The 2nd International Conference on Integrated Information

The effect of job related stress on employees' satisfaction: A survey in Health Care

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Abstract

This paper investigates the impact of job related stress on Job Satisfaction of nursing staff working in hospitals. Job stress is one of the most important workplace health risks for employees, and job satisfaction has been considered as a crucial factor in the provision of high quality services and superior performance at hospitals. This paper presents a field survey. Drawing on a sample of 271 nurses operating in Greek hospitals, we examined the degree to which stressors such as conflict, workload, interpersonal relationships, career development, information access and feedback influence job satisfaction aspects such as physical environment, career opportunities, management style, job enrichment, rewards and job security. Results showed that conflict, heavy workload and lack of job autonomy are negatively associated with all job satisfaction dimensions, while shortage in information access and feedback is positively related to employees’ satisfaction with rewards and job security.

Keywords: Job stress; Job Satisfaction; conflict; workload; job autonomy; Health Care.

1. Introduction

Given that Human Resources lie at the core of the health care industry, the effectiveness of a National Health Care System (NHCS) depends mainly on their adequacy, quality and their right distribution [1]. On the contrary, nursing shortages are proved to be related with adverse incidents and aspects of hospital inefficiency [2]. Unfortunately, the Greek NHCS suffers from human resources’ shortages in nursing staff. Austerity measures imposed in Greece due to the recent financial crisis have aggravated this phenomenon.

While OB literature has extensively investigated organizational outcomes, still, job satisfaction is considered to be a crucial individual outcome which drives performance [3]. In the Health Care sector, which is...
characterized by high levels of emotional labor, employee job satisfaction becomes even more vital, particularly because the quality of the services offered cannot be easily standardized and their outcomes are directly affected by nursing staff and doctors.

In fact, stress routinely emerges in everyday work life [4], however, common management practice often regards as an effective action to exercise a reasonable amount of pressure, anxiety or fear in order to motivate employees toward even higher achievements. At the same time, besides energizing employees, excessive pressure may lead to side effects such as the creation of employee dissatisfaction [3] or even mental disorders, which in turn, may compromise individual and/or organizational performance [5,6,7]. Indeed, the level of service delivered to patients in the Greek NHCS, reflects to an extent the level of employees’ job satisfaction and occupational stress [8].

Understanding the link between work-related stress realized and nurses’ job satisfaction becomes vital particularly for Greek hospitals experiencing the adverse effects of the economic crisis such as mergers and cost reductions. The literature review reveals that relevant strategic issues are successfully approached with the employment of computational methods [9 – 23]. In light of the above, this empirical study aspires to shed light into the relationship between stress employees experience at work and employee job satisfaction in the health care sector.

2. Research Background

2.1. Work related stress

Management, sociology and psychology are among the various disciplines engaged in the investigation of work related stress [24, 25]. Overall, they mainly converge that stress greatly affects productivity and performance of organizations. Several drivers of occupational stress have been proposed in the literature such as physical environment, workload, career advancement, management style, working relationships, organizational support, work itself, rewards, job security, job autonomy, role conflict and ambiguity [26].

In particular, interpersonal work relations may cause high stress levels, when employees are subject to team pressure and express opinions not embraced by the work group [27]. Also, individuals’ opportunity to influence decisions or to be involved in decision making is considered as another stressor [28]. Similarly, several researchers have identified the role of control and autonomy at the workplace in relation to job stress [29,30,31]. Heavy workload and job stress are also related to lower job performance and satisfaction in hospitals [32,33].

2.2. Job satisfaction and its linkage with work related stress

Job satisfaction, one of the most widely studied issues in the relevant literature, may be defined as ‘the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values’ [34]. It is considered as a multidimensional construct involving for example, perceptions about work content, relationships with co-workers and supervisors, job control, job security, rewards, career opportunities, promotion and advancement, physical work environment, customers and feelings such as self-accomplishment and self-advancement [26]. On the basis that various factors can influence job satisfaction, the misfit between what is expected and what is actually received, drives the level of job satisfaction [35].

