

ASSESSMENT OF STRESS AND PHYSIO-PSYCHOSOCIAL RESPONSE AMONG STUDENT NURSES IN NORTHERN NIGERIA

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Abstract

This empirical study determined level of stress and physio-psycho-social response among student nurses in Northern Nigeria. The research utilized descriptive cross-sectional and correlational designs. Multi-Stage sampling technique was used to select 237 student nurses from three geo-political zones covering 19 states in Nigeria. The instrument for data collection were the self-report questionnaire, the Perceived Stress Scale (PSS) and Physio-psychosocial response Scale (PPSRS). The tool was made up of 50 items. The instrument for internal consistency reliability was computed via Cronbach alpha and produced .896 and .933 respectively. The gathered data was analysed using both descriptive and inferential statistics. This research observed that the level of stress among respondents is moderate. Further findings revealed that the common sources of stress are Stressors from assignments and workload ranking 1st, Stressors from teachers and nursing staff ranking 2nd and Stressors from peers and daily life ranking 3rd. The result of this study also showed that the total ranking on the Physio-Psycho-social response of the students' Physio-Psycho-social health and well-being in general manifested Good Health Status. Four hypotheses were tested and the first revealed that there was no statistically significant difference in stress levels of nurses based on their ages. Secondly, there was a significant difference in the stress levels based on the respondent's states they came from, thirdly, there was no significant difference in the student nurses stress levels and lastly, there is a statistically significant and positive relationship between the total stress and overall physio-psycho-social health among the student nurses. Based on these findings, recommendations were made among which nurse educators and stakeholders should be aware of the existence of stress, the sources of the stress, the stressors and should strengthen student coping skills and strategies to deal with them. There should also be a periodic revisiting and review of the training curriculum, emphasizing on the related learning experiences so as to be in tandem with the 21st century nursing profession.

Keywords: Physio-Psycho-Social Health Response: Student Nurses

Introduction

Students undergoing nursing education and training encounter a great deal of academic, personal and social stress during their academic activities. Manpret and Maheshwari (2011) posited that the process of education is a very stressful experience. Firth-Cozen (2011) further buttress the fact that medical school environment has been also recognized as a stressful one with the negative effects on the academic performance, physical and psychological well-being on the students.

The concept of stress in medical or nursing education and training had attracted the attention of many researchers for there are extensive literatures on it. The term stress had been defined by so many scholars differently. Weinberg and Gould (2003) defined stress as a physical, mental or emotional tension which can be caused by both good and bad experiences. Stress is an ineffective and unhealthy reaction to change. Akinboye, Akinboye and Adeyemo (2002) in Omomia, et al., (2014), describes stress as a force which affects human-beings physically, mentally, emotionally, socially and spiritually. In the context of this

research, stress is conceptualized as those changes and reactions taking place in student nurses as a result of exposure to nursing education and training in various Schools/Colleges of Nursing and Midwifery in Nigeria. It is the student body's response to any undesirable demand.

Stress in student nurses describes physical trauma, strenuous exercises, metabolic disturbances and anxiety, which challenges the body's homeostasis (Lazarus & Folkman, 1984). Labrague (2013) citing Lazarus and Folkman (1984) further defined psycho-social stress as a particular relationship between the person and the environment that is appraised by the person as taxing and exceeding his or her response and endangering his/her well-being. Stress results as an imbalance between the environment demands and perceived resources that the individual has available to meet these demands. In other words, If the demands of nursing education and training exceed the resources of individual student nurse, stress is bound to occur in the individual. However, secondary appraisal occurs when the individual

nurse determines their capacity to manage the environment demands (Lazarus & Folkman, 1984). Indeed, plethora of students had found high prevalence of stress in medical students ranging from 21% to 56.7%, particularly in the final year as they face difficult moments in adjustment to new environment of medical education and training (Firth, 1986, Aktakin, et al., 2001; Dahlin, et al., 2005).

Several researchers suggested that there are many sources of stress confronting students during their nursing education and training. The most common stress sources identified by both the students and lecturers that relates to academics which include academic workload and combining clinical works with academic demands (Nolan & Ryan, 2008; Evans & Kelly, 2004; Gibbons, Dempster & Moutsr, 2007; Chan, et al., 2009; Pulido, et al., 2012). Specific clinical sources of stress include fear of the unknown (Pulido, et al., 2012), a non-clinical environment (Kleehammer, et al., 1990, Kim, 2003). Conflict between the ideal and real clinical practice (Evan & Kelly, 2004; Lindap, 1991), unfamiliarity with medical history (Sheu, et al., 2002), lack of professional nursing skills (Chan, et al., 2009; Sheu, et al., 2002), unfamiliar patients diagnoses and treatment (Sheu, et al., 2002), longer course of study, exposure to death and dying and the strain from communicating with patients (Migai, et al., 2014).

