Annals of Health Research
Volume 4, Issue No 1: 34-42
January-June 2018
DOI: 10.30442/ahr.0401-1-05

ORIGINAL RESEARCH

Prevalence and correlates of subjective traumatic distress among Emergency Department Nurses in Lagos, Nigeria

Coker AO*[1], Coker OO[2], Oladipupo T[3], Adesope F[3], Alonge OA[4]

[1]Department of Behavioural Medicine, Lagos State University College of Medicine, Ikeja, Lagos, Nigeria
[2]Medical Department, University of Lagos Medical Centre, University of Lagos, Akoka, Lagos, Nigeria
[3]Department of Nursing, Lagos State University College of Medicine, Ikeja, Lagos, Nigeria
[4]Department of Psychiatry, Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria

*Correspondence: Dr. AO Coker, Department of Behavioural Medicine,
Lagos State University College of Medicine,
Ikeja, Lagos, Nigeria. Tel: 2348033267544; Email: cokerrotimi@gmail.com;
ORCID – http://orcid.org/0000-0002-4234-9775

Abstract

Background: The manifestations of subjective traumatic distress among emergency nurses in Nigeria have not been extensively studied.
Objective: To determine the prevalence and correlates of subjective traumatic distress among emergency department nurses in Lagos, Nigeria.
Methods: One hundred nurses working in the Emergency Department of the Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria, were surveyed for the impact of subjective traumatic distress using the Revised Impact of Event Scale. The sociodemographic characteristics and some work-related factors were also determined.
Results: Of the 100 participants, 60 (60%) met the criteria for the impact of subjective traumatic distress. The overall mean score of the participants for the IESR was 27.9 ± 6.7 with a range of 0 to 66. The most frequent symptoms of subjective trauma distress sub-scale included avoidance symptoms, (mean: 12.2± 9.1; range 0-28) intrusion symptoms (mean: 7.3 ± 3.8; range 0-20) and hyperarousal symptoms (mean: 5.3 ± 1.6; range 0-17). Female participants had higher exposures in the sub-scales of the IESR scores. The associations between sociodemographic parameters such as age, gender and marital status and the subscales of the IESR were not significant.
Conclusion: The study showed that more than half of the participants experienced subjective psychological traumatic distress. There is a need for hospital managers to provide psychological interventions regularly for emergency department nurses to prevent occurrence of psychopathologies such as burnout and posttraumatic stress disorders.

Key words: Emergency department, Hyperarousal, Lagos, Nurses, Subjective distress.

Introduction

The hospital setting has been severally reported to be physically and emotionally demanding for its workforce due to the variety of patients with severe health conditions and their expectations for quick resolution of their health challenges. [1-3] Emergency department nurses are the front line hospital personnel trained to receive patients with various types of severe illnesses, especially injuries sustained from road traffic accidents, bombings, violent communal clashes and gunshots. [1-3] Due to the nature of their job, nurses in the emergency department were observed to frequently encounter verbal and sexual abuse, physical threats and violent assaults from agitated patients and relations of patients. [3-6] For this reason, emergency department nurses were found to experience the highest rates of physical assaults and violence

when compared to other hospital professionals. [3-6] Empirical evidence showed that emergency department nurses experienced physical assaults, four times more than nurses in other departments within the hospital. [1, 2, 6, 7] Previous studies also indicated that between 30% and 63% of emergency department nurses experienced various types of verbal and physical harassments. [8-10] Likewise, physical violence was reported to be more predominant in medical, surgical geriatric and psychiatric emergency facilities. [10]

Medical literature also showed that emergency department nurses, who recurrently encounter physical and emotional assaults, were observed to develop symptoms of mental health disorders such as anxiety, depression, panic, sleep disturbances, irritability, short temper and acute post-traumatic stress disorder. [1, 3, 6, 11] Therefore, when emergency department nurses continuously experience psychological morbidity at the emergency departments and psychological interventions are not provided to ameliorate their emotional distress, the consequences could lead to job dissatisfaction, decreased feelings of safety, fear of future assaults, high turnover rate, leaving the nursing profession, absenteeism, litigation, decreased morale, deterioration of social and occupational functioning which may lead to low quality patient care. [1-4, 9-11]

