less than 6 months working experience were excluded from this study. A sample size of 316 nurses was selected assuming a response rate of 85%.

$$n = \frac{Nz^2s^2}{Nd^2 + z^2s^2}$$

Instrument

A literature review was conducted to identify the occupational stress questions (23,28,51). From each study, a list of questions was created. The organisational behaviour and management experts' opinions were used in completing this list. Finally, 30 questions were included in the occupational stress questionnaire. Respondents were asked to rate the intensity of 30 common occupational stressors using a five-point scale (very low, low, medium, high, very high). Turnover intention was measured using a single item: "To what extent do you want to leave this organisation, if you find another job opportunity?"

The occupational stress questionnaire had face and content validity since it was derived from an extensive and comprehensive

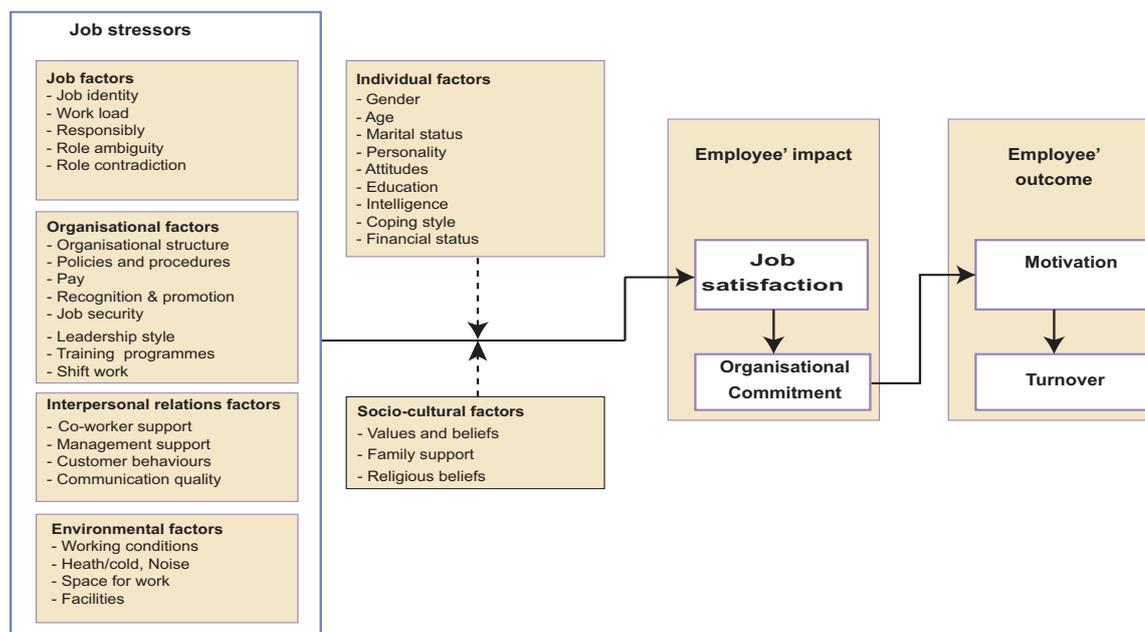


Figure 1. Hypothesized relationship between job stress and employee outcome

review of the literature, and evaluations by academics and practitioners. Confirmatory factor analysis (CFA) was used for testing construct validity. Based on factor analysis, the initial 30 occupational stressors were factored into five constructs. These included stress related to duty, role, work environment, organisational policies, and interpersonal relations. The results of the factor analysis indicate a high level of construct validity of the measure (Table 1). The job itself including duties, responsibilities, and workload can be a source of stress for nurses. Role stressors such as role conflict and role ambiguity also contribute to nurses' occupational stress. The working environment, organisational policies, and the relationships among employees themselves and employees and managers and customers can be stressful.

Cronbach's alpha was computed for each scale using the SPSS 11 (SPSS Inc., Chicago, IL, USA). The reliability coefficient was 0.93 for occupational stress questionnaire (Table 2).

Ethical consideration

The main ethical issues involved in this study were respondents' rights to self-determination, anonymity and confidentiality. For this reason, respondents were given full information on the nature of the study through a letter, which was distributed with the questionnaire. The questionnaire data were kept confidentially and respondents were assured of their right to withdraw at any time. The names of the respondents were not recorded and so all the data were rendered anonymous.

