A Study on the Impact of Occupational Stress on Mental Health among Nurses

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Abstract: Research on occupational stress has assumed increasing interest and importance in both industrialized as well as developing countries of the world. It has become critical in the last two decades because of the changed business environment. The combination of fluctuating work environment with competing work and family commitments has negatively affect employees in many ways such as lowered employee morale, reduced productivity and increased employee turnover. Till today, the literature on occupational stress is widespread which focused on western settings and reasonably little work is done on nursing in India. The purpose of this study was to study the level of stress perceived by nurses working in private hospitals in Coimbatore District Tamil Nadu. More particularly, the objectives of the study were: to identify the level of occupational stress among nurses working in private hospitals in Coimbatore District, Tamil Nadu, India and to investigate whether there is any relationship between the occupational stress and mental health among the nurses.

Key words: Enviroment, commitments, employee, study, mental health

INTRODUCTION

Occupational stress and mental health: Now a days, stress is an unavoidable characteristic of life and work. More researches in human resource management suggests that a significant and increasing proportion of the population suffers from work-related stress (Edwards and Burnard, 2003; Smith *et al.*, 2000). Majority of them expressed their concern over the negative consequences of stress for individuals' psychological well-being, organizational performance and efficiency (Jain *et al.*, 2013). The occupational stress can be more ubiquitous in developing country like India. This occupational stress can be best understood by the Karasek's occupational stress model (Karasek, 1979) with two dimensions viz., demand and discretion. On these two dimensions jobs can be classified into four types such as high-strain jobs, low-strain jobs, active jobs and passive jobs. Among these four, the high occupational stress supposed more common in the high-strain jobs.

Mental and emotional health problems of employees will lead to absenteeism and decreased productivity that in turn affect employers. Employers may be able to improve productivity in the workplace by promoting the mental health of their employees. Mental health is viewed as the ability to adjust to new situations and to handle personal problems without marked distress and still have enough energy to be a constructive member of society. Mental health is also defined as the feelings of someone toward oneself, world, life location and surrounding

people, our responsibility to others, how to cope the income and time/place recognition (Levinson *et al.*, 1962). Karl Menninger defined mental health as someone's adaptation to his/her around world in the best possible choice so that it causes his/her happiness as well as a useful and efficient perception. It is obvious that the work environment plays pivotal role in the employee well-being, specifically, the mental health of employees.

A study investigated the impact of job stressors on well-being from the perspective of person environment fit among a 288 case sample from six organizations and found that the actual and preferred career advancement themselves and their second-order combinations jointly predicted job satisfaction, mental well-being and turnover intention. Also, the actual and preferred quality of relationships at work and their second-order combinations jointly predicted job satisfaction, mental and physical well-being and turnover intention (Yang *et al.*, 2008).

Another study aimed to identify stress source among university academic staff. The sample consists of 279 (168 males and 111 females) academic staff. The result showed that career development is the greatest source of stress to academic staff. The results also indicated that male and female academic differed in perceived stress level in teaching (Archibong *et al.*, 2010).

Ajay and coauthor's investigated the mediating impact of organizational commitment on the relationship between organizational stressors and employee health and well-being among 401 operator level employees

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working in business process outsourcing organizations based in New Delhi, India. It is revealed from the results that the mediation analysis highlights both employee commitment to their organization and their perceptions of the organization's commitment to them mediate the impact of stressors on physical health and psychological well-being.

A study investigated the relationship between job performance and employees' mental health in one of Iranian natural gas refinery and concluded that there was a significant relationship between employees' job performance and mental health. Any increase in mental health aspects promotes job performance and low mental health level among employees can reduce job performance (Ahmadi *et al.*, 2012).

MATERIALS AND METHODS

Research design and methodology: This study makes use of responses to a questionnaire survey conducted among nurses working in private hospitals in Coimbatore Region of Tamil Nadu, India. The research design for this study is a correlation study and a simple random sampling method is utilized. A total of 320 questionnaires were distributed and only 209 responses have been received and analyzed which represented a 65.31% response rate.