Subjective emotional trauma has been reported to be common among nurses globally [10] and its high prevalence in the health sector could eventually affect health service delivery adversely. However, in Nigeria there are limited scientific studies on the magnitude of subjective traumatic distress among emergency department nurses. Therefore, it is necessary to investigate the situation of Nigerian emergency department nurses with respect to subjective psychological traumatic distress. This study was designed to determine the prevalence and correlates of subjective traumatic distress among emergency department nurses in Lagos, Nigeria. The findings of this study will add to the body of existing literature on subjective traumatic distress among Nigerian emergency department nurses.

Methods

Participants, Design and Setting

This study was a cross sectional survey using consecutive convenience sampling technique. The questionnaires were distributed to all the nurses working in the Medical and Surgical Emergency Departments of the Lagos State University Teaching Hospital (LASUTH), Ikeja, Lagos, in December 2016. The LASUTH, Ikeja, Lagos, Nigeria is a tertiary hospital that provides all grades of health care services to the citizens of Lagos State with an estimated population of about 18 million. Due to the unrestricted, walk-in government policy, there are no conditions for appointments or referrals to the Medical or Surgical Emergency Departments of the hospital.

Procedure

One hundred and twenty-five questionnaires were distributed to all the nurses working in the medical rooms (medical, surgical, obstetrics and gynecology and pediatrics). The questionnaires were retrieved one week later to give adequate time for filling the questionnaires. Those who did not return the questionnaires were reminded and given another one week to return the filled questionnaires. Of the total 125 invited participants, 100 submitted their questionnaires, making a response rate of 80%.

Ethical issues

Approval to carry out the study was obtained from the Research and Ethics Committee of LASUTH while written consents were also obtained from every study participant.

Measures

The participants completed a self-designed questionnaire consisting of two parts. The first part obtained data on the socio-demographic characteristics and work-related conditions. The second part contained the Impact of Event Scale-Revised. The Impact of Event Scale-Revised (IES-R) [12] is a self-report instrument that has 22 questions. The instrument measures the subjective response to a specific traumatic event in the adult population, especially in the response sets of (1) intrusion (intrusive thoughts, nightmares, intrusive feelings and imagery, dissociative-like re-experiencing), (2) avoidance (numbing of responsiveness, avoidance of feelings, situations, and ideas) and (3) hyper-arousal (anger, irritability, hyper-vigilance, difficulty concentrating, heightened startle).

The IESR is a broadly applicable self-report tool designed to assess current subjective distress for any specific life event. The respondents are requested to rate each item on a Likert scale of 0 to 4, (0 = not at all, 4 = extremely), with a higher score indicating a higher likelihood that the symptom is present in the respondent. The mean IES-R sub-scale scores were calculated for the intrusion, avoidance, and hyperarousal domains. The IESR yields a total score ranging from 0 to 88. The main strengths of this revised instrument include the short, easily administered and easily scored parameters, and its better correlation with the DMS-IV criteria for Post-traumatic Stress Disorder (PTSD). It is also useful for assessment of progress following intervention.