Data collection

Nurses are working in various hospital wards. Therefore, it was decided to use stratified random sampling to make sure nurses in each subpopulation are included in the study. Then, simple random sampling was applied within each stratum. Informed consent was obtained from all nurses following receipt of information on the purpose of the study, assurances of

anonymity and confidentiality. Data collection was undertaken in September 2008.

Data analysis

All data were analysed using the SPSS 11 (SPSS Inc., Chicago, IL, USA). In order to normalize the Likert scale on 1-5 scales for each domain of occupational stress questionnaire, the sum of raw scores of items in each domain was divided by the numbers of items in each domain and for overall Occupational stress, sum of raw scores of items were divided by 30. The possible justified scores were varied between 1 and 5. Scores of 2 or lower on the total scale indicate very low, scores between 2 and 2.75 indicate low, scores between 2.76 and 3.50 indicate moderate, scores between 3.51 and 4.25 indicate high and scores of 4.26 or higher indicate very high occupational stress.

The differences between groups were tested with the chi-square, in-dependent *t*-test, Mann-Whitney and Kruskal-Wallis tests. Then, the relationship between occupational stress and its five dimensions was investigated by calculating Pearson's correlation coefficients. Regression analysis was used to identify the most important predictor domains in occupational stress. The significance level was set at $P < 0.05$.

Results

A total of 296 nurses filled out the questionnaires. The characteristics of the sample are summarized in Table 3. Almost three fourth of the participants were females and married. The majority had bachelors degree (61.90%). Almost half of the nurses (48.80%) had incomes of less than 3,000,000 Rials (\$US300, poverty line in Iran in 2008). The average age was 34 years (SD=8.31) with the youngest 21 years and oldest 65 years. The majority of the respondents were aged 20-30 years, followed by 31-40 years. Nurses had worked an average of 10 years (SD=8.05) in their career with a minimum of 1 year and a maximum of 32 years.

Table 1. Item to scale correlation matrix (Pearson correlation)

Scales	Item numbers									
	1	2	3	4	5	6	7	8	9	10
Duty related stressors	0.65	0.67	0.59	0.54	0.59	0.57	0.79	0.71	0.77	-
Role related stressors	0.88	0.82	0.83	-	-	-	-	-	-	-
Working environment related stressors	0.86	0.75	0.86	-	-	-	-	-	-	-
Organisational policies related stressors	0.67	0.69	0.70	0.60	0.59	0.68	0.64	0.55	0.61	0.61
Interpersonal relations related stressors	0.80	0.78	0.65	0.72	0.73	-	-	-	-	-

Note: Items number in this Table is the same as the item number in the instrument

Table 2. Internal consistency analysis

Job stressors	Item Numbers	Number of items	Cronbach's alpha
Duty related stressors	1-9	9	0.83
Role related stressors	10-12	3	0.84
Working environment related stressors	13-15	3	0.75
Organisational policies related stressors	16-25	10	0.83
Interpersonal relations related stressors	26-30	5	0.78
Overall job stress	1-30	30	0.93

The mean score of nurses' occupational stress was 3.24 compared with the possible range from 1.18 to 4.83 (Table 4). Overall, 34.90 % of nurses reported their job was very or extremely stressful. The major sources of occupational stress were inadequate pay (3.92), unfairness and inequality at work (3.86), lack of job security (3.82), insufficient regular breaks at work (3.81), inadequate staff (3.78), excessive workload (3.72), lack of management support (3.65), lack of promotion prospects (3.64), and time pressure (3.63). The three lowest job stressors were role ambiguity (2.26), insufficient training (2.60) and role contradiction (2.62).

The Kruskal Wallis test revealed that the total occupational

Table 3. Percentage of participants and the mean score of their job stress

Demographic parameters	Percent of sample	Job stress	
		Mean	SD
Gender			
Male	27.40	3.23	0.65
Female	72.60	3.25	0.74
Marital status			
Single	23.30	3.17	0.67
Married	76.70	3.27	0.73
Education			
Under diploma	7.50	3.15	0.67
Diploma	9.20	3.01	0.63
Post diploma	18.30	3.38	0.77
Bachelor's degree	61.90	3.21	0.70
Master's degree	3.10	3.67	0.64
Age (years)			
20-30	48.20	3.33	0.70
31-40	30.60	3.08	0.78
41-50	18.30	3.29	0.64
>50	2.90	2.83	0.45
Tenure (years)			
1-5	37.00	3.32	0.72
6-10	25.60	3.21	0.86
11-15	14.30	3.17	0.67
16-20	9.20	3.34	0.67
21-25	6.60	3.15	0.70
26-30	7.00	2.97	0.43
>30	0.30	3.20	-
Type of employment			
Contract	58.50	3.22	0.78
Permanent	41.50	3.28	0.64
Received wages			
<3,000,000 RLS	48.80	3.26	0.74
>3,000,000 RLS	51.20	3.17	0.73

