Code Blue-Stress among Nurses in a Teaching Hospital and its Effects on Healthcare Delivery

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Abstract: This study assessed the relationship between occupational stress amongst nurses and healthcare delivery at the Lagos State University Teaching Hospital. Occupational stress amongst nurses is prevalent and can have adverse effects on job performance, consequently compromising healthcare delivery. Questionnaires were administered to one hundred and thirty seven registered nurses who were previously identified to partake in the study. Analysis of Variance (ANOVA) was used to analyse the data with sun of squares = 23.115, $F = 15.583$ and $p = 0.000$; results show significant relationship between occupational stress and low job performance. The study recommends training initiatives and advocates organizational support policies.

Key words: Stress, job performance, nurses, healthcare delivery, management support

INTRODUCTION

Stress among nurses is a prevalent problem that contributes to health complications and decreases their efficiency (Kane, 2009). Nurses received training to deal with stress; nonetheless prolonged stress takesatoll when there are additional stress issues from home, conflict at work, insufficient staffing, poor teamwork, poor training and supervision which is acknowledged to cause emotional fatigue in nurses and can lead to negative feelings toward those in their care (patients) (Cottrell, 2001).

Stress is an occupational hazard for the modern-day employee. It is the result of the stimulation of an individual's physical and psychological states based on demands and expectations. Lunenburg and Ornstein (2011) state that stress is the effect of opportunities involving uncertainties as well as important outcomes. The stress reaction can be attributed to diverse stressors which could either be internal or external. A high level of stress isusually experienced in situations that are tasking, distressing, frightening or exciting. It is characterised by various observable behaviours such as increase in pulse, heartbeat or blood pressure. Stress can lead to health challenges, it can affect human relations and impact negatively on human performance (Luthans, 1992).

According to Luthans (1992), about 90% of patients' complaints are stress-related. Decreased levels of stress in employees will significantly reduce employee behaviours that affect performance adversely such as absenteeism, turnover, reduced productivity and grievances. Stress can be categorized as emotional,

physical and mental symptoms. Workplace stress can be attributed to various factors. Potential stressors for employees include job demands, role ambiguity, work/family conflict, job insecurity, inequities, ambiguous processes, safety hazards, poor communication and poor interpersonal relations, amongst many other factors. The prevalence of workplace stress has necessitated stress management which refers to the development and deployment of interventions intended to decrease the effect of stressors particularly in the workplace.

Literature review: Job stress is a class of stress that has become an epidemic all over the world. Lambert *et al.* (2003) state that stress occurs when an individual's workload does not equal the ability of the work to be done, causing the individual to break down when attempting to meet job expectations. Clegg (2001) defines stress as any force that pushes a person or individual beyond his or her range of ability, causing strain within their psychological and physical wellbeing. According to Pel *et al.* (2010), the major reactions to stress includes tension, inability to concentrate and irritability. It is the psychological tension that results from exposure to organizational stressors within the workplace environment. Cooper and Palmer (2000) posits that an appropriate amount of stress is needful to motivate employee performance. However, high levels of stress could potentially hamper the quality of work. A global survey revealed that within the workplace, women are more prone to higher levels of stress that men.

With the nursing profession, stress is a major problem worldwide as a result of the peculiar nature and

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demands of the profession. For instance, results of a study conducted in Switzerland showed that a high percentage of nurses were highly stressed (Petterson *et al.*, 1995). A similar study in the United Kingdom revealed that amongst all health care personnel, nurses were the most stressed or pressured (Rees and Cooper, 1992). This implies that nurses are confronted daily with a variety of stress-inducing tasks and situation. Other studies have also stated the stressful nature of the nursing profession stress and its effect in patient care settings (Eleni and Theodore, 2010). According to literature, factors that may result in stress particularly within the workplace include, understaffing; poor working conditions (Gray-Toft and Anderson, 1981); poor interpersonal relationships; lack of management support (Blair and Littlewood, 1995); role characteristics Kahn *et al.* (1964) and individual characteristics (McGrath *et al.*, 2003). In the light of these factors, patient care can be affected by personal factors, physical environment and organizational factors.

People respond to stress differently. However, stress can have negative effects on an individual's mental and physical wellbeing (Oyewunmi *et al.*, 2015a). Stress could manifest in the following ways; irritability poor focus or loss of concentration impaired reasoning decreased commitment tiredness and depression sleeplessness. Stress in the workplace will ultimately affect the performance, competitive advantage and survival of any organization (Leka *et al.*, 2004). This is because, high levels of stress amongst employees could potentially lead to absenteeism employee turnover poor performance damage to corporate image, amongst other factors.

