

Perceived Stress among Bachelor Nursing Students in Clinical Practice in Faculties of Nursing, Khartoum State, 2018

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ABSTRACT

Background: Stress has been identified as a twentieth-century disease and has been viewed as a complex and dynamic transaction between individuals and their environments. Overall students face many challenges and stressors, however, nursing students are more commonly to perceive stress than other medical students due to the transitional nature of college life and specific socio-cultural characteristics. Therefore, stress makes students to practice professional skills hardly to gain proper training. This study aimed to investigate the level of the stress among bachelor nursing students in clinical practice.

Methodology: A descriptive cross-sectional facility-based was carried out in seventeen faculties of nursing in Khartoum State. 446 nursing students were involved. A standardized structured questionnaire included; demographic information sheet and perceived stress scale (PSS) had been used. All data had been analyzed by Statistical Package of Social Sciences (SPSS). Ethical approval was obtained from Institutional Review Board at Al-Neelain and Administrative approvals were obtained from the Deans of selected faculties in this study and verbal consent was obtained from each student involved.

Results: Majority of the respondents (88.3%) were females with mean age 19 years. Overall mean level of stress was (1.52 ± 0.19). Stress from the area of practice, stress from assignments and workload, and stress from taking care of patients were the most common stressors (1.72 ± 1.01), (1.70 ± 0.88) and (1.55 ± 0.78) respectively. Factor analysis demonstrated that: stress from assignments and workload and stress from taking care of patient accounted for 62% of total variance as major source of stress.

Conclusion: Nursing students perceived intermediate to a high level of stress by more than half of the respondents, most commonly attributed to the clinical environment, assignments, workload and taking care of patients respectively.

Recommendations: familiarizing students with the clinical area by providing proper support by instructors and nursing staff, minimizing assignments and workload during clinical practice will be important to reduce stress.

Keywords: Stress, Nursing Students, Factor Analysis, and Clinical Practice.

Conflict of interest: No conflict of interest

Introduction

Nursing faculty courses consist of several theory and clinical courses that reinforce and support each other. The theory part of nursing courses is conducted in class rooms through lectures, case studies and discussions, the theoretical part is complemented with clinical training that provides students with the opportunity to develop knowledge, attitudes, skills and values covered in class rooms and skill labs. Furthermore, the clinical practice training assists in integrating theory into practice and expanding expectation of the future job. (Jackson and Mannix, 2001)

Clinical teaching in nursing has been improved recently due to advances in technology and the changing environments of health care settings. Advancement of practice within the clinical area by the high-fidelity simulator and teaching methods such as structured scenarios provided several advantages in the enhancement of knowledge and skills among nursing students. However, acquired knowledge and skill while training in real settings with actual patients is more advantageous than lectures and scenarios. (Chesser-Smyth, 2005, Sendir and Acaroglu, 2008)

A physiological and psychological response to environmental demand which occurs after an individual perceives that they are not able to adequately cope with the present demand known as stress (Lewis et al., 2014). In addition, perceived stress was defined as the degree to which a situation in one's life was recognized stressful. Stress reaction can only occur if the individual perceives the circumstances or events as stressor. (Cohen et al., 1983) Stressors can be generally defined as situations or events that have the ability to affect health. (Barling, 1990) Studies classifying stressors into three main categories; academic pressure, social issues and financial problems. (Vitaliano et al., 1984) Stress has been identified as a 20-century disease and viewed as a complex and dynamic transaction between individuals and their environments. (Evans and Kelly, 2004)

Nowadays society increasingly reports experiencing stress related to medical training, studies have shown fairly high levels of distresses, such as symptoms of depression (Dahlin et al., 2005). Nursing students spend approximately half of their educational program within clinical area; so it is alarming that they deem the clinical practice as incredibly stressful situation. (Chan et al., 2009) Stress among nursing students suggested to have significant consequences on both thinking and learning according to the degree of stress. (Misra and McKean, 2000, Seyedfatemi et al., 2007, Gibbons et al., 2008, Sadock and Sadock, 2011) For

example; students with high levels of stress have difficulties in their education, which could lead to a variety of mental and physical health-related problems (Seyedfatemi et al., 2007). On the other hand, low levels of stress were discovered to play a role in students' motivation. (Sendir and Acaroglu, 2008)

