

# PROFESSIONAL COMMITMENT AMONG NURSES AS A MODERATOR OF JOB STRESS AND JOB PERFORMANCE : AN EMPIRICAL EXAMINATION IN THE MIDDLE EAST

Muhammad Jamal

## Correspondence:

Muhammad Jamal, Ph.D.  
Department of Management  
John Molson School of Business  
Concordia University  
Montreal, Quebec, Canada H3G 1M8  
**Email:** jamal@jmsb.concordia.ca

## Introduction

The nursing profession has long been considered a stressful one globally (Jamal & Baba, 2000). It is one in which rates of absenteeism, staff turnover and burnout are consistently high (Hassan, Hassan & King, 2012; Yoon & Kim, 2013). Two factors are peculiar to the hospital work environment: the prevalence of shiftwork and the situation of facing patients in distress, as well as death and dying, on a regular basis (Al-Hammad et al. 2012; Jamal & Baba, 1992). These two factors have been suggested as possible contributors to high stress and strain among nurses. The present study examined employees' job stress and job performance relationship among hospital nurses in the Gulf States, Middle East. Two comprehensive meta-analyses of stress and performance have highlighted the importance of this type of empirical study in non-western countries (Gilboa, Shirom, Fried & Cooper, 2008; Muse, Harris & Field, 2003). In a recent thought-provoking article, Zahra (2011) has also alluded to the importance of conducting rigorous empirical research similar to the Western tradition in the (new) Middle East. In addition, the present study also examined the role of professional (occupational) commitment in the relationship of job stress and job performance (Lee, Carswell & Allen, 2000).

## Abstract

This study examined the relationship of overall job stress, challenge stress and hindrance stress with job performance, absenteeism and turnover intention among hospital nurses (N=255) in the Gulf States of the Middle East. Multiple sources of data collection were employed. A structured questionnaire was used to collect data on measures of job stress and turnover intention. Job performance and absenteeism data were obtained from hospital records. Multiple regressions and moderated multiple regressions were used to analyze data. Overall job stress, hindrance stress and challenge stress were significantly related to job performance, absenteeism and turnover intention. No differential effects of challenge and hindrance stress were found for the study's three dependent variables. Professional commitment among nurses moderated more than 50 percent relationship between the measures of stress and dependent variables. Overall, the results of the present study supported the convergence instead of divergence perspective in international management. Implications of the findings are discussed for future researchers in international and cross-cultural management.

**Key words:** Nurses, stress, job performance, Middle East

Job stress refers to an individual's reactions to characteristics of the work environment that tend to be emotionally and physically threatening (Jamal, 2007). It points to a poor fit between the individual's capabilities and the work environment, in which excessive demands are made of the individual or the individual is not fully prepared to handle a particular situation (Jamal, 1984). In general, the higher the imbalance between the demands and the individual's abilities, the

higher will be the perceived stress (Jamal, 1993). Job performance can be viewed as an activity in which an individual is able to accomplish successfully the task assigned to them, subject to the reasonable utilization of available resources (Jamal, 2007).

Conventionally and historically, job stress has been primarily viewed as a unidimensional construct affecting individuals' work attitudes and behavior (Jamal, 2013). In recent years, it has been suggested that some inconsistent findings between measures of job stress and employees' attitudes and behavior might be due to the convention of treating job stress as unidimensional. These scholars have suggested two distinct dimensions of job stress: challenge stress and hindrance stress (Cavanaugh, Bosewell, Roehling & Boudreau, 2000). Challenge stressors are perceived to be stimuli such as high workload, time pressure and high level of responsibility. They were labeled as such because they include potentially stressful demands perceived effectively under the control of the individual and, if overcome, they might allow for opportunity for personal growth (Wallace, Edwards, Arnold, Frazier & Finch, 2009). Hindrance stressors are stimuli such as organizational policies, red tape, work role ambiguity and resource inadequacy. They were labeled as such because they create potentially stressful demands generally perceived as beyond the control of the employees, so that they might restrict opportunity for personal growth (Wallace et al., 2009).