The literature on stress is underpinned by three major approaches. These are approach to systematic stress (Selye, 1984); approach to psychological stress (Lazarus, 1991; McGrath *et al.*, 2003; Lazarus, 1966) and resource theories of stress. Selye (1984) popularized the concept of stress in the field of physiology. He theorized that the manifestation of stress is characterized by changes in the biological state. Lazarus (1966) theory of stress perceives stress as a consequence of the relationship between man and his environment. This implies that, the ability or inability of an individual to adapt or cope with dynamics of the environment determines the occurrence psychological stress (Lazarus and Folkman, 1984). The resource theories of stress is preoccupied with the strategies or coping mechanisms for the preservation of wellbeing in a stressful situation.

MATERIALS AND METHODS

Statement of problem: Healthcare workers in the Nigerian context work in an environment that is plagued by multiple challenges such as inadequate funding, bureaucratic red tape, infrastructural deficit, brain drain, favouritism, lack of accountability, power tussle amongst health workers, amongst many other issues. These challenges have over the years militated against the optimization of human and material resources in the Nigerian public healthcare sector (Oyewunmi *et al.*, 2015b). Also, these problems have potential impact on the physiological and psychological wellbeing of employees and the ultimately performance within the workplace. The focus of this study is to investigate the factors associated with stress amongst nurses, to identify causes, to examining the effects on patients' healthcare and provide possible solutions for the Nigerian public healthcare context. The study is also targeted at providing useful information to support other scholars who may be interested in researching the subject of stress. It is hoped that the study will be useful for healthcare organizations in creating a supportive environment to enable nurses provide quality healthcare to their clients.

To investigate the impact of workplace stress on nurses and its effect on patients' care, the Lagos State University Teaching Hospital (LASUTH) was selected for the study. Using the survey method, questionnaire were administered to one hundred and thirty seven professional nurses within the healthcare institution. The following hypotheses were tested:

- H_{01}: understaffing does not have any impact on patient welfare
- H_{02}: job monotony will not affect nurse's relationship with patient's family
- H_{03}: nurses working condition does not affect patient's safety
- H_{04}: lack of effective Interpersonal communication does not always disrupt service quality

RESULTS AND DISCUSSION

Data analyses: Table 1 below indicates the characteristics of respondents in terms of gender, age, marital status, working experience, specialization and position in the hospital.

From Table 1, 112 (81.8%) of the respondent are females while 25 (18.2%) are male. Table 1, also indicates that 54 (39.4%) of the respondent are within the age bracket of 41-50, 40 (29.2%) are within the age bracket of 51 and above 29 (21.2%) are within the age bracket of 31-40 and 14 (10.2%) are between the age bracket of 21-30. The marital status of shows that 109 (79.6%) are married, 16 (11.7%) are single, 9 (6.6%) are widowed and

Table 1: Characteristics of respondents

Parameters	Frequency	Percent	Valid (%)	Cumulative (%)
Gender				
Valid male	25	18.2	18.2	18.2
Female	112	81.8	81.8	100.0
Age group				
21-30	14	10.2	10.2	10.2
31-40	29	21.2	21.2	31.4
41-50	54	39.4	39.4	70.8
51+	40	29.2	29.2	100.0
Marital status				
Single	16	11.7	11.7	11.7
Married	109	79.6	79.6	91.2
Divorced	3	2.2	2.2	93.4
Widow	9	6.6	6.6	100.0
Work experience				
0-9	21	15.3	15.3	15.3
10-19	46	33.6	33.6	48.9
20-39	64	46.7	46.7	95.6
40+	6	4.4	4.4	100.0
Specialization				
General nursing	54	39.4	39.4	39.4
Midwifery	29	21.2	21.2	60.6
Theatre nursing	13	9.5	9.5	70.1
Others	41	29.9	29.9	100.0
Rank				
Matron	47	34.3	34.3	34.3
Nursing sisters	25	18.2	18.2	52.6
Mid wife	20	14.6	14.6	67.2
Others	45	32.8	32.8	100.0

Table 2: Model summary

Models	R	R^2	Adjusted R	SE of estimate
1	0.666[a]	0.444	0.427	0.500

Predictors: (constant), In my place of work, I am always faced with more patients to cater for