Excessive stress may have damaging effects on one's health. Stress may be considered as a causative or predisposing factor worsen several diseases, such as; coronary artery disease, hypertension, asthma, inflammatory diseases and lead to immunosuppression. Furthermore, an acute stress response disrupts physiological hemostasis by activating the sympathetic nervous system which leads to tachycardia, blood pressure, muscle tension, a decrease in skin temperature and arose different brain activities. Additionally, stress-induced immunosuppression may occur as a result of prolonged exposure to stress. (Lewis, 2007)

The nature of the job forces nurses to adapt with several responsibilities and handle many operations at same time, for example; providing care to patients, dealing with physicians and relatives of patients as far as dealing with critical cases under stressful situations with very low income associated with lack of social appreciation compared with other fields of medical staff increase the probability to develop alarming types of stress.

In Sudan, the nursing curriculum is composed of four years and designed to meet the Ministry of Higher Education rules and regulations, which is responsible for the accreditation of universities. Many nursing faculties have opened and this led to overcrowding and confined environments in the wards, and this resulted in spread of illness among students. On the other hand, the increase in number of students from several universities in the same area of practice led to increase in the possibility of exposure to stress among nursing students in Khartoum. The aim of the current study is to assess nursing student's perceived stress, stress-related factors in clinical practice, as well as identifying the major sources of stress.

Methodology

A descriptive cross-sectional facility-based study had been conducted in nursing colleges in Khartoum. Seventeen nursing colleges were included. Some of them were public and some of them were private. Nursing students with different ethnicities throughout the country were attending these universities.

All bachelor nursing students during their initial exposure to clinical practice were included in this study. While, first-year students, students in another practice field (obstetric and pediatric), bridging students and students with a previous working experience were excluded. 446 participants were involved and they were selected by two stage cluster sampling method. Whereas, seventeen faculties of nursing in Khartoum state had been covered, then all subjects/units in the cluster who met the criteria were randomly selected according to the proportion of each university.

A standardized questionnaire includes demographic data sheet and a scale known as 'perceived stress scale' were used for collection of data. A five-point Likert scale that examined nursing students' stress level and types of stressors. The scale consisted of 29 item to which students' response to each item ranged from never to always as follows: (0=never, 1=rarely, 2=sometimes, 3=frequently, and 4=always) . The 29 item covered the following factors : 'Stress from taking care of patients' (8 items), 'Stress from teachers and nursing staff' (6 items), 'Stress from assignments and workload' (5 items), 'Stress from peers and daily life' (4 items), 'Stress from lack of professional knowledge and skills' (3 items), and 'Stress from clinical environment' (3 items). The total score ranges between 0 and 120. Higher scores indicate a higher level of stress. To determine the level of stress, the following scale was used; 2.67 – 4.00 for high stress level, 1.34 – 2.66 for moderate stress level, and 0.1 – 1.33 for low stress level. Reliability of the scale revealed Cronbach's alpha of 0.86-0.89 (Sheu et al., 2002, Chan et al., 2009). In the present study, Cronbach's alpha is (0.88).

Ethical approval was obtained from IRB at Al Neelain and administrative approvals were obtained from the Deans of selected faculties in this study. Nursing students, who were willing to participate, had received a cover letter explaining the purpose and the outcomes of the study and assured that their participation was voluntary with the right to withdraw without any penalty then verbal consent was taken from each participant. Furthermore, participants were assured of their right to privacy, and data was kept strictly confidential. No names or personal details were recorded. Ethical conduct had been maintained during data collection and throughout the research process.

Data was analyzed by using SPSS program version 20. For continuous data, mean and standard deviation were used while frequency and percentage were used for the discrete data. Factor analysis was used to determine variability of factors of stress.