On the IES-R: the Intrusion sub-scale refers to the mean response for items 1, 2, 3, 6, 9, 14, 16 and 20 on the tool; the Avoidance sub-scale refers to the mean response for items 5, 7, 8, 11, 12, 13, 17 and 22 on the tool; the Hyperarousal sub-scale is the mean response for items 4, 10, 15, 18, 19 and 21on the instrument. The scores of the IESR range from 0 to 88; the interpretation of the scores is as follows; 0-8 = sub-clinical range (Normal Scores), 9-25 = Mild subjective distress, 26-43 = moderate subjective distress and score above 44 indicate severe subjective distress. However, the overall subjective distress cut-off value was put at 25. [12] A score above 25 indicated that the respondent was a high-risk for developing subjective psychological distress such as symptoms of avoidance, intrusion and hyperarousal. Scores above 33 indicated a probable diagnosis of PTSD. [12] The IES-R has been validated and used in some studies conducted in Nigeria. [13-14]

Statistical analysis

The data collected were analysed using the 24th version of the IBM Statistical Product and Service Solutions (IBM; SPSS, 24: Ill Chicago). Percentages, means and standard deviation of nominal variables were determined. The associations between age, gender, marital status and presence or absence of subjective psychological traumatic distress were tested using Chi-Square test. In all statistical analyses, *P values less than 0.05* indicated statistical significance.

Results

The age distribution of the participants showed that 24% were within the age group 21-30 years, 41% belonged to the 31-40 years group while the remaining 35% belonged to the 41-60 years group. The majority of the participants were females (87%) and married (87%). In terms of professional cadre, 22% of the participants were staff (junior) nurses, while 78% were senior nurses comprising 36% senior nursing officers, 26% principal nursing officers, 14% chief nursing officers and 2% assistant director of nursing. The years of experience of the nurses were as follows: 1- 5 years (17%), 6-10 years (40%), 11-15 years (11%), 16-20 years (13%) and 20 years and above (19%) as shown in Table I.

Ninety-seven percent were happy for being in the nursing profession. Sixty-nine percent claimed to have encountered physical or verbal threats or abuse within the last six months. Of the total

participants, 24% had been absent from duty once or twice within the last six months due to physical assault encountered in the emergency department while 21% confirmed the availability of psychological first-aid provided by the hospital management when they suffered assault in the course of duty at the emergency department. About 17% had actually received the professional psychological intervention in the past and 19% believed that working in the emergency department affected their occupants and social functioning. As shown in Table II, 22% had had to change jobs in the past due to occupational distress. In the assessment of the subjective psychological impact of traumatic distress, 60% of the emergency department nurses had scores above the cut-off value. Table III shows that the participants had a mean total IES-R score of 27.9 ± 6.7 with a range of 0-65. The most frequent symptom domain of subjective trauma sub-scale were avoidance symptoms (mean = 12.2 ± 9.1; range 0-28). Next were intrusion symptoms (mean =7.3 ± 3.8; range 0-20) and hyperarousal symptoms (mean = 5.3 ± 1.6; range 0-17).

Characteristics	*Frequencies*	*Percentages*
Age Group (Years)		
21 - 30	24	24.0
31 - 40	41	41.0
41 - 60	35	35.0
Sex		
Male	13	13.0
Female	87	87.0
Marital status		
Single	13	13.0
Married	87	87.0
Designation		
Staff Nurse	22	22.0
Senior Nursing Officer	36	36.0
Principal Nursing Officer	26	26.0
Chief Nursing Officer	14	14.0
Assistant Director	2	2.0
Years of experience (Range)		
1 - 5	17	17.0
6 - 10	40	40.0
11 - 15	11	11.0
16 - 20	13	13.0
>20	19	19.0

Table IV indicates there were no significant associations between socio-demographic characteristics and the various sub-scales of IES-R. Table V shows no statistically significant relationship between the age and years of experience of the participants and the sub-scales of IES-R. The correlations between IES-R scores with age and years of experience of the participants showed moderate to strong correlations as shown in Table VI.