Drawing from a sample of Chinese intensive care nurses, Li and Lambert [36] revealed that the best predictors of job satisfaction were workload, uncertainty about patients’ treatment, behavioural disengagement and positive reframing which may be characterized as factors inducing stress, as well as years of experience in nursing (demographics). Similarly, Lee and Cummings [37] found that job satisfaction of front line nurse managers may be improved by addressing span of control and workload, increasing organizational support from supervisors and empowering managers to participate in decision-making. In fact, job satisfaction has been linked to individual
outcomes as well as work related stress [3, 38, 39]. For example, McGowan [38] confirmed the negative impact of nurses’ stress on job satisfaction, while, only the perceived lack of organisational support and involvement proved to be the most significant stressor. In a similar vein, nurses who succeeded to coping with stress were related to higher levels of job satisfaction [40]. Furthermore, Blegen’s [41] meta-analysis confirmed that occupational stress is a major factor related to the job satisfaction of nurses.

To recapitulate, most researchers reported a negative relationship between work stress and job satisfaction [41, 42, 44, 45, 46]. On the contrary, Draper et al.’s [47] identified a significant positive correlation between satisfaction and stress. In the light of the above, the following hypothesis is proposed:

H1: The higher the level of work-stress employees experience, the lower the job satisfaction expected.

3. Research Methodology

3.1. Sample & Questionnaire design

The field research was conducted in public hospitals in the area of Central Greece. Structured questionnaires were distributed to 300 nurses participating in training programs and 219 valid questionnaires were returned. Response rate is about 73%. Most nurses are female (79%) and the 52.4% of the respondents are between 35 and 45 years old. The 31% of the participants enjoyed from 1 to 5 years of experience in the same department/clinic. Most nursing staff (55.3%) has income ranging from 1,000 to 1,300euros. The 33.6% of the respondents are working in a department occupying more than 20 employees.

A structured questionnaire was employed to carry out the survey. The measurement instrument was thoroughly evaluated before released. Ten head nurses of the hospitals involved examined it along with two experienced researchers; the instrument’s cognitive relevance to the healthcare sector was confirmed prior to data collection. The instrument was developed by adapting existing multi-dimensional scales to capture occupational stress and employee job satisfaction by providing respondents with 7-point Likert scaled questions for each multi-item measure employed. The Job-Related Tension Scale (JRTS) was adopted to measure job stress by 15 items [48, 49]. An example of an item is: “Feeling that you have too heavy workload”. Warr et al.’s [50] job satisfaction scale was used to identify nurses’ satisfaction levels. Several researchers adopted this 15-items’ scale and confirmed its validity [51].

4. Data Analysis

4.1. Constructs’ validity

Initially, Principal Component Analysis (PCA) has been conducted to examine the underlying factors of job stress and job satisfaction scales. Four factors were derived, by using the scree test criterion. These principal components accounted for about 56% of the total variation. A cut-off of 0.50 was used for item scale selection and it was adopted a normalized varimax rotation to bring about simple and interpretable structure. According to Lewis-Beck [52], this method is the most commonly used in order to reduce the number of items in a survey questionnaire. Following an inspection of the items’ loadings on each factor, four distinct principal components were identified, corresponding to: (a) Conflict & workload, (b) Work autonomy and career development, (c) Information access and feedback and (d) interpersonal relations at work. The eigenvalues of the principal components extracted are reported in table 1.

PCA was also performed to examine the latent structure of the job satisfaction scale. Three factors with eigenvalues greater than one (Kaizer criterion) were extracted from the data, as it is shown in table 1. The same factor solution was also derived, by using the scree test criterion. These principal components accounted for about 58% of the total variation labeled as: (a) Physical environment & Career opportunities, (b) Management
style and job enrichment, and (c) rewards and job security. Preceding PCA, the Bartlett sphericity testing on the degree of correlation between the variables (p<0.001) and the appropriateness of the sample according to Kaiser–Meyer–Olkin (KMO over 0.50) verified the appropriateness of the sample. Cronbach’s coefficient alpha is calculated for each dimension to verify the internal consistency or reliability of all scales. All sub-scales exhibited well over 0.7 reliability levels suggested by Nunnally and Bernstein [53] as a minimum level for acceptable reliability.