Table 2. Perceived stress scale (PSS)

Stress factors	Factor	Item	Mean±SD
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Results:

Table 1. Demographic data

Variable	Frequency (%)	Variable	Frequency (%)
Age		Secondary	149 (33.4%)
<20	262 (59.00%)	Graduate	127 (28.5%)
≥20	182 (41.00%)	post graduate	46 (10.3%)
Gender		Mother's education	
Male	52 (11.7%)	Illiterate	24 (5.4%)
Female	394 (88.3%)	Khalwa	30 (6.7%)
Marital status		Less than secondary	88 (19.7%)
Single	425 (95.3%)	Secondary	188 (42.2%)
Married	20 (4.5%)	Graduate	93 (20.9%)
Widow	0	post graduate	19 (4.3%)
Divorced	1 (.2%)	Father's work	
Family residence		Have a job	395 (89%)
Urban	362 (81.2%)	Jobless	49 (11%)
Rural	83 (18.6%)	Mother's work	
Student's residence		Housewife	325 (72.9%)
With family	296 (66.4%)	Have a job	119 (26.7%)
Away from family	150 (33.6%)	GPA	
Family income		Excellent	77 (17.3%)
Satisfactory	365 (81.8%)	v. good	205 (46.1%)
Unsatisfactory	75 (16.8%)	Good	153 (34.4%)
Father's education		Others	10 (2.2%)
Illiterate	11 (2.5%)	Family size	
Khalwa	36 (8.1%)	≤7	224 (50.33%)
Less than secondary	74 (16.6%)	>7	201 (49.77%)

	ranking	ranking	
Overall stress level perceived			1.52 ± 0.19
1- Stress from taking care of patients	3		1.55 ± 0.78
Lack of experience and ability in providing nursing care and in making judgments		8	1.79 ± 1.08
Do not know how to help patients with physio-psycho-social problems		7	1.79 ± 1.24
Unable to reach one's expectations.		2	2.10 ± 1.42
Unable to provide appropriate responses to teachers', and patients' questions.		4	2.01 ± 1.28
Worry about not being trusted or accepted by patients or patients' family.		19	1.39 ± 1.24
Unable to provide patients with good nursing care.		17	1.45 ± 1.24
Do not know how to communicate with patients.		28	.82 ± 1.09
Experience difficulties in changing from the role of a student to that of a nurse.		24	1.09 ± 1.26
2- Stress from assignments and workload	2		1.70 ± 0.88
-Worry about bad grades.		1	2.47 ± 1.50
-Experience pressure from the nature and quality of clinical practice.		11	1.71 ± 1.28
-Feel that one's performance does not meet teachers' expectations.		16	1.47 ± 1.29
-Feel that the clinical practice requirements exceed one's physical and emotional endurance.		14	1.56 ± 1.33
-Feel that dull and inflexible clinical practice affects one's family and social life		21	1.31 ± 1.37
3- Stress from Lack of Professional Knowledge and skills	5		1.36 ± 0.92
-Unfamiliar with medical history and terms.		13	1.64 ± 1.21
-Unfamiliar with professional nursing skills.		27	.91 ± 1.10
-Unfamiliar with patients' diagnoses and treatments.		15	1.52 ± 1.18
4- Stress from area of practice	1		1.72 ± 1.01
-Feel stressed in the hospital environment where clinical practice takes place.		10	1.73 ± 1.40
-Unfamiliar with the ward facilities.		18	1.44 ± 1.29
-Feel stressed from the rapid change in patient's condition.		5	1.98 ± 1.30
5- Stress from peers and daily life	6		1.25 ± 0.91
-Experience competition from peers in school and clinical practice.		20	1.39 ± 0.91
-Feel pressure from teachers who evaluate students' performance by comparison.		6	1.79 ± 1.49
- Feelings that clinical practice affects involvement in extracurricular activities.		25	1.04 ± 1.31
-Cannot get along with other peers in the group.		29	.77 ± 1.23
6- Stress from teachers and nursing staff	4		1.49 ± 0.87
-Experience discrepancy between theory and practice.		3	2.04 ± 1.46
-Do not know how to discuss patients' illness with teachers or nursing personnel.		21	1.32 ± 1.25
-Feel stressed that teacher's instruction is different from one's expectations.		9	1.73 ± 1.35
-Doctors lack empathy and are not willing to help.		12	1.67 ± 1.30
-Feel that teachers do not give fair evaluation on students.		26	1.01 ± 1.34
-Lack of care and guidance from teacher.		23	1.17 ± 1.38