To date, there are only a few empirical studies reported in the literature employing the two-dimensional conceptualization of job stress (Clark, 2012; Jamal, 2012; Rodell & Judge, 2009; Wallace et al., 2009). The present study examined the relationship between challenge stress and hindrance stress with job performance, absenteeism and turnover intentions among nurses working in hospitals in the Gulf States, Middle East. Constructs like job stress, burnout, job satisfaction and professional commitment are developed and empirically tested primarily in developed industrialized countries (Baba, Jamal & Tourigny, 1998; Maslach, 2003). Their portability and usefulness in developing and non-Western countries have rarely been examined despite repeated suggestions to do so (Jamal, 2010; Pudelka, Carr, Fink & Wentage, 2006; Zahra, 2011). In this respect, the present study contributes to international stress management literature by examining the newly proposed two dimensions of stress (challenge and hindrance) along with an independent overall job stress scale (Parker & DeCotiis, 1983) with job performance, absenteeism and turnover intention. A conceptual framework was developed which guided the present study. The conceptual framework is presented in Figure 1 - opposite page.

As shown in Figure 1, it is suggested that nurses' professional commitment may moderate the relationship between measures of job stress and outcome

variables. In the literature, professional commitment and occupational commitment have been used interchangeably (Blau, 1985; Lee, Carswell & Allen, 2000). We prefer to use the term of professional commitment in the present study as nursing has long been recognized as a "profession" with a long period of training, exhaustive guidelines and intense ethical standards (Gould & Fontenla, 2006; Fornes, Rocco & Wollard, 2008; Yoon & Kim, 2013). When an individual shows commitment to his profession, the phenomenon of self-selection plays an important role (Jamal, 1984). In many cases, individuals who consciously look for certain types of jobs and professions tend to exhibit stronger commitment when they are in such jobs. Therefore, it may be the case that such individuals, through anticipatory socialization, become more knowledgeable about these jobs, in terms of demands and excesses, and may appear to be more receptive to job stresses and general work environment. Whenever these individuals face adverse things at the job, it does not necessarily lead to reality shock for them because of their prior learning about the daily intricacies of their chosen profession / job (Jamal & Baba, 1992). It is thus predicted that the job performance of individuals with high professional commitment will be less affected by high job stress than the performance of individuals with low professional commitment.

In light of the proposed conceptual model as well as the previous empirical evidence on job stress, challenge-hindrance stress, and outcome variables, a number of hypotheses were developed and tested in the present study. Both overall job stress and challenge-hindrance stress were employed as independent variables. Job performance, absenteeism and turnover intention were employed as dependent variables. Professional commitment was used as a moderator variable. These hypotheses are listed below:

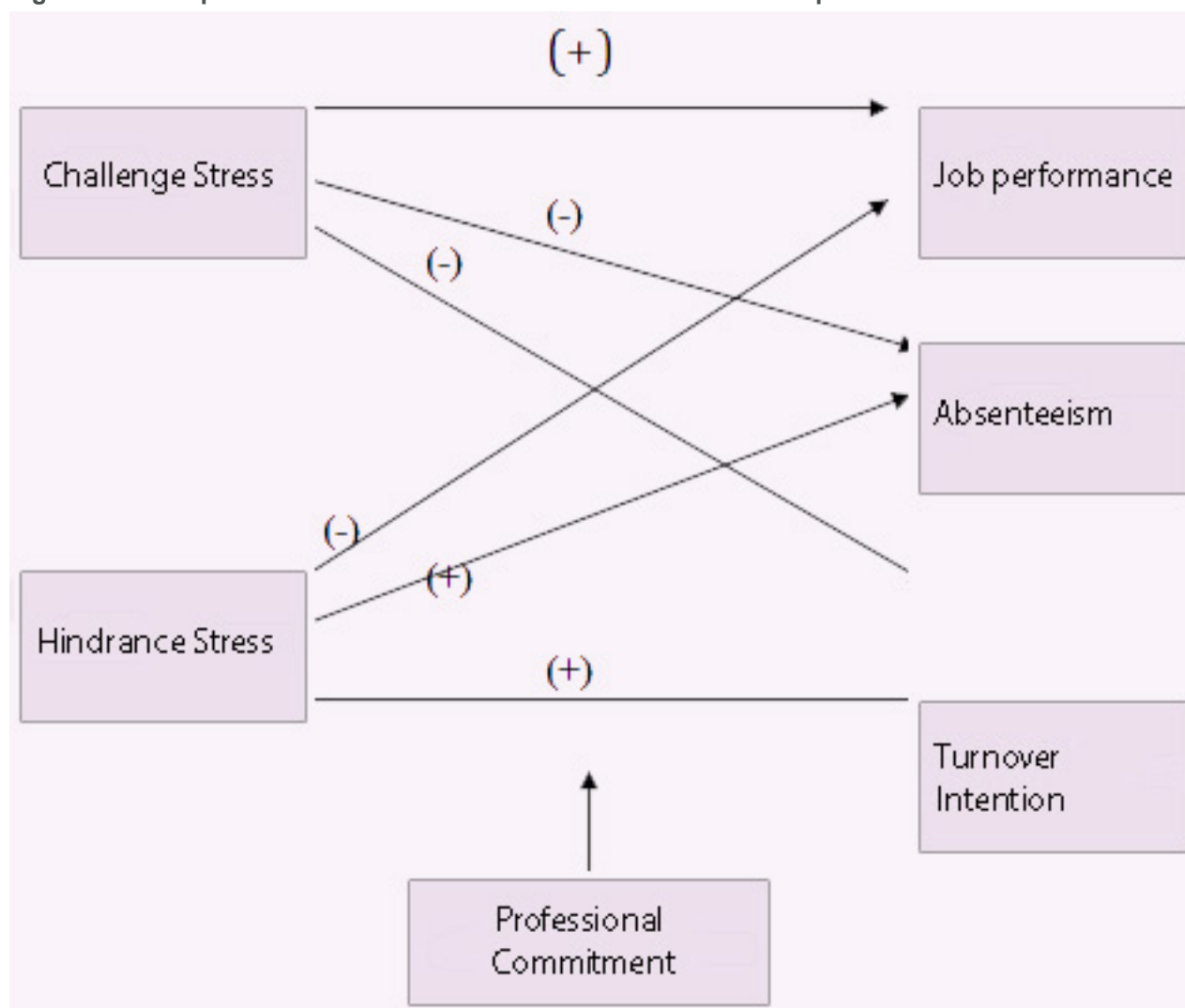
**Hypothesis 1:** Overall job stress will be negatively related to job performance and will be positively related to absenteeism and turnover intention.

**Hypothesis 2:** Challenge stress will be positively related to job performance and will be negatively related to absenteeism and turnover intention.

**Hypothesis 3:** Hindrance stress will be negatively related to job performance and will be positively related to absenteeism and turnover intention.

**Hypothesis 4:** Professional commitment will moderate the relationship between the measures of job stress and three dependent variables. It is hypothesized that nurses with higher professional commitment will be better off than nurses with lower professional commitment.

Figure 1: Conceptual framework of stress and outcome relationship



## Method

### Research Setting

The present study was conducted among hospital employees in the Gulf States, Middle East. A number of hospitals were contacted and invited to participate in the study, explaining the scope and purpose of the study. All hospitals were publicly funded and had state-of-the-art medical facilities. Data were collected primarily from three hospitals which showed the willingness to support the study.

### Procedures

For this study, data were collected by means of a structured questionnaire. All nursing staff in three hospitals were the potential respondents. With the help of the hospital administration, copies of the questionnaire were given to randomly selected potential respondents along with their paychecks. They were given instructions to return the completed questionnaire directly to the researcher at the university address. Approximately 450 questionnaires were given out and with one follow-up reminder, 257 completed questionnaires were returned, yielding a response rate of 59 percent. It should be acknowledged that this type of research is rather rare in the Gulf States, and that might be partially responsible for the modest response rate.

### Sample Characteristics

The majority of the respondents were female (88%) and were married (78%). The average respondent was 34 years of age, had 14 years of education, 9 years of seniority in the hospital and had 6 dependents to support. Respondents were quite similar to non-respondents with regard to a number of background and socio-demographic variables.

### Measures

In line with the recommendation of international management researchers, standardized scales with known reliabilities and validities were used to assess the study's independent, dependent, and moderator variables (Schaffer & Riordan, 2003; Zahra, 2011). It is a requisite for the meaningful comparison of results with studies done in western industrialized countries.