Table 1. Descriptive statistics, factor constructs (PCA) and internal reliability analysis of all scales.

|                                      | mean  | Std. dev. | Number of items | Eigenvalues | Var. expl. (%) | Cronbach alpha: | KMO* |
|--------------------------------------|-------|-----------|-----------------|-------------|----------------|-----------------|------|
| **Job related stress**               |       |           |                 |             |                |                 |      |
| Conflict and workload                | 4.08  | 1.278     | 5               | 4.772       | 31.81          | 0.760           | 0.892|
| Work autonomy and career development | 3.81  | 1.612     | 3               | 1.351       | 9.01           | 0.789           |      |
| Information access and feedback      | 3.24  | 1.210     | 4               | 1.272       | 8.48           | 0.756           |      |
| Interpersonal relations at work      | 3.05  | 1.309     | 3               | 0.965       | 6.44           | 0.711           |      |
| **Job satisfaction**                 |       |           |                 |             |                |                 |      |
| Physical environment and Career      | 4.17  | 1.121     | 6               | 6.075       | 40.50          | 0.817           | 0.901|
| opportunities                        |       |           |                 |             |                |                 |      |
| Management style and job enrichment  | 4.47  | 1.156     | 6               | 1.496       | 9.97           | 0.843           |      |
| Rewards and job security             | 3.39  | 1.217     | 3               | 1.054       | 7.03           | 0.729           |      |

*The Kaiser–Meyer–Olkin (KMO) indicator was calculated to assess sample size adequacy. The minimum acceptable level is 0.5. Bartlett's test of sphericity is significant at p<0.001 for all scales. Valid N= 219

Fornell and Larcker’s [54] average variance extracted (AVE) criterion is adopted for the estimation of scales’ convergent validity. AVE value of a latent variable should be higher than 0.50, in order to explain more than half of the variance of its indicators on average [55]. As shown in tables 2 & 3, all scales met this criterion. In addition, convergent validity of a scale may be assessed by examining the factor loadings of the items on the model’s constructs. High items’ loadings on their underlying construct and lower loadings on unrelated constructs designates convergent validity. In our study, factor loadings of all items on their respective associated constructs are equal or greater than 0.70, while their loadings on unrelated constructs are less than 0.4.

Table 2. Results of convergent and discriminant validity analysis of job related stress scale.

|                                      | AVE  | CR  | CW  | WACD | IAF  | IR  |
|--------------------------------------|------|-----|-----|------|------|-----|
| Conflict and workload (CW)           | 0.546| 0.857| 0.739|
| Work autonomy and career development (WACD) | 0.705| 0.878| 0.579| 0.840|
| Information access and feedback (IAF) | 0.551| 0.815| 0.521| 0.500| 0.707|
| Interpersonal relations at work (IR) | 0.567| 0.797| 0.544| 0.471| 0.564| 0.753|

Discriminant validity of the measurement model was examined through Fornell and Larcker’s [54] AVE test and correlations criterion. Discriminant validity has been achieved when square root of the respective AVE of each construct exceeds the correlations between the factors making each pair. In that case, each dimension shares more variance with its own block of indicators than with another dimension representing a different block of
indicators. Tables 2 & 3 also display the correlation matrix for the two constructs. The diagonal of the matrix contains the square roots of the AVEs which provide a metric comparable to a correlation. The diagonal elements are greater than the off-diagonal elements in the corresponding rows and columns, thus results demonstrated adequate discriminant validity for all constructs in our research model.

Table 3. Results of convergent and discriminant validity analysis of job satisfaction scale.

|                              | AVE  | CR   | PECO | MSJE | RJS  |
|------------------------------|------|------|------|------|------|
| Physical environment and Career opportunities (PECO) | 0.559| 0.882| 0.748|
| Management style and job enrichment (MSJE)             | 0.564| 0.885| 0.650| 0.751|
| Rewards and job security (RJS)                         | 0.591| 0.811| 0.487| 0.409| 0.769|

4.2. Multiple Regression Analysis

To test the hypotheses multiple regression analyses were conducted. Demographic data (gender, age, working experience, education level, income, department size, position and job status) were treated as control variables.