Others are providing physical, psychological and social care to patients (Sheu, et al., 2002), fear of making mistakes (Kim, 2003; Pulido, et al., 2012), giving medics to children (Qarmann & Lukomski, 2001), and the death of a patient (Rheed, 1995; Timmins, et al., 2002). Qermann (1998) in Labrague (2013) found that stress experience by nursing students in clinical practice increased as they progress through the nursing education and training. In addition, other reported sources of stress among nursing students include negative interaction with instruction (Khleehammer, et al., 1990; Pagana, 1998), being observed by instructors and being late (Kim, 2003), poor relationship with clinical staff or perceptions (Stecker, 2004; Nolan & Gyan, 2008), and even talking with physicians (Kim, 2003). Buttressing further, in a study conducted by Prysmachuk and Richards (2007) revealed that stress in nursing students arises from a combination of personal and extracurricular factors rather than from the education program itself. Meanwhile, the most stressful situations students' nurses' face are new

friends and working with people they don't know (Seyedfatemi, et al., 2007).

In terms of sources of stress among nursing students, it is a fact when students appraise their education and training as challenges, stress can bring them a sense of competence and an increased capacity to learn. However, when nursing education is seen as a threat, stress can elicit feeling of helplessness and a foreboding sense of loss (Kumareswamy, 2013). The Yerker-Dodsom Law (1908) postulates that individual under low and high stresses learn the least and those under moderate stress learn the most. On the perspective of stressor, it is normal for nursing students to experience stress. Garret (2001) expressed that stress is a common element in the life of every individual regardless of race or cultural background, nursing students inclusive.

This is because they deal with various pressures which cause stress. Causes of stress are referred as stressor. According to Shah, Trevechi, Dicuan, Dixit and Anand (2012), stressors don't cause anxiety or tension by themselves instead stress results from the interaction between stressors and the individual's perception and reaction to those stressors. The amount of stress experienced may be influenced by the individual's ability to effectively cope with stressful events and situations. Womble (2012) referred to stressors among students as "academic situational constraints". A study conducted by John Hopkins Boomborg School of Public Health (2006) identified five common group of stressors in students' life as school, family, friends, relationship and community. Bolyn (2013) added factors such as social pressure and physical appearance to the list of stressors among students. Related to this investigation, during nursing education and training, nursing students are frequently exposed to various stressors which may directly or indirectly impede their learning and performance. The nature of clinical education, a times present challenges that may cause students to experience stress. In addition, the practical components of the program which is important in preparing students to develop professional nursing role. Series of researches had indicated that nursing students perceived high level of stress compared to other students in other majors (Tully, 2004; Shriver & Scott-Stiles, 2000; Dahlin, et al., 2005; Compton, et al., 2008). This phenomenon is true regardless of their academic level (Tully, 2004; Seyedfatemi, et al., 2007; Lo, 2002). Providing further credence, Stecker, (2004) found that nursing students reported higher academic

and external stress than students in physical therapy, pharmacy, dentistry and medicine.

In terms of consequences of stress, it has a detrimental effect not only on the physio-psycho-social health of an individual but on well-being as a whole. Extensive review of literature had shown that excessive stress can be harmful to a student academic performance (Hughes, 2005; Beddoe & Murphy, 2004), welfare (Sawatzkyk, 1998) and could interfere with learning a complex psychomotor skill which are numerous in nursing practice (Bell, 1991). Akinboye, et al., (2002) opined that stress describes the perturbation of the body's homeostasis, generating biochemical parameters such as epinephrine and adrenal cortisol, physiological parameters such as elevated heart beat and blood pressure, behavioural characteristics such as anxiety, depression, worry, fear and tension. Furthermore, stress could result to deleterious symptoms' such as alcoholism and drug dependence, eating disorder, indiscriminate use of illegal substances, sleep disorder, suicide, absenteeism, mental health disorders and psychological symptoms (Timmins, et al., 2002; Kawton, et al., 2002; Deary, et al., 2003, Watson, et al., 2008). Providing further highlight, Omomia, et al., (2014) posit that long term exposure to stress can lead to series of health problems whereby chronic stress disrupts nearly every system in the body, raise blood pressure, suppress the immune system, increase risk of heart attack, and stroke, contribute to infertility and speed up the ageing process. Hence, the nursing education and training years should be considered as one of the most sensitive periods in their life span, for learning during these years may be compromised due to stress reactions generated.