**Overall Job Stress:** Overall job stress was assessed with the 13-item Likert-type scale developed by Parker & DeCotiis (1983). The scale had one to five response options, on indicating a strong agreement with the item and five indicating a strong disagreement. This scale is regularly used to assess overall job stress and has good psychometric properties (Baba, Jamal & Tourigny, 1998).

**Challenge Stress:** Challenge stress was assessed by the 6-item scale developed by Cavanaugh, Bosewell, Roehling and Boudreau (2000). This is a Likert-type scale with one to five response options, one indicating a strong agreement and five indicating a strong disagreement with the item. Only limited empirical studies have been conducted using this scale. However, available empirical evidence indicated good internal consistency reliability (Jamal, 2012).

**Hindrance Stress:** Hindrance stress was assessed by the 5-item scale developed by Cavanaugh, Bosewell, Roehling and Boudreau (2000). This is also a Likert-type scale with one to five response options. Because of its short history, only limited psychometric data are available about this scale, which has indicated its reasonable internal consistency and stability (Jamal, 2012).

**Job Performance:** Job performance data were obtained from hospital records. All hospitals used a 10-item graphic rating scale for annual performance appraisal completed by immediate supervisors. Each item has one to five response options, five indicating an excellent performance and one indicating a poor performance. In all three hospitals, the same performance scale and ratings were used. In the present study, ratings on ten items were combined to create the index of overall job performance.

**Absenteeism:** Absenteeism was assessed by the actual incidents of absence reported in hospital files for each employee, for 4 months from the day the questionnaires were distributed. Frequency of absenteeism was measured instead of the duration of absence.

**Anticipated Turnover:** Anticipated turnover was assessed by asking each respondent to state the probability of his/her staying with the same hospital for two years, from the day the questionnaire was completed. This measure has been reported to be highly correlated with actual turnover (Jamal & Baba, 2000).

**Professional Commitment:** Professional commitment was assessed with the 18-item occupational commitment scale for nurses developed by Meyer, Allen and Smith (1993). Similar to the organizational commitment scale, occupational commitment scale tends to assess affective, continuance, and normative commitment to the occupation. The scale has one to five response options, five indicating a strong professional commitment and one indicating a low professional commitment. This scale is regularly used in social sciences and has good psychometric properties (Lee, Carswell & Allen, 2000).

## Results

The means (M values), standard deviations (SD values) and reliability coefficients of all variables with multiple items are presented in Table 1. Reliabilities (Cronbach's alpha) varied from .81 (hindrance stress) to

.91 (professional commitment). Overall, reliabilities were considered to be good for survey-type research design.

Inter-correlations among the study's variables were computed and are presented in Table 2.

The average correlation among three scales of job stress was .37. The average correlation among three dependent variables (performance, absenteeism, turnover intention) was .25. Professional commitment was weakly correlated with three job stress scales as well as with two dependent variables. However, professional commitment showed a moderate negative correlation with turnover intention which indicated their shared nomological network. To test hypotheses 1 to 3, bivariate multiple regressions were computed after controlling for age, gender, marital status, and seniority. Results are presented in Table 3 - page 8.

Overall job stress was significantly related to job performance, absenteeism and turnover intention in the predicted direction, thus supporting hypothesis 1. Challenge stress was significantly related to job performance and absenteeism, but was not related to turnover motivation. However, in both significant relationships, the direction of the relationship was contrary to the hypothesized relationship. Thus, hypothesis 2 was not supported by data in the present study. Hindrance stress was significantly related in the predicted direction to job performance, absenteeism and turnover motivation, thus supporting hypothesis 3. In sum, overall job stress, hindrance stress and challenge stress were found to be related to job performance, absenteeism and turnover motivation in the same manner. No differential effects of challenge and hindrance stress on three dependent variables were found in this study. However, it is noted that the strength of correlation was stronger for hindrance stress than for challenge stress (-.54 vs -.23 for job performance; .31 vs .19 for absenteeism).