Table 4 presents the statistical analysis results for testing the relationships between job stress and different aspects of job satisfaction. The independent variables explain the 30.6 percent of the total variation of job satisfaction stemming from physical environment and career opportunities (PECO), as well as the 21.9% and the 32.9%, of the management style and job enrichment (MSJE), rewards and job security aspects(RJS), respectively.

Table 4. Results of regression models testing the effect of job related stress on job satisfaction.

| Independent variables | PECO     | MSJE    | RJS     |
|-----------------------|----------|---------|---------|
| Gender                | 0.151*   | 0.033   | 0.073   |
| Age                   | 0.155*   | 0.102   | -0.154* |
| Education level       | -0.193** | -0.188**| -0.052  |
| Work experience       | 0.041    | 0.016   | -0.008  |
| Income                | 0.093    | 0.036   | 0.161*  |
| Position (hierarchy)  | 0.029    | 0.000   | 0.124*  |
| Department size (number of employees) | 0.054 | 0.050 | 0.179** |
| Job status (permanent/ temporary) | 0.096 | 0.115 | -0.053 |
| Conflict and workload | -0.235** | -0.218** | -0.516***|
| Work autonomy and career development | -0.290*** | -0.193* | -0.118 |
| Information access and feedback | 0.016 | 0.013 | 0.151* |
| Interpersonal relations at work | -0.033 | -0.101 | 0.019 |

* Adjusted -R^2 0.306*** 0.219*** 0.329***

* significant at the 0.05 level, ** significant at the 0.01 level, *** significant at the 0.001 level, N=219

The values of standardized betas reveal that job stress related to conflict and heavy workload is significantly and negatively associated with all job satisfaction dimensions (stand. b= -0.235, p<0.01, dependent: PECO, stand. b= -0.218, p<0.01, dependent: MSJE, stand. b= -0.516, p<0.001, dependent: RJS). Occupational stress stemming from autonomy and career development exerts a negative impact on only two aspects of job
satisfaction (stand. b= -0.290, p<0.001, dependent: PECO, and stand. b= -0.193, p<0.05, dependent: MSJE). On the contrary, stress linked with information access and performance feedback is positively related to rewards and security (stand. b= 0.151, p<0.05).

Considering the control variables, older (stand. b= 0.151, p<0.05) and female (stand. b= 0.155, p<0.05) nursing staff is more satisfied with career opportunities and physical environment. In a similar vein, nurses with higher wages (stand. b= 0.161, p<0.05), at a higher hierarchical level (stand. b= 0.124, p<0.05) working at large departments (stand. b= 0.179, p<0.01) are more pleased with rewards and job security they enjoy. Notwithstanding, older employees near retirement are dissatisfied with rewards and job security (stand. b= -0.154, p<0.05), as central government in Greece has announced harsh austerity measures such as cut downs of pensions, higher retirement ages and forced suspension before retirement. In addition, less educated nurses are dissatisfied with career opportunities (stand. b= -0.193, p<0.01) and job enrichment (stand. b= -0.188, p<0.01). No serious problems of multicollinearity exist between the independent variables as Variance Inflation Factors (VIF) is far below the 3 points limit suggested in Social Sciences literature.

5. Discussion

This study investigates the impact of job related stress elements upon job satisfaction, controlling for gender, age, education level, income, work experience, department size, and position.

In particular, work stress related to conflict and heavy workload proved to be significantly and negatively associated with all job satisfaction dimensions (physical environment and career opportunities, management style and job enrichment, and rewards and job security). This finding is consistent with previous research highlighting the detrimental consequences of work overload [26]. For example, Chu et al.’s [32] study in Taiwan, as well as Seo et al.’s [33] study in Korea confirmed the negative association between workload as an aspect of job stress and nurses’ job satisfaction. Moreover, a number of studies in several countries have also revealed that nurses’ workload is a major work-related stressor [56, 57, 58, 59]. Indeed, management stresses employees to perform multiple tasks and improve their performance. As the economic crisis deepens, the current global nursing shortage will probably increase, which in turn, will amplify nurses’ workload [51]. Besides, heavy workload leading to a high level of job stress reduce quality of nursing care, and nurses experience difficulties in meeting patient needs [60, 61].