Measures and analysis of data: Items included in the "Occupational Stress Survey" are selected after a review of the literature. A self-report measure based on the ASSET questionnaire was used to collect the data. The primary variables of interest were organizational stressors, employee attitudes towards the organization and employee health. The organizational stressors measure comprised of 37 items including possible sources of work, home and social stress and consists of 8 factors: Work Relationships (WR, $\alpha = 0.85$), Your Job (YJ, $\alpha = 0.61$), Overload (OL, $\alpha = 0.81$), Control (CL, $\alpha = 0.75$), Job Security (JS, $\alpha = 0.72$), Resource and Communication (RC, $\alpha = 0.76$), Work-Life Balance (WLB, $\alpha = 0.61$) and Pay and benefits which is a single item scale. The instrument has tested through pilot study on a small group of nurses.

The measure for mental health used in this study is adapted from Warr's Mental Health Measures. The same instrument with modifications which consists of 24 items with three dimensions viz., work competence, work aspiration and work environment have been adapted. Respondents have been asked to indicate their agreement or disagreement on each mental health question with anchors ranging from strongly disagree (1) to strongly agree (5) (Table 1).

Table 1: Years of experience of the nurses

Respondents profile	Total No. of respondents	Respondents (%)
Age (years)		
<30	123	58.90
30-45	86	41.10
Marital status		
Married	137	65.55
Unmarried	72	34.45

Table 2: Respondents profile

Age (years)	Total No. of respondents	Respondents (%)
<3	72	34.5
3-5	103	49.3
>5	34	16.2

Findings and analysis: The demographic and other personal background information of the respondents was presented in the Table 2. Majority of respondents belong to the young age category (<30 year 58.9%) and 86 respondents belong to middle age category (30-45) year (41.1%). The majority of the respondents (65.55%) belong to married category. The majority of the respondents (49.3%) have 3-5 year of experience.

Age and level of stress: It is believed that aged people are astute thinkers and they could able to analyze things in a divergent style and able are manage themselves in a stressful environment. For the purpose of the study age of the respondent has been classified into 2 categories viz., young age (<30 year) and middle age (30-45 year). The sample consists 123 (58.9%) respondents of young age category and the remaining 86 (41.1%) were middle age category. The distribution of sample respondents according to age and their level of stress are shown in the following Table 3.

It could be seen from Table 3 that the level of stress perceived by the young age respondents ranged between 34 and 41 with an average of 37.0% similarly, the middle age respondents express their level of stress ranged between 33 and 42 with an average of 38.1. From the analysis, it is concluded that the middle aged respondents have perceived maximum level of stress. With the view to find the degree of association between age of the respondents and their level of stress, a two-way table was prepared and is depicted in Table 3.

It is highlighted from Table 4 that the percentage of high level of stress perceived was the highest (67.5%) among the middle aged respondents and the same was the lowest (46.5%) among the young aged respondents. The percentage of medium level of stress was the highest (21.9%) among the young age respondents and the same was the lowest (20.9%) among middle aged respondents. On the other hand, the percentage of low level of stress

Table 3: Age and level of stress

Age	No. of respondents	Percentage	Average	Range		
				Min	Max	SD
Young age (<30 year)	123	58.9	37.0	34	41	1.9
Middle age (30-45 year)	86	41.1	38.1	33	42	1.5
Total	209	100.0	-	-	-	-

Table 4: Age and level of stress (two-way table)

Age	Level of stress			Total
	Low	Medium	High	
Young age (<30 year)	32 (26)	27 (21.9)	64 (52.1)	123
Middle age (30-45 year)	10 (11.6)	18 (20.9)	58 (67.5)	86
Total	42	45	122	209

Table 5: Age and level of stress (χ^2 test)

Factors	Calculated χ^2 value	Table value	df	Remarks
Age	27.253	5.991	2	Sig. at 5% level

was the highest (26%) among young age respondents and the same was lowest (11.6%) among the middle agerespondents.In order to find the relationship between the age of the respondents and their level of stress, a chi-square test was used and the result of the test is shown in the following Table 5.

It is highlighted from the above table that the calculated chi-square value is greater than the table value and result is significant at 5% level. Hence, the hypothesis "Age of the respondents and their level of stress" are associated holds good. From the analysis, it is concluded that there is a close relationship between age of the respondents and their level of stress.

Marital status and level of stress: For the purpose of the study marital status of the respondents has been classified into 2 categories viz., married and unmarried. The sample consists of 83 (42.1%) respondents belong to married category and 114 (57.9%) respondents belong to unmarried category. The distribution of sample respondents according to marital status and their level of stress in balancing work and life are shown in the Table 6.