Despite the abundant and growing literature on stress among student nurses internationally, coupled with the fact that more and more Colleges of Nursing and Midwifery are established in Nigeria, attracting hundreds of applicants, periodic investigation related to stress among students in medical education and training is indeed very important. Apparently, little can be found on the literature highlighting experiences of student's nurses in Northern Nigeria. The findings of the investigation would provide essential and useful information for nurse educators, policy makers and curriculum implementers in identifying students' needs, facilitating their learning both in the academia and in clinical setting and finally planning effective and efficient interventions and strategies to reduce stress in medical education and training. Therefore, this research was conducted to appraise the level of stress, and physio-psycho-social response among student nurses in Northern Nigeria

Objectives of the Study

The specific objectives of this research was to:

1. Determine the level of stress among student's nurses in Northern Nigeria.
2. identify the common sources of stress and their rating among the student nurses
3. Assess the physio-psycho-social health response of student nurses to stress.
4. Assess student nurses stress levels based on the respondents' states.
5. Asses students' nurses stress levels been influenced by their age brackets.
6. Identify the extent of hours spent studying that exert influence on students' stress levels.
7. Find out the correlation between overall stress levels and overall physio-psychosocial health response of the student nurses.

Research Questions

1. What is the stress level among student nurses in Northern Nigeria?
2. What are the common sources of stress and their rating among student nurses?
3. What is the physio-psychosocial health (response) levels of student nurses to stress?
4. What extent would student nurses stress levels going to differ based on their states?
5. Would student nurses stress levels going to be influenced by their age brackets?
6. To what extent would hours spent studying exert influence on students perceived stress levels?
7. What is the correlation between overall stress levels and overall physio-psycho-social health response of the student nurses?

Methodology

This research utilized descriptive cross-sectional and correlational designs. The target population of the study comprised all student nurses enrolled in Schools/Colleges of Nursing and Midwifery programmes in Northern Nigeria. Northern Nigeria is composed of 19 States classified into three Geopolitical Zones. A total of 255 respondents were recruited for the study based on Cochran formula of Z^2PQ/d^2 , using a prevalence of 21% as found in other similar studies (Aktakin, et al., 2001; Dahlin, et al., 2005). Multi stage sampling technique was adopted in the selection of respondents. Stage 1: from each zone, two states were simple-randomly sampled; Stage 2: two Colleges of Nursing and Midwifery were sampled; Stage 3: In North-West Zone, Kaduna and Kano were selected. In North-East Zone, Gombe and Bauchi were selected while in North-Central, FCT and Niger were selected. Stage

4: Stratified random sampling technique was used to select 225 respondents.

A structured questionnaire was used as tool for data collection. The self-report questionnaire consists of three parts. Section A elicited the demographic profile of the respondents. Section B: This is an internationally validated tool on stress called the Perceived Stress Scale (PSS). This instrument was designed by Sheu, Lin and Hwang (2002). It is a 29-items scale developed to examine specifically nursing students stress level and types of stressors specifically. The items were grouped into six sub-scales labelled as follows: (a). Stress from taking care of patients (8 items), (b). stress from teachers and nursing staff (6 items), (c). stress from assignment and workload (5 items), (d) stress from peers and daily life (4 items), (e) stress from lack of professional knowledge and skills (3 items) and (f) stress from clinical environment (3 items). Each item is response rated on a scale of (Never = 0, Almost Never = 1, Sometimes = 2, Fairly Often = 3 and Very Often = 4). Usually, both total scores and individual subscale scores are calculated, with higher scores indicating higher level of stress. To determine the levels of stress, the developers provided the following scaling guidelines to be used thus: 2.67 – 4.00 for high stress, 1.34 – 2.66 for moderate stress and 0 – 1.33 for low stress (Sheu, et al., 2002).