Our results reveal that occupational stress stemming from autonomy and career development exerts a negative impact on nurses’ satisfaction related to job enrichment, management style and career opportunities. A number of researchers have identified self-growth and promotion as well as autonomy as key factors influencing nurses’ job satisfaction [26, 56, 62, 63, 64, 65]. Krugman et al.’s [66] work in a US study evaluating 10 years of progressive change, underlines the importance of establishing a clinical ladder which facilitates nurses’ professional development, enhances their organizational commitment and improves their job satisfaction. A similar grading structure has been successfully established also in UK [67], or proposed in other studies [26].

Blegen’s meta-analysis [41] as well as Chu et al.’s [32] and Zheng and Liu’s [68] studies indicated strong relationship between job autonomy and job satisfaction. Similarly, Yin and Yang’s [69] meta-analysis in Taiwan found that the strongest factors related to nurse turnover were job satisfaction, job autonomy and opportunities for promotion. Much research on the nurses’ roles within their work situations has also revealed that role ambiguity is another main source of job stress and it significantly influences job satisfaction of hospital nurses [32, 48, 70, 71, 72, 73]. Role ambiguity reflects the predictability of the outcome or responses to employee’s behaviour. It is present when a nurse lacks information about the behavioural requirements attached to his or her role, how those role requirements are to be achieved, and evaluative procedures available to assure that the behaviour performed is appropriate [74]. Interestingly enough, our results impinge upon existing literature. Stress related to role ambiguity, interpreted as limited information access and performance feedback proved to enhance nurses’ satisfaction from rewards and job security. The explanation of this finding may be found at the Greek
NHCS’s bureaucracy and the evaluation process established, as well as management’s approach toward performance evaluation and feedback.