Discussion

The findings of this study showed that 60% of the nurses working in the emergency departments in Lagos, Nigeria experienced subjective psychological traumatic distress in response to the assaults experienced in the workplace. Avoidance symptoms had the highest mean score followed by intrusion and hyperarousal symptoms respectively. These findings agreed with the earlier published results from other countries such as 54% in Korea, [10] 52% in Belgium. [12] The burden in the present study was lower than reports from other parts of the world such as 94% in Iran, [1] and 69% in Palestine [9] but higher than 35% reported in Israel. [17]

The possible reasons for the higher rates of emotional traumatic distress reported from Iran and Palestine could be attributed to the prolonged wars and strife in the Middle-East, especially in Iran and Palestine. Similarly, countries with lower rates of emotional traumatic distress might have provided some form of psychological interventions for the nurses who experienced psychological trauma while on duty at the emergency departments.

Table II: Experience of respondents on traumatic distress

Characteristics	*Frequencies*	*Percentages*
Are you happy being a nurse?		
Yes	97	97.0
No	3	3.0
Ever had physical/verbal attack in the last six months?		
Yes	69	69.0
No	31	31.0
Have you been absent from duty due to physical/verbal attack in the last six months?		
Yes	24	24.0
No	76	76.0
Have you ever received psychological first aid?		
Yes	21	21.0
No	79	79.0
Have you ever received professional psychological intervention?		
Yes	17	17.0
No	83	83.0
Has working in the ED affected your social and occupational functioning?		
Yes	19	19.0
No	81	81.0
Have you changed jobs in the past due to occupational distress?		
Yes	22	22.0
No	78	78.0

ED – Emergency Department

Table III: Prevalence of subjective traumatic distress and sub -scales of the Impact of Event Scale -Revised among the respondents

IES-R	*Frequencies (n)*	*Percentages*	*Mean*	*SD*	*Range*
Prevalence					
Subclinical IES-R Score	40	40.0			
Mild IES-R	5	5.0			
Moderate IES-R	50	50.0			
Severe IES-R	5	5.0			
Mean Scores					
Avoidance			12.2	9.8	0-28
Intrusion			7.4	3.8	0-20
Hyperarousal			5.3	1.7	0-17
Total			24.9	8.3	0-88

IESR = Impact of Events Scale-Revised; SD – Standard deviation

However, other factors were also documented to be responsible for the higher rates of subjective traumatic distress among the nurses in the emergency departments; these include communication and interpersonal relationship disputes with medical doctors and other emergency unit personnel. [13-15] Other organisational factors noted to be contributing to the experienced subjective traumatic distress of emergency department nurses include non-availability of security staff at the emergency departments, shortage of staff, lack of modern hospital equipment, poor quality leadership, professional rivalry and lack of teamwork among emergency department staff. [3, 4, 11-15] These identified factors may also contribute to the different prevalence rates obtained from different counties.

Regarding the factors possibly perpetuating traumatic distress among emergency department nurses, some of the contributory factors include frequent interactions with dying patients, witnessing sudden deaths, recurrent resuscitation of patients with serious medical conditions, handling victims of road traffic accidents, confrontation with burns patients, physical aggression and violence from relatives of patients, inability to save lives or deliver quality patient care and not being able to help chronically ill patients. [3, 4, 12-14] Overcrowding in the emergency rooms has also been associated with increased rate of subjective traumatic distress among emergency department nurses. Multitude of patients with serious medical conditions are expected to wait patiently for triage, nursing assessments and management before doctor's consultation.

Table IV: Relationship between socio -demographic and professional characteristics and subjective traumatic distress

Characteristics	*No subjective distress*	*Subjective distress present*	*Chi-Square*	*P*
Age group				
21-30	17	7	5.353	0.069
31-40	17	24		
>41	17	18		
Sex				
Male	5	8	0.940	0.332
Female	46	41		
Marital Status				
Single	10	3	4.018	0.045
Married	41	46		
Designation				
Staff Nurse	12	10	8.101	0.088
Senior Nursing Officer	24	12		
Principal Nursing Officer	10	16		
Chief Nursing Officer	4	10		
Others	1	1		
Years of experience				
1-5	9	8	4.44	0.349
6-10	24	16		
11-15	3	8		
16-20	7	6		
>20	8	11		