Moderated multiple regressions were used to test hypothesis 4 which concerned the interactive effects of professional commitment on three dependent variables. Hierarchical regression analysis was performed in which overall job stress was entered first, followed by professional commitment, and then overall job stress and professional commitment. A summary of results are presented in Table 4. Professional commitment appeared to be an important moderator in this sample of nurses, moderating five of the nine relationships between three measures of job stress and three dependent variables. Job performance and absenteeism were the dependent variables in which the moderating effect of professional commitment was more prominent.

The unique variance explained by the interaction effects of overall job stress and professional commitment was 5 percent for job performance and 4 percent for turnover intention. The unique variance explained by the interaction effects of challenge stress and professional



Variable	Number of Items	Mean	Standard Deviation	Reliability <sup>a</sup>
(1) Overall Job Stress	13	2.36	1.23	.88
(2) Challenge Stress	6	3.44	0.69	.83
(3) Hindrance Stress	5	3.16	0.89	.81
(4) Job Performance	10	3.45	0.62	.84
(5) Absenteeism	1	2.65	1.89	--
(6) Turnover Intention	1	2.63	1.02	--
(7) Professional Commitment	18	3.75	1.12	.91

Table 1:  
Means,  
Standard  
deviations  
and reliability  
coefficients  
of study  
variables

N = 255; a. Reliability coefficients are Cronbach's alpha.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Overall Job Stress <sup>a</sup>	--						
(2) Challenge Stress	.29	--					
(3) Hindrance Stress	.43	.39	--				
(4) Job Performance	-.42	-.23	-.54	--			
(5) Absenteeism	.38	.19	.31	-.29	--		
(6) Turnover Intention	.20	.13	.19	-.16	.31	--	
(6) Professional Commitment	-.12	.09	-.17	.09	.07	-.44	--

Table 2:  
Intercorrelations  
among study's  
variables

a. N = 255,  $r = .15$ ,  $p < .05$

Table 3: Multiple regression of overall job stress, challenge stress and hindrance stress with three dependent variables

Variable	Job Performance		Absenteeism		Turnover Intention	
	R	R <sup>2</sup>	R	R <sup>2</sup>	R	R <sup>2</sup>
(1) Overall Job Stress	.40	.16	.35	.12	.18	.03
(2) Challenge Stress	.20	.04	.17	.03	.09	.01
(3) Hindrance Stress	.49	.24	.29	.08	.17	.03

N = 255, R = .14, p &lt; .05

Table 4: Results from hierarchical moderated multiple regression analysis showing the relationship between overall job stress, challenge stress, hindrance stress, and professional commitment with three dependent variables.

Regression Results	Dependent Variable					
	Job Performance		Absenteeism		Turnover Intention	
	R <sup>2</sup>	▲R <sup>2</sup>	R <sup>2</sup>	▲R <sup>2</sup>	R <sup>2</sup>	▲R <sup>2</sup>
(1) Overall Job Stress (OJS)	.16*	.16*	.12*	.12*	.03*	.03*
Professional Commitment (PC)	.18*	.02	.12*	.00	.04*	.01
OJS x PC	.23*	.05*	.14*	.02	.08*	.04*
(2) Challenge Stress (CS)	.04*	.04*	.03*	.03	.01	.01
Professional Commitment (PC)	.05*	.01	.04*	.01	.00	.00
CS x PC	.08*	.03*	.05*	.00	.02	.01
(3) Hindrance Stress (HS)	.24*	.24*	.08*	.08*	.03*	.03*
Professional Commitment (PC)	.25*	.01	.08*	.00	.03*	.00
HS x PC	.29*	.04*	.09*	.01	.08*	.05*

\* p &lt; .05

commitment was 3 percent for job performance. The unique variance explained by the interaction effects of hindrance stress and professional commitment was 4 percent for job performance and 5 percent for turnover intention. A close examination of the data through subgroup analysis indicated that nurses with high professional commitment appeared to be better off than nurses with low professional commitment in terms of the negative consequences of job stress. No significant interaction effects were found with the dependent variable, absenteeism. Thus, hypothesis 4 was only partially supported by the data in this study.