stress scores was differed among six hospitals ($\chi^2=22.195$, $df=5$, $P=0.00$). Nurses' occupational stress in private hospitals was less than public and semi public hospitals (Table 4). The differences between values of nurses occupational stress in these hospitals were statistically significant ($P<0.001$). Semi-public hospitals provide free healthcare services to social security insured patients. Consequently, the demand for services in these hospitals is very high. The findings also showed that all five dimensions of occupational stress are inter-related (Table 5). Therefore, it can be concluded that an increase in duty and working environment related stress can result in more interpersonal tensions.

A statistical significant association was seen between nurses' occupational stress and their area of work or speciality ($P<0.01$).

The mean score of nurses' occupational stress in the psychiatry ward (3.86), ICU (3.43), operation theatre (3.45), paediatrics (3.41), cardiology (3.35), internal medicine (3.34), surgery (3.30), accident and casualty department (3.27), obstetrics (3.26), orthopaedics (3.24), and CCU (3.21) were high. Nurses working in intensive care units ranked insufficient regular breaks, work shifts, too much work, and staff shortage as the main sources of distress. Nurses in medical, surgical care units and operation theatres ranked workload, time pressure, staff shortage and lack of management and co-workers' support more stressful.

As Table 6 shows, supervisors and head nurses reported more occupational stress than nurses. They were more dissatisfied with the salaries, benefits and workload. However, the differences between values were not statistically significant ($t=-0.57$ and $P=0.57$).

Nurses' occupational stress ratings were associated with several demographic variables. There was strong correlation between the occupational stress of employees and their age ($r=-0.14$ and $P=0.02$), work tenure ($r=-0.13$ and $P=0.03$), and place of work ($r=-0.133$ and $P=0.02$). There is a meaningful difference in stress among various ages. Older nurses with more years of experience had less occupational stress than their younger colleagues. Regarding marital status, although the average occupational stress among married employees was higher than the single ones according to Mann-Whitney test, there was no meaningful difference ($P=0.66$).

Calculations of Spearman's ratios revealed the strongest correlation between total occupational stress and occupational stressors related to organisational policies, duty-related, interpersonal relations, and working environment. As Table 5 shows this relationship was statistically significant in all of cases ($P<0.001$).

Correlation analysis revealed that occupational stressors such as bullying behaviour from co-workers (0.71), low decision latitude (0.70), inadequate equipment (0.70), conflicting demands (0.67), insufficient training (0.66), lack of job security (0.65), bullying behaviour from managers (0.63), role ambiguity (0.63), too much responsibility (0.61), management style (0.60), unfairness and inequality at work (0.60), job identity (0.59), lack of promotion prospects (0.57), work shifts (0.57), inappropriate working conditions (0.56), lack of management support (0.56), and role contradiction (0.54) had more effect on employees' occupational stress.

Multiple linear regression analysis was used to assess the impact of independent organisational, job-related and individual variables upon self-reported stress (dependent variable). Organisational policies explained the largest amount of the variance in nurses' occupational stress followed by duty-related, interpersonal relations and working environment stressors. Regards to organisational policies, job insecurity explained the largest amount of the variance, followed by leadership style of managers, insufficient training, staff shortage, and unusual controls. Regards to duty-related factors, low decision latitude explained the largest amount of the variance, followed by time pressure, job identity, lack of coordination between the job and the abilities and too much responsibility. Employees' characteristics explained a smaller amount of variation in occupational stress.

The mean score for nurses' turnover intention was 3.01 out of five. More than 35% of nurses stated that they are considering leaving the hospital, if they could find another job opportunity.