If attention is not immediately given to certain panicky patients in severe pain, they could be unnerved, restless, anxious, verbally aggressive and relatives of such patients may even physically assault the emergency department nurses. [3-6, 13-15] Despite experiencing regular psychological distress at the emergency departments, nurses are still expected to have empathy for every patient that presents at the emergency department. The altruistic attitude of emergency nurses may also make them vulnerable to occupational psychological morbidities. [1-3, 15-18]

In the light of these facts, emergency nurses who experience frequent occupational, psychological distress without appropriate psychological stress management and coping skills may become vulnerable to stress-related psychological distress and this may result in the development of negative or maladaptive coping skills such as dependence on alcohol and nicotine cigarettes. [2, 15-17] This study did not establish any association between socio-demographic characteristics and the sub-scales of IES-R. Similarly, there was no statistically significant association between the age and years of experience of the study participants. While some studies found significant associations between the parameters, others did not. [11, 15] Moderate correlations between IES-R and age and years of experience of nurses were also noted in some previous studies. [6, 15]

The findings in the present study also showed that 69% of the participants claimed to have been attacked, 24% claimed to have been absent from their duties because of the attack and a majority of the participants claimed not to have received any form of psychological intervention for their experienced psychological trauma. The implication of this finding is that hospital administrators may be oblivious of the need for regular psychological interventions for emergency department personnel. Studies have shown that when psychological intervention was provided for emergency department nurses by hospital administrators, the former felt supported by their hospital management and later reported better communication and interpersonal relationships with other emergency room nurses. [1-4, 17, 18]

Table V: Relationship between IES -R scores and the age an d years of experience of the respondents

IES-R Domains	Age-Groups (Years)			Years of experience				
	21-30	31-40	>41	1-5	6-10	11-15	16-20	>20
Intrusion								
Yes (n = 59)	16 (27.1)	23 (39.0)	20 (33.9)	9 (15.3)	29 (49.2)	5 (8.5)	6(10.1)	10 (16.9)
No (n = 41)	8 (19.5)	18 (43.9)	15 (36.6)	8 (19.5)	11(26.9)	6(14.6)	7(17.1)	9(21.9)
Statistics	$\chi^2 = 0.776$			$\chi^2 = 5.311$				
	$P = 0.678$			$P = 0.257$				
Avoidance								
Yes (n = 30)	11 (36.7)	12 (40.0)	7 (23.3)	6 (20.0)	17 (56.7)	1 (3.3)	3 (10.0)	3 (10.0)
No (n = 70)	13 (18.6)	29 (41.4)	28 (40.0)	11(15.6)	23 (32.9)	10 (14.3)	10 (14.3)	16 (22.9)
Statistics	$\chi^2 = 6.867$			$\chi^2 = 11.636$				
	$P = 0.143$			$P = 0.168$				
Hyperarousal								
Yes (n = 80)	19 (23.8)	33 (41.2)	28 (35.0)	14 (17.5)	33 (41.2)	8 (10.0)	9 (11.3)	16 (20.0)
No (n = 20)	5 (25.0)	8 (40.0)	7 (35.0)	3 (15.0)	7 (35.0)	3 (15.0)	4 (20.0)	3 (15.0)
Statistics	$\chi^2 = 0.017$			$\chi^2 = 1.732$				
	$P = 0.992$			$P = 0.785$				

Figures in parentheses are percentages of the total in each row

Table VI: Correlation of IES -R scores with age and years of experience of the respondents

Characteristics	*Age*	*Years of experience*	*Intrusion*	*Avoidance*	*Hyperarousal*
Age	1	0.07	0.510	0.021	0.098
Years of experience	0.07	1	0.280	0.015	0.775
Intrusion	0.510	0.280	1	0.012	0.579
Avoidance	0.021*	0.150	0.12	1	0.400
Hyperarousal	0.948	0.775	0.059	0.012	1

* Correlation is significant at the 0.05 level (2-tailed)