References

[1] Firth, L. Mellor D.J., Moore K.A., & Loquet C., (2004). How can managers reduce employee intention to quit?, J. of Managerial Psychology, 19(2),170-187
[2] Sellgren, S., Ekval, G. & Tomson, G. (2007). Nursing staff turnover:Does leadership matter?, Leadership in Health Services, 20,169-183.
[3] Kakkos, N., Trivellas, P., & Fillipou, K. (2010). Exploring the link between job motivation, work stress and job satisfaction. A case study in the banking industry, proceedings of the 7th ICESAL, Rhodes, June 28-29, 211-225.
[4] Certo, S.C., (2003). Supervision: Concepts and Skill Building, 4th ed., New York: McGraw Hill.
[5] Kakkos, N., & Trivellas, P. (2011). Investigating the link between motivation, work stress and job performance. Evidence from the banking industry, 8th ICESAL, Thassos, July 10-12, 408-428.
[6] Trivellas P., Reklitis P., & Platis Ch. (2011). The impact of Occupational Stress on Performance in Health Care, ICININFO 2011, Advances on Information Processing and Management (AIPM), 1, 351-356.
[7] Trivellas P., Gerogiannis V., and Svarna S. (2011a) The impact of Emotional Intelligence on job outcomes and turnover intention in Health Care, ICININFO 2011, Advances on Information Processing and Management (AIPM), 1, 356-360.
[8] Antoniou, A.G., Davidson, M.J., & Cooper, L.C. (2003). Occupational stress, job satisfaction and health state in male and female junior hospital doctors in Greece, J. of Managerial Psychology, 16, 6, 592 – 621.
[9] Sakas, D.P., Simos, T.E., A fifth algebraic order trigonometrically-fitted modified Runge-Kutta Zonneveld method for the numerical solution of orbital problems, (2005) Mathematical and Computer Modelling, 42 (7-8), pp. 903-920.
[10] Konstantopoulos, N., Sakas, D.P., Triantafyllopoulos, Y., The strategy of stakeholder briefing during merger negotiation in the bank market, (2009) Journal of Management Development, 28 (7), pp. 622-632.
[11] Konstantopoulos, N., Sakas, D.P., Triantafyllopoulos, Y., The dimension of communication in the merger: Simulation with dynamic model (2007) AIP Conference Proceedings, 963 (2), pp. 1062-1065.
[12] Triantafyllopoulos, Y., Konstantopoulos, N., Sakas, D.P., The role of leadership in high tech manufacturing companies in a changing environment (2012) Key Engineering Materials, 495, pp. 176-180.
[13] Triantafyllopoulos, Y., Konstantopoulos, N., Sakas, D.P., The performance management after mergers and acquisitions in high technology manufacturing business (2012) Key Engineering Materials, 495, pp. 171-175.
[14] Vaxevanou, A.Z., Konstantopoulos, N., Sakas, D.P., Outsourcing or insourcing in the high technology systems sector in a maritime company (2012) Key Engineering Materials, 495, pp. 163-166.
[15] Terzi, M.C., Sakas, D.P., Vlachos, D., Marketing dynamic simulation modelling in high tech laboratories (2012) Key Engineering Materials, 495, pp. 23-27.
[16] Terzi, M.C., Sakas, D.P., Seimenis, I., Pricing strategy dynamic simulation modelling within the high-tech sector (2012) Key Engineering Materials, 495, pp. 167-170.
[17] Markaki, E.N., Sakas, D.P., Chadjipantelis, T., Selecting the project teams’ members. A challenging human resources management process for laboratory research (2012) Key Engineering Materials, 495, pp. 159-162.
[18] Sakas, D.P., Vlachos, D.S., Simos, T.E., Adaptive neural networks for automatic negotiation (2007) AIP Conference Proceedings, 963 (2), pp. 1355-1358.
[19] Sakas, D.P., Vlachos, D.S., Simos, T.E., Fuzzy constraint based model for efficient management of dynamic purchasing environments (2007) AIP Conference Proceedings, 963 (2), pp. 1351-1354.
[20] Sakas, D.P., Vlachos, D.S., Simos, T.E., Adaptive techniques for online auctions (2007) AIP Conference Proceedings, 963 (2), pp. 1359-1362.
[21] Sakas, D.P., Konstantopoulos, N., Triantafyllopoulos, Y., Contribution of the executives in bank sector mergers: Application with a simulation model (2007) AIP Conference Proceedings, 963 (2), pp. 1054-1057.
[22] Vlachos D.S., Simos T.E., Partitioned Linear Multistep Method for Long Term Integration of the N-Body Problem (2004) Applied Numerical Analysis & Computational Mathematics Volume 1, Issue 2, pages 540–546.
[23] Kosmas O.T., Vlachos D.S., Simulated annealing for optimal ship routing (2012) Computers & Operations Research Volume 39, Issue 3, 576–581.
[24] Tsarenko, Y. & Tojib, DR. (2011). A transactional model of forgiveness in the service failure context: a customer-driven approach, Journal of Services Marketing, 25, 5, 381-392.
[25] Blackhart, G.C., Nelson, B.C., Knowles, M.L., & Baumeister, R.F. (2009). Rejection elicits emotional reactions but neither causes immediate distress nor lowers self-esteem:A meta-analytic review of 192 studies on social exclusion, Personality & Social Psychology Review, 13(4), 269-309.
[26] Lu H., Barriball L. Zhang X., & While A. (2012). Job satisfaction among hospital nurses revisited: A systematic review, International Journal of Nursing Studies, 49, 1017–1038.

[27] MacDonald, L. A., Karasek, R. A., Punnett, L., & Scharf, T. (2001). Covariation between workplace physical and psychosocial stressors: evidence and implications for occupational health research and prevention, Ergonomics, 44, 7, 696-718.

[28] Troup, C., & Dewe, P. (2002). Exploring the nature of control and its role in the appraisal of workplace stress, Work & Stress, 16, 335-355.

[29] Cekmecelioğlu H.G. & Günsel A., (2011). Promoting Creativity among Employees Of Mature Industries: The Effects Of Autonomy And Role Stress On Creative Behaviors And Job Performance, Procedia Social and Behavioral Sciences, 24, 889–895.

[30] Konstantopoulou N., Sakas D., & Triantafyllopoulos Y. (2009a). The strategy of stakeholder briefing during merger negotiation in the bank market, Journal of Management Development, 28,7, 622 – 632.