Table 4. The mean of employees' job stress in different hospitals (on a 5 scale)

Job stress dimensions	Public hospitals		Semi Public hospitals		Private hospitals		Overall	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Duty related stressors	3.18	0.78	3.48	0.68	3.13	0.73	3.21	0.76
Role related stressors	2.54	1.07	2.89	1.03	2.63	0.94	2.62	1.04
Working environment related stressors	3.34	1.10	3.52	0.71	2.64	0.98	3.21	1.07
Organisational policies related stressors	3.42	0.81	3.62	0.53	3.27	0.73	3.42	0.76
Interpersonal relations related stressors	3.30	0.95	3.71	0.89	3.20	0.83	3.34	0.93
Overall Job stress	3.23	0.76	3.52	0.55	3.09	0.67	3.24	0.72

Table 5. inter-correlations between occupational stress and turnover intention

Job stressors	1	2	3	4	5	6
1. Over all occupational stress	-					
2. Stress related to the duty	0.88**	-				
3. Stress related to the role	0.73**	0.57**	-			
4. Stress related to interpersonal relations	0.85**	0.66**	0.60**	-		
5. Stress related to working environment	0.74**	0.59**	0.46**	0.54**	-	
6. Stress related to organisational policies	0.92**	0.72**	0.58**	0.75**	0.63**	-
7. Intention to leave the organisation	0.22**	0.23**	0.05	0.18**	0.01	0.24**

**Correlation is significant at the 0.01 level (2-tailed)

Table 6. The mean of employees and supervisors' Job stress (on a 5 scale)

Job stress dimensions	Supervisors		Employees		P
	Mean	SD	Mean	SD	
Duty related stressors	3.33	0.70	3.20	0.77	0.40
Role related stressors	2.77	0.92	2.60	1.05	0.37
Working environment related stressors	2.79	1.25	3.26	1.04	0.02
Organisational policies related stressors	3.53	0.59	3.41	0.77	0.40
Interpersonal relations related stressors	3.51	0.76	3.32	0.95	0.29
Overall Job stress	3.32	0.64	3.24	0.73	0.57

Significant relationships were found between nurses' turnover intention and their age ($P=0.04$). No association was found between pay, type of employment and turnover intention. Occupational stress was positively associated with nurses' turnover intentions (Table 6). Stress related to organisational policies, the duty and interpersonal relations were more related to nurses' turnover intention.

Discussion

The current study provided empirical support for the assertion that occupational stress is linked with turnover intention. Turnover intention was at a medium level among Iranian nurses participated in the survey. An inverse relationship was found between nurses' age and their turnover intention. Similarly, McNeese-Smith and van Servellen conclude that younger nurses have less job satisfaction and organisational commitment and subsequently greater turnover (17). Nurses' turnover intention was associated with their experience of occupational stress.

The findings showed that Iranian nurses experienced moderate levels of job stress, mainly because of inadequate pay, inequality at work, job insecurity, staff shortage, excessive workload, and lack of management support. These findings are consistent with

other similar studies that found medium level of occupational stress among nurses in Iranian healthcare organisations because of increased workload, staff shortage and insufficient pay (29,52-55).

Nurses in psychiatric, ICU, operation theatre, paediatrics, cardiology, internal medicine, surgery and accident and casualty wards experienced more occupational stress and more likely to leave their positions than did nurses in other departments and wards. Similarly, Rahmani and colleagues reported high job stress in ICU nurses in Tabriz University hospitals, Iran (56).

Inadequate and unfair pay seem to be major sources of stress for Iranian nurses. Lack of benefit and reward is an increasing source of employees' frustration. Similarly, other studies found that pay and benefits were the major determinants of occupational stress (29,52,57). Nevertheless, inadequate pay was not associated with turnover intention among Iranian nurses.

The current study showed that lack of promotion opportunities was another significant predictor of occupational stress among study participants. Dissatisfaction with promotion opportunities has been shown to have a stronger impact than pay on nurses' turnover (19,58). Improved pay would only have limited success unless accompanied by improved opportunities. It is therefore,

recommended that managers provide equal promotion opportunities for employees.

Too much work to do and inadequate staff to cover duties were the most significant associated factors of stress for Iranian nurses. Several studies have highlighted work overloads and time pressure as significant contributors to work stress among healthcare professionals (37,59). An excessive workload increases job tension and decreases job satisfaction, which in turn, increases the likelihood of turnover (60,61). Inadequate staffing also inversely influence the quality of provided healthcare services and patient outcomes (60). Workload should be in line with nurses' capabilities and resources. Adequate staff should be provided to keep nurses' workload reasonable. Besides, using administrative staff could reduce the paperwork burden on nurses.

Inequality at work was also reported as an important occupational stressor among nurses in this study. Findings from the study showed that treating people unfairly could result in a series of negative or stress-related reactions. These findings are consistent with those findings of McCann *et al.*, and Wilkinson (62,63).

Job insecurity was found in this study a factor that influences occupational stress of nurses. Job insecurity threatened employees in the private sector more than the public sector. Since private hospitals are profit oriented, there is redundancy resulting from over staffing. This is in contradiction with the findings of Ogunjimi *et al.*, study (64).