Table 3. Factor analysis of perceived stress scale’s domains

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Assignments and workload	2.850	47.503	47.503	2.850	47.503	47.503
Patient care	.866	14.442	61.944	.866	14.442	61.944
Teachers and nursing staff	.765	12.754	74.699			
Peers	.593	9.887	84.586			
Area of practice	.554	9.237	93.822			
Lack of knowledge and nursing skills	.371	6.178	100.000			

Extraction Method: Principal Component Analysis.

Figure 1. Scree plot of main perceived stress factors

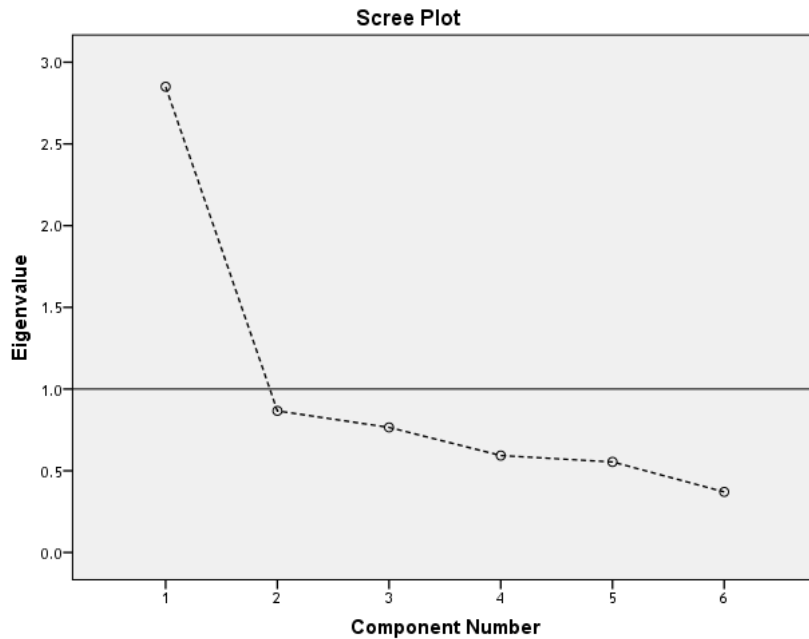


Table 5. Factor analysis of perceived stress scale’s items

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	6.661	22.968	22.968
2	1.951	6.728	29.696
3	1.608	5.544	35.240
4	1.402	4.836	40.076
5	1.317	4.542	44.618
6	1.132	3.903	48.521
7	1.070	3.690	52.211
8	1.016	3.502	55.713