[31] Konstantopoulou N., Sakas D., & Triantafyllopoulos Y. (2009b). Lessons from a case study for Greek banking M&A negotiations, Management Decision, 47,8, 1300 – 1312.

[32] Chu, C.I., Hsu, H.M., Price, J.L., & Lee, J.Y., (2003). Job satisfaction of hospital nurses: an empirical test of a causal model in Taiwan. International Nursing Review, 50, 176-182.

[33] Seo, Y., Ko, J., & Price, J.L. (2004). The determinants of job satisfaction among hospital nurses: A model estimation in Korea. International Journal of Nursing Studies, 41, 437–446.

[34] Locke, E.A. (1969). What is job satisfaction?, Organizational Behavior and Human Performance, 4, 309–336.

[35] Robinson, S.L., & Rousseau, D.M. (1994). Violating the psychological contract: not the exception but the norm, J. Organizational Behavior, 15, 3, 245-259.

[36] Li, J., & Lambert, V.A. (2008). Job satisfaction among intensive care nurses from the People's Republic of China, International Nursing Review, 55, 34–39

[37] Lee, G. & Cummings, G.G. (2008). Factors influencing job satisfaction of front line nurse managers: a systematic review. Journal of Nursing Management, 16, 7, 768–783.

[38] McGowan, B. (2001). Self-reported stress and its effects on nurses, Nursing Standard, 15, 42, 33-38.

[39] Bhuian, N.S., Menguc, B., & Borsboom, R. (2005). Stressors and job outcomes in sales: a triphasic model versus a linear-quadratic-interactive model, Journal of business research, 58, 141-150.

[40] Golbasi, Z., Kelleci M., & Dogan, S. (2008). Relationships between coping strategies, individual characteristics and job satisfaction in a sample of hospital nurses: Cross-sectional questionnaire survey, International Journal of Nursing Studies, 45, 12, 1800-1806.

[41] Blegen, M. (1993). Nurses’ job satisfaction: a meta-analysis of related variables, Nursing Research, 42(1), 36–41.

[42] Healy, C. M., & McKay, M. F. (2000). Nursing stress: The effects of coping strategies and job satisfaction in a sample of Australian. Journal of Advanced Nursing, 31, 681–688.

[43] Newbury-Birch, D., & Kamali, F. (2001). Psychological stress, anxiety, depression, job satisfaction, and personality characteristics in pre-registration house officers. Postgraduate Medical Journal, 77, 109–111.

[44] Prosser, D., Johnson, S., Kuipers, E., Szmukler, G., Bebbington, P. & Thornicroft, G. (1997). Perceived sources of work stress and satisfaction among hospital and community mental health staff and their relation to mental health burnout and job satisfaction. Journal of Psychosomatic Research, 43, 51–59.

[45] Stewart, M. J., & Arklie, M. (1994). Work satisfaction stress and support experience by community health, Canadian Journal of Public Health, 85, 180–184.

[46] Lu K.Y., Chang L.C., & Wu H.L. (2007). Relationships Between Professional Commitment, Job Satisfaction, and Work Stress in Public Health Nurses in Taiwan, Journal of Professional Nursing, 23, 2, 110-116.

[47] Draper, J., Halliday, D., Jowett, S., Norman, I., Watson, R., Wilson-Barnett, J., Normand, C., & O’Brien K. (2004). NHS cadet schemes: Student experience, commitment, job satisfaction and job stress, Nurse Education Today, 24, 219–228.

[48] Kahn, R.L., Wolf, D.M., Quinn, R.P., Snoek J.D., & Rosenthal R.A. (1964). Occupational stress: Studies in role conflict & ambiguity, New York: Wiley

[49] Strahan, C., Watson B., & Lenonob, A. (2008). Can organizational safety climate and occupational stress predict work-related driver fatigue?, Transportation Research Part F, 11, 418-426.

[50] Warr, P., Cook, J. & Wall, T., (1979). Scales for the measurement of some work attitudes and aspects of psychological well-being, J. of Occupational Psychology, 52, 2, 129-48.