3 (2.2%) are divorced. The length of service indicates that 64 (46.7%) of the respondents have been in the profession for 20-39 years, 46 (33.6%) for 10-19 year, 21 (15.3%) for 0-9 years and 6 (4.4%) of the respondents have been in the profession for 40 years and above. The analysis of areas of nursing specializations shows that 54 (39.4%) of the respondent are t in general nursing, 41 (29.9%) specialized in other areas, 29 (21.2%) specialised in midwifery while 13 (9.5%) of the respondents are in theatre nursing. Ranking status indicates that 47 (34.3%) of the respondents are matrons in the hospital, 45 (32.8%) of the respondents occupy other position, 25 (18.2%) are nursing sister and 20 (14.6%) of the respondents are midwifes:

- H_1; H_{01}: understaffing does not have any impact on patients' welfare

In the model summary Table 2, R^2 of 0.444 specifies that 44.4% of disparity in Y is explicated by the disparity in the independent variables. The percentage is

Table 3: ANOVA

Models	Sum of squares	df	Mean square	F	Sig.
Regression	26.060	4	6.515	26.102	0.000[a]
Residual	32.697	131	0.250		
Total	58.757	135			

a; Predictors (constant) in my place of work, I am always faced with more patients than I can cater for.

appropriate in deciding the goodness of fit. Considering the number of predictor variables in the model, adjusted R^2 generated a 42.7% variation which is moderately significant in this analysis.

The ANOVA Table 3 indicates the assessment of the statistical significance (Sig = 0.000) in which the F-value = 26.102 ≤0.05, therefore the null hypothesis is rejected. Table 4 seeks to explain which of the variables is making a statistically significant unique contribution to the model looking at the sig column in the Table 4.

Decision: Based on the analysis above for which all calculated values are above the critical values, the null Hypothesis (H_{01}) is rejected whilst the alternative Hypothesis (H_{a1}) is accepted:

- H_2; H_{02}: job monotony will not affect nurses' relationship with patients' family

Interpretation: The relationship between the variables job monotony and patient family was examinedby means of the Pearson correlation coefficient. The outcomes from table above show that there is a significant positive correlation of (0.344) between both variables at 0.01 level of significance. Thus, as obtained from Table 5 r = 0.344, p<0.05, n = 120.

Decision rule: Since, there is a positive relationship between the two variables, the null Hypothesis (H_0) is rejected and the alternate Hypothesis is accepted (H_1). This implies that job monotony affects nurses' relationship with patients' families.

- H_3; H_{03}: nurses' working condition does not affect patients' safety

In the model summary Table 6, R^2 of 0.444 specifies that 44.4% of disparity in Y is explicated by the disparity in the independent variables. The percentage is appropriate in deciding the goodness of fit. Considering the number of predictor variables in the model, adjusted R^2 generated a 42.7% variation which is moderately significant in this analysis.

Table 4: Coefficients

Models	Unstandardized coefficients		Standardized coefficients		
	B	SE	B	t	Sig.
Due to shortage of nurses,I often attend to too many patients	1.625	0.472		3.444	0.001
in my place of work, we are understaffed	0.015	0.035	0.029	0.432	0.667
understaffing always lead to poor performance by nurses	0.561	0.057	0.653	9.782	0.000
patients are the number one priority in the	.005	0.042	0.008	0.115	0.908
hospital where I work (constant)	0.071	0.081	0.057	0.866	0.388

Dependent variable: In my place of work, I am always faced with more patients than I can cater for

Table 5: The relationship between the variables job monotony and patient family

Correlations	Varieties in nurses discharging their duty will lead to patient family outburst	Abuses from patient family creates problem for the nurses
Pearson correlation	1	0.344**
Sig. (2-tailed)		0.000
N	137	137
Person correlation	0.344**	1
Sig. (2-tailed)	0.000	
N	137	137

Correlation is significant at 0.01(2 tailed)

Table 6: Model summary

Models	R	R^2	Adjusted R^2	SE of the estimate
1	0.510[a]	0.260	0.243	0.703

a; The predictors (constant); patient safety is largely dependent on hospital resources such as human resources and equipment

Table 7: ANOVA model

Models	Sum of squares	df	Mean square	F	Sig.
Regression	23.115	3	7.705	15.583	0.000[b]
Residual	65.761	133	0.494		
Total	88.876	136			

b; predictors (constant); patient safety is largely dependent on hospital resources

In the summary Table 6, R^2 of 0.260 specifies that 26% of disparity in Y is explicated by the disparity in the independent variables. This percentage is appropriate in deciding the goodness of fit for the model (regression equation). Considering the number of predictor variables in the model, adjusted R^2 generated a 24.3% variation which is moderately significant in this analysis.