## Discussion

The results of the present study derived from hospital nurses in the Gulf States, Middle East supported the relationship between the measures of job stress and outcome variables of job performance, absenteeism and turnover intention. Overall job stress was negatively related to job performance and was positively related to nurses' absenteeism and turnover intention. Contrary to our prediction, challenge stress was also negatively related to job performance and positively related to absenteeism. Hindrance stress was negatively related to job performance and was positively related to nurses' absenteeism and turnover intention. Before the findings are discussed any further, a note of caution is warranted about the limitations of the study which might include perceptual measures of three job stress scales, turnover intention, nurses' professional commitment, a modest response rate, and cross-sectional research design. For future research, it will be desirable to use objective measures of job stress along with perceptual measures and to use longitudinal research design for greater confidence in results.

The absence of differential effects of challenge stress and hindrance stress on nurses' job performance, absenteeism is not only contrary to the two-dimensional framework of job stress (Cavanaugh et al., 2000) but also to a few empirical studies on the topic. For example, in a recent study of 215 employees across 61 offices of a state agency in the U.S., the authors noted a modest positive relationship between challenge stress and role-based performance and a negative relationship between hindrance stress and role-based performance (Wallace et al., 2009). However, the average correlation between challenge stress and four measures of performance was a meager  $+0.12$ , while the average correlation between hindrance stress and the four measures of performance was  $-0.35$ . In a recent study of employees in a multinational organization in Malaysia ( $N = 305$ ) and Pakistan ( $N = 325$ ), job stressors similar to challenge stress (i.e. work overload) and stressors similar to hindrance stress (i.e. work conflict, ambiguity, resource inadequacy) were found to be negatively related to job performance (Jamal, 2011). The results of the present study along with two recent studies on the topic (Jamal, 2011; Wallace et al., 2009) lend support to the pervasive effects of stress on employee

and organization well-being and in general tend to be consistent with the bulk of existing literature on job stress (Eatough, Change, Miloslavic & Johnson, 2011; Jamal, 2010). Empirical evidence, perhaps, suggests clearly that chronic job stress, lasting a relatively long time or even permanently, affects employees' and organizations' health and well-being inversely. Any notion of calling some stress as challenge and good for the individual is not well supported by the empirical studies on job stress outcome relationships. Since the data for the present study was collected in the Gulf States of the Middle East with a strong collectivistic cultural orientation (Hofstede, 2001), the results of the present study tend to be more supportive of the convergence as opposed to divergence perspective in international and cross-cultural management (Pudelko et al., 2006)

Professional commitment among nurses moderated five of the nine relationships between three measures of job stress and three dependent variables - performance, absenteeism and turnover intention. According to the test suggested by Brozek & Tiede (1952), the probability of this number of differences occurring by chance is less than  $.01$ . Though professional commitment moderated more than 50 percent of the relationship between job stress and outcome variables, yet the dominant patterns of results in both significant and non-significant comparison was that nurses who showed higher professional commitment appeared to be better off against the negative consequences of job stress than nurses who showed low professional commitment. Thus, in the present study, professional commitment acts as a buffer against the aversive effects of job stress on nurses' job performance and work behavior. Since nurses are the essential part of the healthcare system globally, it is highly recommended that management should pay serious attention to factors which might enhance professional commitment and reduce or even remove factors which hinder professional commitment. A recent British study has provided insights into factors which might lead to increased professional commitment and they included team work, feedback from patients, the variety of work, good support from management, family friendly work environment, support from doctors, and the multidisciplinary team work (Gould & Fontenla, 2006). Similarly, nursing literature has also provided insights into factors which might lead to decrease in professional commitment among hospital nurses and they included factors such as shift work (especially quick rotating shifts), verbal and physical abuse, poor pay, heavy work load, work-life imbalance, too much paper work and poor image of nursing held by the public (AbuAlRub, 2004; Gould & Fontenla, 2006; Harrison, Newman & Roth, 2006; Lu, Change & Wu, 2007).