Figure 2. Scree plot of perceived stress scale items

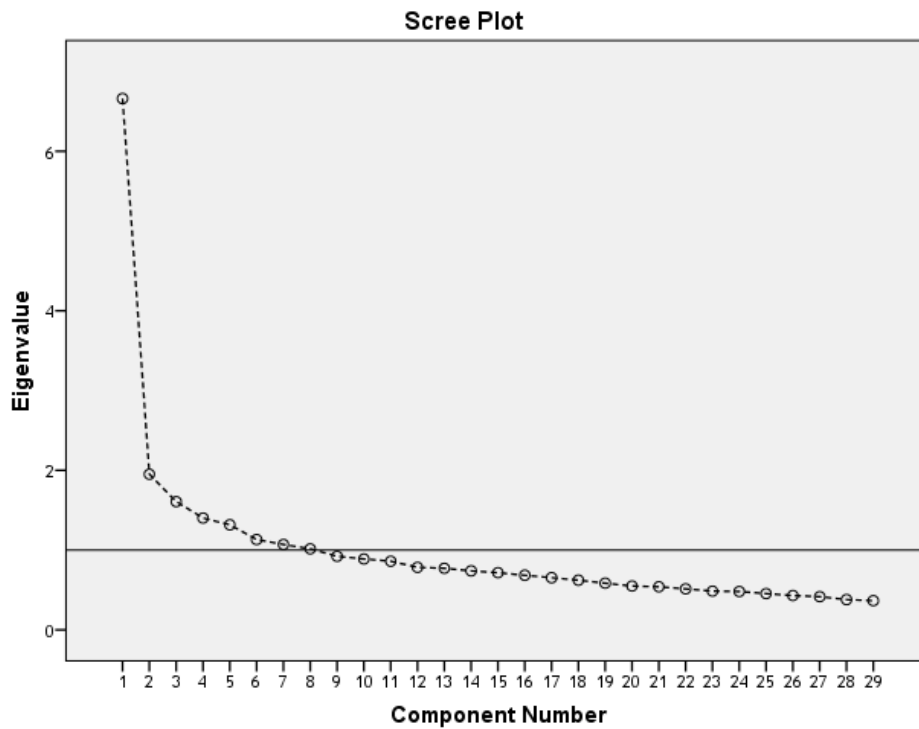


Table 6. Varimax rotation method of perceived stress scale's items

Domains	Components	% of variance	Eigen-value
Factor 1 (Clinical)	Lack of experience and ability in providing nursing care and in making judgments		.71
	Unable to provide patients with good nursing care		.68
	Do not know how to help patients with physio-psycho-social problems	22.97%	.58
	Unable to provide appropriate responses to teachers', and patients' questions		.58
	Worry about not being trusted or accepted by patients or patients' family		.54
	Unable to reach one's expectations		.51
	Feel that one's performance does not meet teachers' expectations		.46
Factor 2 (Academic)	Lack of care and guidance from teacher		.73
	Feel that teachers do not give fair evaluation on students		.72
	Feel stressed that teacher's instruction is different from one's expectations.	6.73%	.58
	Doctors lack empathy and are not willing to help.		.57
	Do not know how to discuss patients' illness with teachers or nursing personnel.		.37
Factor 3 (Academic)	Experience competition from peers in school and clinical practice.		.71
	Feel pressure from teachers who evaluate students' performance by comparison.	5.54%	.66
	Worry about bad grades		.59
Factor 4 (Clinical)	Unfamiliar with patients' diagnoses and treatments		.78
	Unfamiliar with professional nursing skills	4.84%	.74
	Unfamiliar with medical history and terms.		.73
Factor 5 (Clinical)	Unfamiliar with the ward facilities		.80
	Feel stressed in the hospital environment where clinical practice takes place	4.54%	.79
	Feel stressed from the rapid change in patient's condition		.50
Factor 6 (Clinical)	Experience difficulties in changing from the role of a student to that of a nurse		.73
	Do not know how to communicate with patients	3.9%	.73
	Experience pressure from the nature and quality of clinical practice		.33
Factor 7 (External)	Feel that dull and inflexible clinical practice affects one's family and social life		.75
	Feel that the clinical practice requirements exceed physical and emotional endurance	3.69%	.62
	Feelings that clinical practice affects involvement in extracurricular activities		.56
Factor 8 (Academic)	Experience discrepancy between theory and practice	3.5%	.63
	Feel stressed that teacher's instruction is different from one's expectations.		.32

The study included 446 bachelor nursing students, their mean age was (19.6 ± 1.47) years, and (59%) of them were less than (20) years. The majority of students (88.3%) were females, and (95.3%) of them were single. In addition, (81.2%) were living in an urban area and (66.4%) were living with their families and mean family size was (7 ± 2.17) members, (50.33%) of them were ≤ 7 members, from those (81.8%) revealed satisfaction of family income. In case of students' parents; (33.4%) of participants their fathers' education was secondary school matched to (42.2%) of mothers' education was secondary. Regarding employment of parents, (89%) of student's fathers had a job, while (72.9%) of their mothers were housewives. Regarding the previous grade of participants; (46.1%) were very good, (34.4%) were good and (17.3%) were excellent, while the rest (2.2%) were less than good.