The instrument showed internal consistency reliability and test-retest reliability coefficient value of .87, the first determined through Cronbach alpha. In the current study, a coefficient of .896 was computed using similar Cronbach alpha method. The sub-scales reliability coefficients ranged from .620 to .815. Section C: This is another internationally adopted tool called Physio-psycho-social Response Scale (PPSRS), developed by Sheu, et al., (2002). The PPRS describes nursing student's response to and emotions caused by stress in clinical practice. In addition, it measures the physio-psycho-social health status of students during clinical practice. The PPSRS is composed of 21-items and each item is rated based on the format. The PPSRS is further classified into three subscales namely physical symptoms (8 items), emotional symptoms (7 items) and social-behavioural symptoms (6 items).

Both subscale scores and total scores are computed. A higher score implies present of more and serious symptoms reported and a poorer physio-psycho-social health status and vice versa. To determine and interpret the level of health status, the following scaling guidelines were used: 2.67 – 4.00 for Poor Health Status, 1.34 – 2.66 for Good health Status and 0 – 1.33 for Best health Status (Sheu, et al., 2002). Similarly, the validity and reliability of the

instrument was carried out by the developers. For this study, the PPRS produced an internal consistency reliability coefficient of .933 obtained via Cronbach alpha. In addition, the three sub-scales coefficients are .856, .837 and .895 respectively. Prior to administering the copies of the questionnaire, the purpose of the study was explained to the participants. Participation was voluntary and there was no incentive attached to participation. Respondents can decide to withdraw at any point of the data collection process.

Anonymity was also assured by asking participant not to write their names on the questionnaire form. Confidentiality of the respondents was maintained throughout the investigation. Data for the study were collected in the respective Colleges after permission and approval was obtained. Six research assistants, who are student-tutors on teaching practice exercise carefully, explained the essence of each scale to the student-nurses and this helped in reducing invalid responses. Enough time was given to the respondents to patiently fill the instrument. The data were entered and coded into SPSS versions 23. Preliminary analyses were performed to ensure no violation of normality, linearity and homogeneity of variance, as well as check for outliers. Descriptive statistics of frequency, percentage, mean as well as standard deviation were used to answer the research questions while parametric statistics: One-way ANOVA and Pearson product moment correlation tests were used to test the hypotheses.

Results and Discussion

Table 1 presents the demographic variables of the respondents, out of the 237 respondents, the many came from Gombe state 44(19%), followed by FCT Abuja, Bauchi and Kano 40(17%) each and the least is Sokoto state 36(15%). Based on gender distribution, majority are female 200(84%), while age bracket indicates that 68(29%) are between 21-24 years old, followed by 70(30%) between 17-20 years. The marital status, indicates that majority are single 145(61), followed by married respondents 86(36%), while 108(46%) are at 300 level of their study, followed by 78(33%) are in 200 level. In terms of hours spent studying majority 108(46%) do spent between 3-5 hours while 68(28%) spent 0-2 hours and another 61(26%) spent 6-8 hours. Almost 126(53) do spent between 6-8 hours sleeping every day, while 96(41%) spent between 3-5 hours sleeping. Daily Facebook attract about 100(42%) spending between 1- 2 hours, followed by 98(41%) who never log-on Facebook daily. The demographic characteristics conclude that the majority of respondents came from Gombe state, are females within the ages of 21 to 24yrs. Findings showed that majority of the respondents are married in 300L and spent 3 to 5hours studying. Lastly, respondents

spend 6 to 8hours sleeping and 1 to 2hrs on daily Facebook Hours usage.

Table 1: Demographics of Respondents

Characteristics		N (%)
States	Bauchi	39(17)
	Niger	38(16)
	Gombe	44(19)
	FCT, Abuja	40(17)
	Sokoto	36(15)
	Kano	40 (17)
Total		237
		00)
Gender	Male	37(16)
	Female	200(84)
	Total	237
		00)
Age	17-20 years	70(30)
	21-24 years	68(29)
	25-28 years	45(19)
	29 years & above	54(23)
	Total	237
		00)
Marital status	Single	145(61)

Level	Married	86(36)
	Separated	6(3)
	100 Level	51(22)
	200 level	78(33)
	300 level	108(46)
Total		237
		00)
Hrs spent studying	0-2 hours	68(29)
	3-5 hours	108(46)
	6-8 hours	61(26)
	Total	237
		00)
Hrs spent sleeping	0-2 hours	15(6)
	3-5 hours	96(41)
	6-8 hours	126(53)
	Total	237
		00)
Daily Facebook Hrs usage	Never	98(41)
	1-2hrouns	100(42)
	3-4hours	31(13)
	5-10 hours	8(3)
	Total	237 (100)