In sum, the present study found the negative relationship between the measures of job stress and job performance and the positive relationship between the measures of job stress and absenteeism and turnover intention among hospital nurses. Professional commitment was found to be an important moderator

of job stress and outcome relationship. Measures of job stress assessed in the present study were of the nature which will be affected primarily through management actions. Therefore, it is recommended that management invest time and resources toward discovering how job stress among nurses might be managed for better performance, well-being and retention of hospital nurses (Jamal, 2007; Schmidt, 2007). In addition, it is felt that despite management's concerted efforts and serious actions to combat job stress, it is probably going to remain an important concern for many in the world of work for years to come, primarily because of our incomplete knowledge of what causes stress in many job situations. Among hospital nurses, building and enhancing professional commitment may be an important mechanism in combating some of the aversive effects of job stress (Fornes, Rocco & Wollard, 2004). As the process of globalization becomes more pervasive in coming years, it seems more important that these strategies should reflect a cross cultural perspective (Al-Roubaie, 2002; Alvi & Al-Roubaie, 2011).

## References

- Alasmari, H.A. & Douglas, C. (2012). Job satisfaction and intent to leave among critical care nurses in Saudi Arabia. *Middle East Journal of Nursing*, 6 (4), 3-12.
- Al-Hammad, F. A., Raheel, H., Al-Baiz, L. E. & Al-Otaibi, A. M. (2012). The effect of shift work on psychological stress, sleep pattern and health of nurses working at a tertiary hospital, Riyadh. *Middle East Journal of Nursing*, 6 (6), 14-20.
- Alvi, S. A. & Al-Roubaie, A. (2011). *Globalization of Knowledge: Islam and its Contribution*. Bloomington, Indiana, USA: Trafford Publishing.
- AbuAlRub, R.F. (2004). Job stress, job performance and social support among hospital nurses. *Journal of Nursing Scholarship*, 36, 73-79.
- Al-Roubaie, A. (2002). *Globalization and the Muslim World*. Kuala Lumpur, Malaysia: Malita Jaya Publishing House.
- Baba, V.V., Jamal, M. & Tourigny, L. (1998). Work and mental health: A decade in Canadian research. *Canadian Psychology*, 38, 94-107.
- Blau, G. (1988). Further exploring the meaning and measurement of career commitment. *Journal of Vocational Behavior*, 32, 284-297.
- Brozek, J. & Tiede, K. (1952). Reliable and questionable significance in a series of statistical tests. *Psychological Bulletin*, 49, 339-341.
- Cavanaugh, M.A., Boswell, W.R., Roehling, M.V. & Boudreau, J.W. (2000). An empirical examination of self-reported work stress among U.S. managers. *Journal of Applied Psychology*, 85, 65-74.
- Clark, S. (2012). The effects of challenge and hindrance stressors on safety behavior and safety outcomes: A meta-analysis. *Journal of Occupational Health Psychology*, 17, 387-397.
- Eatough, E.M., Change, C. Miloslavic, S.A. & Johnson, R.E. (2011). Relationship of role stressors with organizational citizenship behavior: A meta-analysis. *Journal of Applied Psychology*, 96, 619-632.
- Fornes, S.L., Rocco, T.S. & Wollard, K.K. (2004). Workplace commitment: A conceptual model developed from integrative review of the research. *Human Resource Development Review*, 7, 339-357.
- Gilboa, S., Shirom, A., Fried, Y. & Cooper, C. (2008). A meta-analysis of work demand stressor and job performance: Examining main and moderating effects. *Personnel Psychology*, 61, 227-271.
- Gould, D. & Fontenla, M. (2006). Commitment to nursing: results of a qualitative interview study. *Journal of Nursing Management*, 14, 213-221.
- Hassan, J., Hassan, A. & King, M. L. (2012). Nursing image in Qatar: Past, present and future. *Middle East Journal of Nursing*, 6 (4), 26-28.
- Harrison, D.A., Newman, D.A. & Roth, P.L. (2006). How important are job attitudes? A meta-analytic comparison of integrative behavioral outcomes and time sequences. *Academy of Management Journal*, 49, 305-325.
- Hofstede, G. (2001). *Culture's Consequences*. 2nd Edition. Thousand Oaks, California: Sage Publications.
- Jamal, M. (1984). Job stress and job performance controversy: An empirical assessment. *Organizational Behavior and Human Performance*, 33, 1-21.
- Jamal, M. (2007). Job stress and job performance controversy revisited: An empirical examination in two countries. *International Journal of Stress Management*, 14, 175-187.
- Jamal, M. (2010). Burnout among Canadian, Chinese, Malaysian and Pakistani employees: An empirical examination. *International Management Review*, 6, 31-41.
- Jamal, M. (2011). Job stress, job performance and organizational commitment in a multinational company. *International Journal of Business and Social Science*, 2, 20-29.
- Jamal, M. (2013). Job stress among hospital employees in the Middle East: Social support and Type A behavior as moderators. *Middle East Journal of Business*, 8 (3), 7-16.
- Jamal, M. & Ahmed, S.W. (2012). Challenge-hindrance stress, burnout, job satisfaction and health: Type A behavior as a moderator. *International Journal of Business and Management Tomorrow*, 2 (May), 1-8.
- Jamal, M. & Baba, V.V. (2000). Job stress and burnout among Canadian managers and nurses. *Canadian Journal of Public Health*, 91, 454-458.
- Jamal, M. & Baba, V.V. (1992). Shift work and department type related to job stress, and work attitudes and behavioral intentions: A study of nurses. *Journal of Organizational Behavior*, 13, 449-464.