Table (1)

Overall mean stress level perceived by students was (1.52 ± 0.19). The most common type of stressors had been perceived were stress from area of practice (1.72 ± 1.01), followed by stress from assignments and workload (1.70 ± 0.88), then stress from taking care of patients (1.55 ± 0.78), after that, stress from teachers and nursing staff (1.49 ± 0.87), the fifth-ranked stressor was stress from lack of professional knowledge and skills (1.36 ± 0.92). Finally, the least stressor was due to peers and daily life (1.25 ± 0.91). Table (2)

The major stress events had been experienced by participants were worrying about grades obtained (2.47 ± 1.50), followed by inability to reach one's expectations and provide appropriate responses to teachers' and patients' questions (2.10 ± 1.42) and (2.01 ± 1.28) respectively. On the other hand, the minor events of stress as perceived by students were unfamiliarity with professional nursing skills (0.91 ± 1.10), difficulty to initiate a proper conversation with patients (0.82 ± 1.09), and the least factor resulted from inability to get along with other peers in the group (0.77 ± 1.23). Table (2)

According to factor analysis, stress from assignments and work load explained 47.5% of the variance and 2.85 eigenvalues, followed by stress resulted from providing patients care as 14.4% of the variance and 0.87 eigenvalue. Furthermore, stress from teachers and nursing staff represented 12.8% of the variance and 0.77 eigenvalue. The least domains were as follows; stress from peers and daily life, stress due to clinical area and stress because of the lack of knowledge and nursing skills 9.9%, 9.2% and 6.2% of variance and 0.593, 0.554 and 0.371 eigenvalues respectively. Table (3)

When analyzing the perceived stress scale's items, exploratory factor analysis identified eight factors accounted for 55.7% of total variance and 16.16 eigenvalue. Factor one explained 22.97% of the variance and 6.66 eigenvalue. While factor two explained 6.73% of the

variance and 1.95 eigenvalue. The remaining factors; three, four, five, six, seven and eight explained 5.54%, 4.84%, 4.54%, 3.9%, 3.69%, and 3.5% of the variance and 1.61, 1.40, 1.32, 1.13, 1.07 and 1.02 eigenvalues respectively. Table (5)

Table (6) explained the eight factors' agents that identified by exploratory factor analysis. Factor one constructed from the following events: Lack of experience and ability in providing nursing care and in making judgments, inability to provide patients with good nursing care, do not know how to help patients with physio-psycho-social problems, inability to provide appropriate responses to teachers' and patients' questions, worrying about not being trusted or accepted by patients or patients' family, and inability to reach one's expectations.

Factor two resulted in a response to the follows: Lack of care and guidance from teacher, feeling that: teachers do not give a fair evaluation on students, feeling stressed that teacher's instruction is different from one's expectations, medical staff lack empathy and are not willing to help, experience discrepancy between theory and practice, and do not know how to discuss patients' illness with teachers or nursing personnel.

Factor three grouped the following stressors: Experience competition from peers in school and clinical practice, feeling pressure from teachers who evaluate students' performance by comparison, inability to reach one's expectations, Cannot get along with other peers in the group, feeling that one's performance does not meet teachers' expectations, and inability to provide appropriate responses to teachers', and patients' questions. Factor four consisted of three attitudes such as: unfamiliarity with patients' diagnoses and treatments, unfamiliarity with professional nursing skills, and unfamiliarity with medical history procedures and terms. Factor five formed due to specific actions: unfamiliarity with the ward facilities, feeling stressed due to hospital environment where clinical practice takes place and feeling stressed from the rapid change in patient's condition. Factor six mostly happened as a result of experience difficulties in changing from the role of a student to that of a nurse, do not know how to communicate with patients, feel that the clinical practice requirements exceed physical and emotional endurance, and experience pressure from the nature and quality of clinical practice.