With reference to documented psychological intervention strategies for emotional and physical traumatic distress, some activities that have been identified as safeguarding factors include the acquisition of time and stress management skills, constant development of self-esteem, enhancement of personal development, inter-relationship and communication skills. [17-19] Wellness programs should also be made available within hospital premises to further encourage physical exercises as a form of occupational psychological distress management. Similarly, hospital authorities should regularly address the problems of nurse shortage which has been reported to increase the nurses' workload and turnover. [16,18-21]

The implication of persistent traumatic distress among emergency room nurses include lower quality of nursing care, development of anger and relationship issues with co-staff and family members while some nurses may eventually abandon the nursing profession. [16, 18-21] It is, therefore, necessary that hospital managers provide adequate security support, capacity building for stress management and psychological interventions for emergency room nurses. Scientific evidence indicates that regular psychological interventions are able to reduce occupational distress, improve quality patient care, and enhance communication skills among emergency room personnel. [22-26]

The limitations of this study include the use of self-administered instrument and the relatively small sample size, thus, the results of the study may not be applicable to the general population of nurses. However, this study has added to the body of knowledge on the impact of traumatic stress among Nigerian emergency room nurses. Future longitudinal and multi-centre studies on the impact of subjective traumatic events and post-traumatic stress disorder should be conducted to determine if there is a causal relationship between the impact of subjective distress, socio-demographic and work-related stressors. Similarly, the non-occupational predictors of subjective distress such as family issues and marital problems should be examined.

Conclusion

This study has demonstrated that nurses working in the emergency department experienced the subjective impact of traumatic events. It behooves hospital managers and policy makers to be aware of this and provide necessary psychological interventions for nurses who might have encountered physical and emotional trauma to prevent burnout and improve quality of care.

Authors' Contributions: CAO, COO, OT and AF conceived and designed the study. OT, AF and AOA collected and analysed the data while CAO, COO and AOA drafted the manuscript. All the authors provided critical review of the manuscript.
Conflict of Interest: None.
Funding: Self-funded.
Publication History: Submitted 18-September 2017; **Revised** 17-February 2018; **Accepted** 23-April 2018.

References

1. Iranmanesh S, Tirgari B, Bardsir SH. Post-traumatic stress disorder among paramedic and hospital emergency personnel in south-east Iran. World J Emerg Med 2013; 4(1): 26-31.

2. Lavoie S, Talbot LR, Mathieu L, Dallaire C, Dubois MF, Courcy F. An exploration of factors associated with post-traumatic stress in ER nurses. J Nurs Manag 2015; 24(2): 174-183. DOI: 10.1111/jonm.12294

3. Ukpong DI, Abasiubong F, Ekpo AU, Abasiubong F, Ukpong S. Violence against mental health staff in Nigeria: Some Lessons from Two Mental Hospitals. Niger J Psych 2011; 35: 46-49.

4. Udogwu F. A case study on Violence against Nurses in Nigeria and recommendations in reducing the violence. South Am J Nurs 2017; 1(1): 1-17 DOI: 10.21522/TIJNR.2015.02.01.Art016

5. Abodunrin OL, Adeoye OA, Adeomi AA, Akande TM. Prevalence and forms of violence against health care professionals in a South-Western city, Nigeria. Sky J Med Med Sci 2014; 2(8): 67-72.

6. Adriaenssensa J, de Guchtb V, Mae S. The impact of traumatic events on emergency room nurses: findings from a questionnaire survey. Int J Nursing Studies 2012; 49: 1411-1422.

7. Gates DM, Gillespie GL, Succop P. Violence against nurses and its impact on stress and productivity. Nurs Econ 2011; 29(2): 57-65.

8. Ogbonnaya GU, Ukegbu AU, Aguwa EN. A study on workplace violence against health workers in a Nigerian tertiary hospital. Niger J Med 2012; 21(2): 174-179.