It is apparent from the table that the level of stress perceived by the nurses of married category ranged between 33 and 43 with an average of 37.2. The level of stress perceived by unmarried nurses ranged between 35 and 41 with an average of 38.6. From the analysis, it is concluded that the married nurses have perceived maximum level of stress. With the view to find the degree of association between marital status of the respondents and their level of stress, a two-way table was prepared and is depicted in Table 7.

It is highlighted from Table 7 that the percentage of high level of stress perceived was the highest (55.5) among the respondents of married category and the same

Table 6: Marital status and level of stress

Marital status	No. of respondents	Percentage	Average	Range			SD
				Min	Max		
Married	137	65.55	37.2	33	43		1.7
Unmarried	72	34.45	38.6	35	42		1.5
Total	209	100.00	-	-	-	-	-

Table 7: Marital status and level of stress (two-way table)

Marital status	Level of stress			Total
	Low	Medium	High	
Married	26 (19.0)	35 (25.5)	76 (55.5)	137
Unmarried	20 (27.8)	37 (51.4)	15 (20.8)	72
Total	46	72	91	209

Table 8: Marital status and level of stress (χ^2 test)

Factors	Calculated χ^2 value	Table value	df	Remarks
Marital status	15.400	9.488	4	Sig. at 5% level

was the lowest (20.8%) among the unmarried category. The percentage of medium level of stress was highest (51.4%) among the respondents of unmarried category and the same was the lowest (25.5%) among the married category of respondents. Similarly, the percentage of low level of stress was the highest (27.8%) among the respondents of unmarried category and the same was the lowest (19.0%) among the married category of respondents. In order to find the relationship between the marital status of the respondent and their level of stress, a chi-square test was used and the result of the test is shown in the following Table 8.

It is highlighted from Table 8 that the calculated chi-square value is greater than the table value and result is significant at 5% level. Hence, the hypothesis "Marital status of the respondents and their level of stress" are associated holds good. From the analysis, it is concluded that there is a close relationship between marital status of the respondents and their level of stress.

Spouse employment status and level of stress: For the purpose of the study spouse employment status of the nurses has been classified into 2 categories viz., employed spouse and unemployed spouse. The sample consists of 92 (67.1%) nurses whose spouses were employed and 45 (32.9%) respondents belong to unemployed spouse category. The distribution of sample respondents according to spouse employment status and their level of stress are shown in Table 9.

Table 9: Spouse employment status and level of stress

Spouse employment status	No. of respondents	Percentage	Average	Range Min	Max	SD
Employed	92	67.1	37.7	34	40	1.7
Unemployed	45	32.9	38.1	35	42	1.6
Total	137	100.0	-	-	-	-

Table 10: Spouse employment status and level of stress (two-way table)

Spouse employment status	Level of stress Low	Medium	High	Total
Employed	12 (13.1)	21 (22.8)	59 (64.1)	92
Unemployed	20 (44.4)	16 (35.6)	9 (20.0)	45
Total	32	37	68	137

It is evident from Table 9 that the level of stress perceived by the respondents of employed spouse category ranged between 34 and 40 with an average of 37.7. The level of stress perceived by respondents of unemployed spouse category ranged between 35 and 42 with an average of 38.1. From the analysis, it is concluded that the respondents of employed spouse category have perceived maximum level of stress. With the view to find the degree of association between spouse employment status of the nurses and their level of stress, a two-way table was prepared and is depicted in Table 10.

It is highlighted from Table 10 that the percentage of high level of stress perceived was the highest (64.1) among the employed spouse category. The percentage of medium level of stress was highest (35.6%) among the respondents of unemployed spouse category and the same was the lowest (22.8%) among the employed spouse category of respondents. Similarly the percentage of low level of stress was the highest (44.4%) among the respondents of unemployed spouse category and the same was the lowest (13.1%) among the employed spouse category of respondents. In order to find the relationship between the spouse employment status of the respondent and their level of stress, a chi-square test was used and the result of the test is shown in the following Table 11.

It is highlighted from Table 11 that the calculated chi-square value is greater than the table value and result is significant at 5% level. Hence, the hypothesis "Spouse employment status of the respondents and their level of stress" are associated holds good. From the analysis, it is concluded that there is a close relationship between spouse employment status of the respondents and their level of stress.