The ANOVA Table 7 indicates the assessment of the statistical significance (Sig. = 0.000) in which the F-value = 15.583 and ≤0.05. Therefore, the null hypothesis is rejected. Table 8 seeks to explain which of the variables makes a statistically significant contribution to the model looking at the Sig. column in Table 8.

Decision: Based on the analysis above, all calculated values are above the critical values. The null Hypothesis (H_{03}) is rejected while the alternative Hypothesis (H_{a3}) is accepted.

Table 8: Coefficients

Models	Coefficients				
	Unstandardized		Standardized		
	B	SE	Beta	t	Sig.
Lack of adequate facilities	1.296	0.607	-	2.136	0.035
slows down health care delivery	0.205	0.132	0.122	1.555	0.122
working conditions affect the	0.101	0.048	0.162	2.091	0.038
patients' safety in the hospital	0.394	0.079	0.392	4.954	0.000
where I work the outcome of patient welfare is largely determined by the ability of the hospital to manage its resources effectively (constant)					

Dependent variable: patient safety is largely dependent on hospital resources

Table 9: Model summary

Models	R	R^2	Adjusted R^2	SE of the estimate
1	0.400[a]	0.160	0.135	0.849

Table 10: ANOVA

Models	Sum of squares	df	Mean square	F	Sig.
Regression	18.165	4	4.541	6.303	0.000[b]
Residual	95.105	132	0.720		
Total	113.270	136			

Predictor (constant); lack of cooperation from patients cause nurses frustration in service delivery

- H_4; H_{04}: lack of effective interpersonal communication does not disrupt service quality

In the model summary Table 9, R^2 of 0.160 specifies that 16% of disparity in Y is explicated by the disparity in the independent variables. This percentage is appropriate in deciding the fit for the model (regression equation). Considering the number of predictor variables in the model, adjusted R^2 generated a 13.5% variation which is moderately significant in this analysis.

The ANOVA Table 10 indicates the assessment of the statistical significance (Sig. = 0.000) in which the F-value = 6.303 and ≤0.05. Therefore, the null hypothesis is rejected.

Table 11 seeks to explain which of the variables is making a statistically significant contribution to the model looking at the sig column in the Table 11.

Table 11: Coefficients

Models	Unstandardized Coefficients		Standardized Coefficients		
	B	SE	Beta	t	Sig.
I have effective communication with my patients	3.966	0.616		6.442	0.000
Workload of nurses could hinder interpersonal relationship with patients	-0.108	0.108	-0.081	-1.002	0.318
Management encourages us to have better relationship with patients	0.043	0.074	0.048	0.587	0.558
Ethnicity and personality differences causes problem between nurses and patients	-0.090	0.058	-0.127	-1.562	0.121
(constant)	0.226	0.055	0.337	4.093	0.000

Dependent variable: lack of cooperation from patients causes nurses frustration in service delivery

Decision: Based on the analysis above for which all calculated values are above the critical values, the null Hypothesis (H_{04}) is rejected whilst the alternate Hypothesis (H_{a4}) is accepted. The analyses above revealed the following results:

- Understaffing has an impact on patient welfare
- Job monotony will affect nurse's relationship with patient family
- Nurse working condition does not affect patient safety outcomes
- Lack of effective interpersonal relationship disrupt service quality

CONCLUSION

The study reveals that understaffing has an effect on patient welfare. Hence, healthcare institutions must ensure that adequate staffing to facilitate patient care. Luthans (1992) asserts that patient welfare will improve if the problem of understaffing is resolved. Also, results show that job monotony affects nurses' relationship with patient family. When nurses perform the same tasks repetitively, it could lead to boredom at work and affect interactions within the workplace. Respondents agreed that working conditions affect patient safety outcomes. Robbins (2001) states that factors that affect patient safety outcomes include, working conditions of the healthcare institutionin terms of its ability to effectively manage it resources. Finally, the research shows that poor interpersonal communication will disrupt service quality.

RECOMMENDATIONS

The dynamic nature of the nursing profession makes it impossible to completely eradicate stress, it can however be controlled or managed. Healthcare institutions must ensure that workplace policies that promote stress management are designed and implemented. There must also be regular appraisals of these policies so as to improve service quality and reduce negative patient outcomes. This will be advantageous for healthcare personnel, the healthcare organization and other stakeholders. It is suggested that further studies in the area of stress amongst healthcare workers could be conducted within private and public healthcare institutions to investigate possible disparities in work-place stress and effects on performance outcomes.

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