Jamal, M. & Badawi, J.A. (1993). Job stress among Muslim immigrants in North America: Moderating effects of religiosity. *Stress Medicine*, 9, 145-151.

Lee, K., Carswell, J.J. & Allen, N.J. (2000). A meta-analytic review of occupational commitment: Relations with persons and work related variables. *Journal of Applied Psychology*, 85, 799-811.

Lu, K.Y., Change, 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, 110-116.

Maslach, C. (2003). Job burnout: New directions in research and intervention. *Current Directions in Psychological Science*, 2, 189-192.

Meyer, J.P., Allen, N.J. & Smith, C.A. (1993). Commitment to organization and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78, 538-551.

Muse, L.A., Harris, S.G. & Field, H.S. (2003). Has the inverted-U theory of stress and job performance had a fair test? *Human Performance*, 16, 349-364.

Parker, D.F. & DeCotiis, T.A. (1983). Organizational determinants of job stress. *Organizational Behavior and Human Performance*, 32, 160-167.

Pudelko, M., Carr, C. Fink, G. & Wentahe, P. (2006). The convergence concept in cross cultural management research. *International Journal of Cross Cultural Management*, 6, 15-18.

Rodell, J.B. & Judge, T.A. (2009). Can "good" stressors spark "bad" behaviors? The mediating role of emotions in links of challenge and hindrance stress with citizenship and counter productive behaviors. *Journal of Applied Psychology*, 94, 1438-1451.

Schaffer, B.S. & Riordan, C.M. (2003). A review of cross-cultural methodologies for organizational research. *Organizational Research Methods*, 6, 169-215.

Schmidt, K.H. (2007). Organizational commitment: A further moderator in the relationship between work stress and strain. *International Journal of Stress Management*, 14, 26-40.

Wallace, J.C., Edwards, B.D., Arnold, J., Frazier, M.L. & Finch, D.M. (2009). Work stressors, role based performance and the moderating influence of organizational support. *Journal of Applied Psychology*, 94, 254-262.

Yoon, S. L. & Kim, J. H. (2013). Job related stress, emotional labor, and depressive symptoms among Korean nurses. *Journal of Nursing Scholarship*, 45, 1-8.

Zahra, S. A. (2011). Doing research in the (New) Middle East: Sailing with the wind. *Academy of Management Perspective*, 10 (November) 1-16.

## Acknowledgements

This study was supported by grants from the Social Sciences Research Council of Canada (410-99-0203; S00 802, 2003-2006) and Fonds pour la formation de chercheurs de l'aide à la recherche from the Province of Quebec (99-ER-0506). The author acknowledges the cooperation and help of Dr. Amer Al-Roubaie, Dr. Haroon Yusuf, Dr. Muhammad Ismail, Ms. Shima Husen, and many research assistants in Montreal and overseas in data collection and analysis. Requests for reprints should be made to Dr Muhammad Jamal, Department of Management, John Molson School of Business, Concordia University, Montreal, Quebec, Canada, H3G 1M8 (E-mail: mjamal@jmsb.concordia.ca)