Impact of occupational stress on mental health: To analyse the impact of occupational stress on mental health a multiple regression analysis has been done. Table 2 exhibits the results of regression analyses of

Table 11: Spouse employment status and level of stress (χ^2 test)

Factors	Calculated χ^2 value	Table value	df	Remarks
Spouse employment status	8.052	5.991	2	Sig. at 5% level

occupational stress on the four dimensions of mental health among the nurses. The fitted regression model is given in Eq. 1:

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 + b_7 x_7 + b_8 x_8 + e \quad (1)$$

Where:
Y = The score on mental health among nurses
x_{1-8} = The perception on occupational stress variables among nurses

The occupational stress such as work relationships, job itself, control, over load, job security, resource and communication, work-life significant and positive relationship with mental health (Table 12).

Impact of occupational stress on work competence: It is understood that the occupational stress variables significantly and positively influencing work competence dimension of mental health among the nurses. The variables such as work relationships (β = 0.1874), job itself (β = 0.2327), control (β = 0.1216), over load (β = 0.1926), job security (β = 0.1423), resource and Communication (β = 0.1902) and work-life balance (β = 0.1904) are significantly influencing as their regression coefficients were significant at 5% level. Unit increases in the perception on the above occupational variables result in an increase in mental health among nurses by 0.1874, 0.2327, 0.1216, 0.1926, 0.1423, 0.1902 and 0.1904 units respectively. The changes in the perception of occupational variables explain the changes in mental health of nurses to the extent of 82.23% (R^2 = 0.8223, F = 12.0619).

Impact of occupational stress on work aspiration: It is observed from Table 12 that the occupational variables significantly influencing work aspiration dimension of mental health among the respondents. The variables such as Work Relationships (β = 0.1767), Job itself (β = 0.2743) control (β = 0.1512), over load (β = 0.1818), job security (β = 0.1489), work-life balance (β = 0.1673) and pay and benefits (β = 0.1423) are significantly influencing as their regression coefficients were significant at 5% level. A unit increase in the perception on the above occupational variables results in an increase in mental health among nurses by 0.1767, 0.2334, 0.1512, 0.1818, 0.1489, 0.1673 and 0.1423 units, respectively. The changes in the perception of occupational variables explain the changes in mental health of nurses to the extent of 72.35% (R^2 = 0.7235, F = 8.068).

Table 12: Occuptional stress

Occupational stress	Regression coefficients		
	Work competence	Work aspiration	Work environment
Work relationships	0.1874*	0.1767*	0.1664*
Job It self	0.2327*	0.2334*	0.2743*
Control	0.1216*	0.1512*	0.1864*
Overload	0.1926*	0.1818*	0.2034*
Job security	0.1423*	0.1489*	0.1029
Resource and communication	0.1902*	0.1017	0.1818*
Work-life balance	0.1904*	0.1673*	0.1408*
Pay and benefits	0.0996	0.1423*	0.1022
Constant	0.8706	0.7339	0.6219
R^2	0.8223	0.7235	0.8143

*Significant at 5% level

Impact of occupational stress on work environment:
From the Table 2, it is highlighted that the QWL variables significantly influencing work environment dimension of mental health among the teaching professionals. The variables such as work relationships (β = 0.1664), job itself (β = 0.2743), control (β = 0.1864), over load (β = 0.2034), resource and communication (β = 0.1818) and work-life balance (β = 0.1408) are significantly influencing as their regression coefficients were significant at 5% level. A unit increase in the perception on the above occupational variables results in an increase in mental health among nurses by 0.1664, 0.2743, 0.1864, 0.2034, 0.1818 and 0.0.1408 units, respectively. The changes in the perception of occupational variables explain the changes in mental health of nurses to the extent of 82.23% (R^2 = 0.8143, F = 11.1244).

CONCLUSION

This study makes important theoretical contributions to the existing literature. This study supported the eight dimension model of occupational stress among nurses. Another important contribution is the dimensions of mental health such as work competence, work aspiration and work environment. This study investigated the level of occupational stress and mental health and also the relationship between occupational stress and mental health amongst nurses in Coimbatore District, Tamil Nadu, It is disclosed from the study that the mental health of nurses were moderate. The results of the regression analysis confirmed that except pay and benefits all other variables have been indicated by the respondents as significant predictors to work competence dimension of mental health. Likewise, except resource and communication all other variables have a positive relationship with the work aspiration dimension of mental health. It is also understood that except job security and pay and benefits all other variables having significant and positive relationship with work environment dimension of

mental health. It is obvious from these findings that there is a relationship between occupational stress and the three dimensions of mental health. Although, it revealed that there exists a relationship between occupational stress and mental health of nurses, it is not generalized as the research focused only a district of the state.

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