Table 2: Rating of the Stress Scale

Stressors	Mean	S.D
1.Stress from lack of professional knowledge and Skills		
Unfamiliar with medical history and terms	1.51	1.29
Unfamiliar with professional nursing skills	1.60	1.36
Unfamiliar with patients diagnoses and treatment	1.76	1.39
	1.62	1.35
2.Stress from assignments and workload		
Worry about poor grades	2.13	1.36
Pressure from the nature and quality of clinical practice	2.00	1.27
Feelings that performance does not meet teachers expectations	1.95	1.25
Feelings that dull and inflexible clinical practice affect family/social life	2.13	1.23
Feelings that the demands of clinical practice exceed physical and emotional endurance	1.84	1.31
	2.01	1.28
3.Stress from taking care of patients		
Lack of experiences and ability in providing nursing care and in making Judgment	1.56	1.25
Not knowing how to help patients with physio-psycho-social problems	1.56	1.30
Unable to reach expectations	1.78	1.31
Unable to provide appropriate responses to doctors, teachers and patients Questions	1.73	1.24
Worry about not being trusted or accepted by patients or their families	1.64	1.39
Unable to provide patients with good nursing care	1.42	1.29
Not knowing how to communicate with patients	1.52	1.33
Difficulties in changing from the role of a student to that of a Nurse	1.60	1.29
	1.60	1.3
4.Stress from clinical environment		
Feelings of stress in the environment where clinical practice takes place	1.62	1.27
Unfamiliarity with ward facilities	1.46	1.22
Feelings of stress from rapid changes in a patient's condition	1.79	1.18
	1.62	1.22
5.Stress from teachers and nursing staff		
Seeing a discrepancy between theory and practice	1.92	1.19
Not knowing how to discuss a patient's illness with teachers or medical and	1.68	1.25

Nursing personnel		
Feelings of stress when a teacher’s instruction is different from expectations	2.02	1.22
Medical personnel lacking empathy and wiliness to help	1.78	1.25
Feelings that teachers do not evaluate student fairly	1.84	1.25
Lack of care and guidance from teachers	1.68	1.24
	1.82	1.23
6.Stress from peers and daily life		
Experience of competition from peers in school and clinical practice	2.03	1.22
Feelings of pressure from teachers who evaluate students’ performance by Comparison	2.10	1.24
Feelings that clinical practice affects involvement in extracurricular r activities	1.97	1.19
Inability to get along with group peers	1.77	1.25
	2.41	1.23
GRAND MEAN	1.77	1.26

Research Question 1

What are the common sources of stress and their rating among student nurses? The empirical data contained in Table 2 depicts responses gathered and analysed regarding sources of stress among student nurses. The top-most five (5) reported sources of stress by the students were: worry about poor grades (M=2.13,SD=1.35), feelings that dull and inflexible clinical practice affect family/social life (M=2.13, SD=1.23), feelings of pressure from teachers who evaluate students’ performance by comparison (M=2.10, SD=1.24), experience of competition from peers in school and clinical practice (M=2.03, SD=1.22) and feelings of stress when a teacher’s instruction is difficult from expectation (M+2.02, SD=1.22).

Meanwhile the lowest reported sources of stress were: Not knowing how to help patients with physio-psycho-social problems (M=1.56, SD=1.30), Not knowing how to communicate with patients (M=1.52, SD=1.33), Unfamiliar with medical history and terms (M+1.51, SD=1.29), Unfamiliarity with ward facilities (M=1.46, SD=1.22), and Unable to provide patients with good nursing care (M=1.42, SD=1.29). In general student nurse’s response on perceived stress scale produced a grand mean of 1.77 (SD = 1.26) is interpreted as” moderate stress”. This study shows that the level of stress is moderate.

Classification

2.67 - 4.00	High stress
1.34 - 2.66	Moderate stress
0.00 - 1.33	Low stress

Research Question 2

What are the common sources of stress and their rating among the student nurses in Northern Nigeria?