9. Gacki-Smith J, Juarez AM, Boyett L. Violence against nurses working in US emergency departments. J Nurs Admin 2009; 39(7-8): 340-349.

10. Spector PE, Zhou ZE, Che XX. Nurse exposure to physical and nonphysical violence, bullying, and sexual harassment: a quantitative review. Intern J Nurs Stud 2014; 51(1): 72-84. doi: 10.1016/j.ijnurstu.2013.01.010.

11. Mealer M, Burnham EL, Goode CJ, Rothbaum B, Moss M. The prevalence and impact of posttraumatic stress disorder and burnout syndrome in nurses. Depress Anxiety 2009; 26: 1118–1126.

12. Horowitz M, Wilner N, Alvarez W. Impact of Event Scale: a measure of subjective stress. Psychosom Med 1979; 41: 209–218. Doi: 10.1097/00006842-197905000-00004.

13. Ugokwe–Ossai RN, Udoh FU, Ucheagwu VA. Divergent validation and reliability of Impact of Event Scale (IES) in Nigeria. Ife Psychologia 2011; 18(1): 13-19.

14. Nwoaga CN, Audu MD, Obembe A. Prevalence and correlates of posttraumatic stress disorder among medical students in the University of Jos, Nigeria. Niger J Clin Pract 2016; 19(5): 595-599.

15. Ratrout, HF, Hamdan-Mansour AM. Factors associated with secondary Traumatic Stress among Emergency Nurses: An Integrative Review. Open J Nurs 2017; 7: 1209-1226. Doi.org/10.4236/ojn.2017.711088.

16. Han KA, Yoo EK. Experience of the Nurses in Emergency Room to the Traumatic Event and Posttraumatic Stress Disorder. Adv Sci Tech Letters 2016; 128: 247-250. Doi.org/10.14257/astl.2016.128.49

17. Ben-Ezra M, Palgiy Y, Essar N. The impact of exposure to war stress on hospital staff: A preliminary report. J Psych Res 2008; 42: 422-423.

18. Somville FJ, De Gucht V, Maes S. The impact of occupational hazards and traumatic events among Belgian emergency physicians. Int J Beh Nutri Phy Activity 2016; 24:59-69. DOI 10.1186/s13049-016-0249-9

19. Moustaka E, Constantinodis T. Sources and effects of work-related stress in nursing, Health Sci J 2010; 4: 2010-2016.

20. Lambert VA, Lambert CE, Petrini M, Li XM, Zhng YJ. Predictors of physical and mental health in hospital nurses within the People's Republic of China. Int Nurs Rev 2007; 54: 85-91.

21. Lavoie S, Talbot L, Mathieu L. Posttraumatic stress disorder symptoms among emergency nurses: their perspectives and a "tailor-made" solution. J Adv Nurs 2011; 67: 1514-1522.

22. Coker AO, Omoluabi PF. Job stress and burnout among psychiatric nurses working in Lagos, Nigeria. Niger J Nurs 2011; 1(5): 7-10.

23. Coker OO, Coker AO. A study on job satisfaction among clinical and non-clinical staff in a teaching hospital in Lagos, Nigeria. East Afr J Public Health 2011; 8(4): 299-302.

24. Coker AO ,Coker OO, Sode MO, Adesope F, Tonade OR, Kanmodi K, Oladipupo T. Psychache and Psychological Distress among Nurses Working in Lagos, Nigeria. Int J Psych 2014; 1(1): 15-19. DO:10.12966/ijpp.2014.

25. Pindar SK, Wakil MA, Jidda MS, Morakinyo AO, Coker AO. Burnout syndrome and depression among healthcare professionals in Maiduguri Tertiary hospitals. Kanem J Med Sci 2012; 6: 23-28.

26. Coker OO, Coker AO, Apampa RA. An assessment of emotional pain and psychological distress among health workers in a university medical centre in Lagos, Nigeria. Med Rev 2012; 18(7): 5-8.