Poor communication and lack of social support at work place were important predictors of occupational stress among Iranian hospital nurses. Similarly, Adib-Hajbaghery and colleagues found that poor relationships between nurses and other healthcare professionals is a major source of occupational stress among hospital nurses (29). French and colleagues (51) identified conflict with physicians, problems with peers and supervisors, and discrimination as stressors for nurses. Developing good personal relationship at work place is necessary for the prevention of job stress among hospital nurses. Education, training, and emphasizing teamwork help improve cooperation among nurses and clinical professionals.

The findings revealed that organisational policies had the strongest correlation with overall nurses' occupational stress. Organisational policies result in a change in the nature of work for many employees and eventually their lay off or relocation. Changes in management systems and structure, changes in senior management behaviour, changes in organisational variables such as benefit scales, employee involvement and participation in policy development, and work environment, and demonstrating value to staff could then be made in an effort to decrease nurses' occupational stress.

Nurses' occupational stress is also associated with the characteristics of the nursing job (53). Jobs should be designed in ways that provide meaning, autonomy, motivation and opportunities for employees to use their skills. Nurses' roles and responsibilities should be clearly defined. Nursing colleges in general and hospitals in particular should clarify nurses' roles and the demands associated to their roles. Necessary education and training should be provided for nurses to be able to do their duties effectively. They should be given opportunities to participate in decisions and actions affecting their jobs to resolve stress-producing problems. Workplace discrimination should be minimized and preferable eliminated. Work environment

and working procedures should be optimised. Nurses should be aware of duty and role related stressors. They should be equipped with knowledge and skills to deal with these occupational stressors.

In addition to applying organisational strategies to improve nurses' quality of working life, nurses should use personal strategies to enhance their self-controlling skills to cope with job stress. Mental health nurses could play an essential role in preventive stress management programs for hospital nurses (27).

Conclusion

The level of occupational stress among a group of Iranian nurses was measured using a questionnaire survey. In addition, factors contributing to occupational stress and their link to nurses' turnover intention were examined. Hospital nurses in this study reported moderate levels of job-related stress. The main nurses' occupational stressors were inadequate pay, inequality at work, too much work, staff shortages, lack of promotion prospects, time pressure, job insecurity, and lack of management support. Occupational stressors related to organisational policies, duties, and interpersonal relations were the best predictors of occupational stress among nurses. Occupational stress was also associated with nurses' turnover intentions. Thus, hospital managers should initiate strategies to reduce the amount of occupational stress among the nurses. They should provide more support to the nurses to deal with the stress.

Theoretical implications

This study makes several distinct contributions. First, using a cross-sectional approach, the level of occupational stress among a group of nursing personnel in Iranian hospitals were examined. Second, factors contributing to nurses' occupational stress were identified. Third, the impact of occupational stress on nurses' turnover intention was investigated. This study adds to our knowledge of the factors affecting Iranian nurses' occupational stress and their impact on nurses' turnover intention.

Managerial implications

There are several practical implications that can be derived from the findings of this study. The findings alert healthcare managers to become more knowledgeable about occupational stress, the risk factors, mechanisms and effects. Since occupational stress is correlated with employees' productivity, it is very important to reduce it by applying the right human resources policies. Hospital managers must apply appropriate policies to decrease these occupational stressors. They can decrease the level of occupational stress in the organisation by increasing nurses' satisfaction with policies, work conditions, equal compensation and equal promotion. Besides, nurses should be trained to appropriate strategies to cope with stress easily and effectively. Physical activity, meditation, healthy life style and time management can help nurses to cope with their occupational stress.

Limitations and implications for future research

This study examined the level of occupational stress among a sample of hospital nurses. In this study, nurses' participation was voluntary and was conducted at six hospitals in Isfahan city, Iran. Therefore, the findings should be interpreted with caution since the participants were hospital nurses from a particular

province of Iran and do not represent all hospital employees in this country. More research in this area is needed before generalizing the study findings. Future research also needs to explore the effects of variables that were not measured in the current study, which can also directly or indirectly influence feelings of occupational stress, such as external environmental factors.

Acknowledgments

The author gratefully acknowledges the reviewers for their constructive comments on earlier drafts of this paper. The author would also like to thank all hospital nurses who took part in the study.

Ethical issues

This study was approved by ethics committee of Isfahan University of Medical Sciences.

Competing interests

The author declares no competing interests.

Author's contribution

AMM is the single author of the manuscript.

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