Table 3 shows the six subscales ranking of the Stress Scale, as a result of items been grouped into factors, after all mean items were calculated for each respondent. The overall means were then determined on the basis of the respondents mean scores for each PSS items. The findings indicated that the most common types of group stressors identified and ranked accordingly by the nurses were: Stress from assignment and workload (M=2.01, SD=0.87), followed by Stress from teachers and nursing staff (M=1.97, SD=0.88), stress from peers and daily life (M=1.81, SD=0.77). Meanwhile the least reported type of stressors is Stress from lack of professional knowledge and skills (M=1.63, SD=1.14), stress from clinical environment (M=1.62, SD=0.95) and lastly stress from taking care of patients (M=1.60, SD=0.85). The common sources of stress are Stress from assignments and workload ranking 1st, Stress from teachers and nursing staff ranking 2nd and Stress from peers and daily life ranking 3rd.

Research Question Three

What is the physio-psychosocial health (response) levels of student nurses to stress? Table 4 reveals the students’ responses on the Physio-Psycho-Social health levels to stress. The results also show three indicators to Physio-Psycho-Social health levels to stress.

The highest rating of emotional symptoms include: I tend to be worried and nervous (M=1.68, SD=1.21), I tend to be nervous and anxious lately (M=1.68, SD=1.27), I often feel depressed and miserable (M=1.50, SD=1.29) and I feel afraid without any reason (M=1.54, SD=1.29). The result of the total score of emotional symptoms is M=1.53, SD=1.28. This result indicated Good Health Status. The highest rating of Social Behavioural Symptoms include: I cannot work as usual (M=1.52, SD=1.35) and I have difficulties in breathing for no reason (M=1.46, SD=1.22) and I do not feel needed or

valued (M=1.55, SD=1.29). The result of the total score of Social Behavioural symptoms is M=1.53, SD=1.27. This result reported Good Health Status. The highest rating of Physical Symptoms include: I often feel giddy (M=1.45, SD=1.23), I have difficulties in breathing for no reason (M=1.53, SD=1.35) and catch cold more often (M=1.45, SD=1.23). The result of the total score of Physical symptoms is M=1.42, SD=1.27. This result reported

Good Health Status. The total ranking on the Physio-Psychosocial revealed that the students Physio-Psychosocial health and well-being in general is (M=1.47, SD=1.27). This result concludes that the respondents manifested Good Health Status.

This study observed that emotional and Social Behavioural Symptoms ranked the best health status

Table 3: Ranking of the Common Sources of Stress Scale Sub-Scales/Factors

Indicators	N	Mean	SD	Ranking
1. Stress from lack of professional knowledge and skills	3	1.63	1.14	4 th
2. Stress from assignments and workload	5	2.01	0.87	1 st
3. Stress from taking care of patients	8	1.60	0.85	6 th
4. Stress from clinical environment	3	1.62	0.95	5 th
5. Stress from teachers and nursing staff	4	1.97	0.88	2 nd
6. Stress from peers and daily life	6	1.81	0.77	3 rd

Table 4: Ranking on the Physio-Psychosocial Scale

Indicators	Mean	SD
I. Emotional symptoms		
I tend to be worried and nervous	1.68	1.21
I tend to be nervous and anxious lately	1.68	1.27
I often feel depressed and miserable	1.50	1.27
I feel afraid without any reason	1.54	1.29
I feel I am going to have a nervous breakdown	1.43	1.33
I feel more anxious lately	1.45	1.27
I cannot calm down	1.41	1.31
	1.53	1.28
II. Social behavioural Symptoms		
I am not optimistic about my future	1.43	1.33
My life is not very colourful	1.43	1.27
I cannot work as usual	1.52	1.22
I have difficulty in making decisions	1.46	1.21
I do not feel needed or valued	1.55	1.29
I cannot think as clearly as before	1.38	1.27
	1.46	1.27
III. Physical Symptoms		
I often feel giddy	1.45	1.23
I experience nausea and vomiting	1.43	1.29
I often have vertigo and feel dizzy	1.37	1.25
I feel pressure in the chest	1.38	1.24
My fingers and toes feel numb or painful	1.45	1.25
I have stomach-ache and diarrhea	1.30	1.29
I have difficulties in breathing for no reason	1.53	1.35
I catch cold more often	1.45	1.28
	1.42	1.27
Grand Mean	1.47	1.27

Interpretation

- 2.67 - 4.00 Poor Health Status
- 1.34 - 2.66 Good Health Status
- 0.0 - 1.33 Best Health Status

Table 4b: Ranking of the Physio-Psycho-Social Response Scale Subscales

	Indicators	N	Mean	SD	Ranking
1.	Emotional symptoms	7	1.53	0.93	1 st
2.	Social behavioural symptoms	6	1.46	0.93	2 nd
3.	Physical symptoms	8	1.42	0.96	3 rd

Research Question Four

Will students nurse stress levels going to be influenced by their age brackets?