[51] Lu H., While A., Barriball L. (2007a). Job satisfaction and its related factors: A questionnaire survey of hospital nurses in Mainland China, International Journal of Nursing Studies, 44, 574–588.

[52] Lewis-Beck, M.S. (1994). Factor Analysis and Related Techniques, London: Sage.

[53] Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric theory (3rd ed.). New York: McGraw- Hill.

[54] Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error, Journal of Marketing Research, 18, 1, 39-50.

[55] Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In Sinkovics, R. R. & Ghauri, P. N. (eds.), Advances in International Marketing (pp. 277-320), Emerald, Bingley.

[56] Aiken, L., Clarke, S., Sloane, D., Sochalski, J., Busse, R., Clarke, H., Giovannetti, P., Hunt, J., Rafferty, A., & Shamian, J. (2001). Nurses’ reports on hospital care in five countries, Health Affairs, 20(3), 43–53.
[57] Zhao, GH., Liu, YL., Wang, GL., & Ren, XY. (2002). Nurses' job stress in hospitals, Journal of Nursing Science, 17(9), 689–692.
[58] Lambert, V.A., Lambert, C.E., & Ito, M. (2004). Workplace stressors, ways of coping and demographic characteristics as predictors of physical and mental health of Japanese hospital nurses. International Journal of Nursing Studies, 41, 85–97.
[59] Khowaja, K., Merchant, R.J., & Hirani, D., (2005). Registered nurses perception of work satisfaction at a Tertiary Care University Hospital, Journal of Nursing Management, 13, 32–39.
[60] Bailit, J.L., & Blanchard, M.H., (2004). The effect of house staff working hours on the quality of obstetric and gynecologic care. Obstetrics and Gynecology, 103(4), 613–616.
[61] Sochalski, J. (2004). Is more better? The relationship between nurse staffing and the quality of nursing care in hospitals. Medical Care, 42, 2, II67–II73.
[62] Price, M. (2002). Job satisfaction of registered nurses working in an acute hospital, British Journal of Nursing, 11(4), 275–280.
[63] Nolan, M., Nolan, J., & Grant, G., (1995). Maintaining nurses’ job satisfaction and morale. British Journal of Nursing, 4(19), 1148–1154.
[64] Nolan, M., Brown, J., Naughton, & Nolan, J. (1998). Developing nursing’s future role 2: nurses’ job satisfaction and morale. British Journal of Nursing, 7(17), 1044–1048.
[65] Wang, Y., (2002). Job satisfaction of nurses in hospital. Chinese Journal of Nursing, 37, 8, 593–594.
[66] Krugman, M., Smith, K., & Goode, C.J., (2000). A clinical advancement programme: evaluating 10 years of progressive change, Journal of Nursing Administration, 30(5), 215–225.
[67] Buchan, J., (1999). Evaluating the benefits of a clinical ladder for nursing staff: an international review. International Journal of Nursing Studies, 36(2), 137–144.
[68] Zheng, X.J., & Liu, H.P. (2010). The influencing factors of nurse job satisfaction in 3A-grade general hospitals in Beijing. Chinese Journal of Nursing, 45, 3, 256–259.
[69] Yin, J.-C.T., & Yang, K.-P.A. (2002). Nursing turnover in Taiwan: a meta-analysis of related factors. International Journal of Nursing Studies, 39, 573–581.
[70] Dailey, R.C., (1990). Role perceptions and job tension as predictors of nursing turnover. Nursing Connections, 3(2), 33–42.
[71] Hingley, P., Cooper, C.L. (1986). Stress and the Nurse Manager. Chichester: Wiley.
[72] Rosse, J.G., & Rosse, P.H. (1981). Role conflict and ambiguity: an empirical investigation of nursing personnel. Evaluation and the Health Professional, 4, 385–405.
[73] Wu, L., & Norman, I.J. (2006). An investigation of job satisfaction, organizational commitment and role conflict and ambiguity in a sample of Chinese Undergraduate nursing students. Nurse Education today, 26, 304-314.
[74] Rizzo, J.R., House, R.J., & Lirtzman, S.F. (1970). Role conflict and ambiguity in complex organizations, Administrative Science Quarterly, 15, 150–163.