A one-Way ANOVA was conducted to explore whether there was a difference in stress levels of nurses according to their age brackets. The results contained in Table 5 showed that there was no statistical significant difference in stress levels of nurses based on their ages $F(4, 232) = 1.68, P=.16$. These findings suggest that age bracket of nurse has no impact on their stress levels in this research.

Table 5: One-Way ANOVA results student nurses levels based on their age brackets

Variable	Age Bracket	N	M	SD	F	P	Remark
	13-16 years	11	44.00	9.60			
Stress Levels	17 – 20 years	59	50.27	18.57	1.68	.16	NS
	21 -24 years	68	52.04	18.58			
	25 – 28 years	45	48.13	19.99			
	29 years & above	54	55.96	18.59			
	TOTAL	23	51.38	18.67			

Research Questions Five

To what extent would student nurses stress levels going to differ based on their states?

One-Way ANOVA was performed to examine whether there is difference in stress levels of the student nurses according to their states. The results are presented in Table 6 and demonstrated that there was a significant difference in the stress levels based

on their states $F(5, 231) = 7.05, P<.001$. To investigate which states differed from each other, a post-hoc follow-up test using Scheffe was performed. According to the findings, there was a difference between nurses in FCT, Abuja and Bauchi state, FCT, Abuja and Kano State and Gombe and Bauchi state. All other pairs did not produce any significant differences.

Table 5: One-way ANOVA Results Student Nurses Levels Based on States

Variable	States	N	M	S.D	F	P	Scheffe
	(a) Bauchi State	39	41.44	18.33			
Stress Levels	(b). Niger state	38	53.13	17.78	7.05	<.001	D>A, D>E
	(c). Gombe state	44	54.66	15.90			
	(d). FCT Abuja	40	61.33	20.71			
	(e). Sokoto State	36	53.67	17.73			
	(f). Kano State	40	43.80	14.59			
	Total		237	51.38			

Research Question 6

To what extent would hours spent studying exert influence on students perceived stress levels?

In Table 8, a One-way ANOVA was performed to explore whether there was any difference in stress levels of student nurses based on the hours spent

studying/per day. The results presented in Table 8 reveals that there was no significant difference in the student nurses stress levels $F(2,234) = 2.13, P=.055$. These findings further suggest that the hours spent studying by the students had no impact or influence on their stress levels.

Table 8: One-Way ANOVA Results Student Nurses Levels Based on Hours Spent Studying/Per Day

Variable	Hours spent studying/per day	N	M	SD	F	P	Remark
	0 – 2 hours	68	47.84	16.89			
Stress Levels	3 – 5 hours	10	54.45	17.74	2.13	.055	NS
	6 – 8 hours	61	49.89	21.38			
	TOTAL	23	51.38	18.67			

Research question 7

What is the correlation between overall stress levels and over physio-psycho-social health response of the student nurses?

Pearson Product moment correlation coefficient was employed to determine the relationship between total stress and overall physio-psycho-social health among the student nurses. The results in Table 9 reveals a

statistically significant and positive relationship between the two variables $r(235) = .452, P < .001$. This result implies that as the levels of stress increases, there is a corresponding increase in the physio-psycho-social health response of the students. It could be concluded that the student nurses tend to have good health coping and preventive strategies to deal with the perceived stress during their nursing education and training.

Table 9: Pearson Correlation Coefficient between Overall Stress Levels and Physio-Psycho-Social Health Response

Variables	Mean	SD	r	P	Remark
Overall Stress and stressors levels	51.38	18.67	.452**	<.001	Sign
Overall Physio-psychosocial health levels	30.81	17.48			

**Correlation is significant at the .01 level

Discussion of Findings

This empirical research investigates the level of stress and physio-psycho-social response among student nurses in Northern Nigeria. Findings of demographic data showed that majority of the respondents are married in 300L and spent 3 to 5hours studying. Lastly, respondents spend 6 to 8hours sleeping and 1 to 2hrs on daily Facebook Hours usage. Results of this investigation as indicated that the level of stress among nursing students was considered as moderate stress. This finding is consistent with the results obtained by previous researchers on the stress and its causes among students (Manpret, et al., 2011; Firth-Cozen, 2011; Nolan & Pyan, 2008).

However, this study is not consistent with Papazisis, et al., (2008) who reported mild level of stress in his study conducted among Greek student nurses. According to Yerkes, et al., (2004) stressful situation in minimal amount can be beneficial on the person’s well-being, especially when faced with challenges and responsibility. Indeed, findings of this research call for a greater challenge for nurse educators and other stakeholders in planning strategies and techniques to prevent the increase of stress among students, while keeping them motivated to achieve for a greater academic and professional learning.

The result of this study observed that the common sources of stress are stressors from assignments and workload ranking 1st, stressors from teachers and nursing staff ranking 2nd and stressors from peers and daily life ranking 3rd. The writers’ attributes these sources to the present heavy loaded curriculum of the nursing education and training composed of both theoretical and practical clinical components. This study supports Fleming, et al., (2005) and The Nursing Curriculum of Hongkong, (2004). They observed that nursing curriculum in other countries reveals that in U.S, students are only required to complete 1000 hours of clinical training before graduation, in Hongkong, it is 1500 clinical hours

and in European countries and the minimum requirement of 2300 hours practice in programmes is required.

However, in Nigeria a minimum of 1000 clinical hours are required before graduation too. In addition, student nurses are also loaded during training with term papers and seminar presentations, projects, continuous assessment, quizzes, clinical practices and posting and examinations from other elective subjects, making the programme tighter, tougher and heavier compared to other programmes. In Nigeria, it is a twin interrelated programme: Nursing and Midwifery. This finding is in support to the claim of previous researches conducted (Cha, et al., 2009; Nolan, et al., 2008).

Findings of this study observed that the total ranking on the Physio-Psycho-social response of the students’ Physio-Psycho-social health and well-being in general manifested Good Health Status. This finding is consistent and comparable with Chan, et al., (2009) and Sheu, et al., (2012) who reported the same results among Taiwanese, Hongkong-China and Spanish students. The writers are of the opinion that nursing students are able to manage and cope-up with various stressors facing them during nursing education and training.

The writers opined that as the students’ progress in their training, they tend to gather better knowledge and clinical expertise that helps towards problem-solving skills and stress preventive strategies necessary when faced with various stressors. The result of this study showed that there was no statistically significant difference in stress levels of nurses based on their ages. This research findings concur with that of Lo (2002) who reported the same result. This finding is contrary to that of Kheehammer, et al., (1990) where they found that junior nursing students showed a higher anxiety score than senior students. This study is also not consistent

with Tully (2004) who confirm in his study that the second years students presented higher levels of stress.

This study indicated that there is a significant differences of stress levels among respondents in different states of Northern Nigeria. The researchers attributed the differences to the process of nursing education and training implementation adopted by each state. Each school in different states would aim at judicious implementation of the curriculum that would lead to success at the National Examination, organized by the Council, which all student nurses undergo. The results presented in this study, reveals that there was no significant difference in the student nurses stress levels. Furthermore, the writers suggested that it could be deduced based on the mean values of the students that nursing education and training is really laborious and stressful, and thus require substantial commitment of so many hours of study.

Nursing education is a professional calling, not academic, thus requires all the seriousness it deserves. This study reported that there is statistically significant and positive relationship between the total stress and overall physio-psycho-social health among the student nurses. This finding is contrary to Tully (2004) study who reported that high levels of stress are possible risk for the health of the students. The writers proposed that, the higher is the stress levels, the more adaptable the students are able to manage and navigate the stressful situations.

Conclusion and Recommendations

Assignments and workload are identified as the major sources/causes of stress in this study and the level of stress among Nigerian nursing students was found to be moderate and they possess the physio-psycho-social response to tackle the various stressors confronting them during their training. The results provided essential and useful information for nurse educators in identifying student's needs, facilitating their learning both in the academic and clinical setting and planning effective interventions and strategies to reduce or control stress in nursing educational training.

In this context, the following recommendations are put forward: Nursing educators and stakeholders in the implementations of nursing education and training should be aware of the existence of stress, the sources of the stress, the stressors and should strengthen student coping skills and strategies to deal with them; there should be periodic revisiting and review of the training curriculum, emphasizing on the related learning experiences so as to be in tandem with the 21st century nursing profession;

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