Factor seven resulted from feeling that; dull and inflexible clinical practice affects family and social life of individuals, the clinical practice requirements exceed physical and emotional endurance and feeling clinical practice affects involvement in extracurricular activities. The last one, factor eight suggested to be from the experience of a discrepancy between theory and practice and the differences between students' expectation and teachers instructions.

Discussion:

This study aimed to investigate perceived stress level among bachelor nursing students in clinical practice in faculties of Nursing in Khartoum State, Sudan. The majority (88.3%) of students were females, (59%) of them were less than 20 years. This is consistent with a study in Canada, less than 7% of the nursing workforce are men (Twomey and Meadus, 2016). The United State Census in 2008 found that 5.5% of people identifying themselves as nurses were men. (Auerbach et al., 2012) This may be explained by the deep-rooted perception that nursing as a job is associated with female gender.

Results revealed that; 39.27% of the nursing students had intermediate stress levels and 12.5% reported a high level of stress. This is inconsistent with Papazesis et al., 2008 (Papazisis et al., 2008) where the result revealed ; only 12.4% of nursing students in Greece perceived very high levels of stress, while nearly three quarters had mild levels. In contradiction with our findings; Amr et al., 2011 (Amr et al., 2011) revealed that; more than one third of nursing students perceived high levels of stress. Moreover, the present study consistent with Singh 2011 and Labrague 2014 findings where they suggested that; the stress level among nursing students ranged from moderate to high levels. (Singh et al., 2011, Labrague, 2014)

In addition, (51.7%) of nursing students experienced level of stress above the mean. These findings are consistent with previous studies in Jordan, which indicated that (52%) of nursing students have stress levels above the mean (Shaban et al., 2012, Al-Zayyat and Al-Gamal, 2014).

Levels of stress experienced by Sudanese nursing students (Mean = 1.52) is considered lower than that experienced by nursing students in Eastern countries such as Philippines and China and in Middle East countries such as Jordan and Saudi Arabia (M= 2.18), (M= 2.00), (M= 1.81) and (M= 2.3) respectively (Chiang et al., 2012, Shaban et al., 2012, Eswi et al., 2013, Labrague, 2014). Decreased level of stress among Sudanese nursing students could be because of the familiarity with clinical instructors and familiarity with the healthcare setting, and this could be attributed to the fact that most Sudanese people have been exposed to healthcare setting at some point in life, making healthcare setting familiar to nursing students when they join the college.

In more specific details, in clinical training, nursing students faced several stressors. Sudanese nursing students complained stress resulted from six domains which were; the practice area, assignments and workload, taking care of patients, teachers and nursing staff, lack of knowledge or skills and daily events with peers. Out of the six sources of stress, students recorded having stress levels above the mean in three of them (Stress from the area of practice, stress from assignments and workload and stress from taking care of patients) and below the mean in the rest. A similar study conducted in Hong Kong identified the same factors; stress from lack of professional knowledge, stress from assignments and workload and stress from taking care of patients were the most common stressors (Labrague, 2014). Stress from assignments and workload, stress from lack of professional knowledge and skills and Stress from the area of practice were also the most frequent sources of stress in Saudi Arabia and Philippines (Eswi et al., 2013, Labrague, 2014). The most common stressors in Jordan were related to assignments and workload, peers and daily life and stress from teachers and nursing staff. (Khater et al., 2014) These stressors could be reflected by the dynamic curriculum in the nursing field, more assignments and assays have been incorporated in the curriculum to enhance lifelong learning and improve critical and thinking skills.

From this, the consistency between current results and previous studies support each other. Stress resulted from the clinical area can be interpreted due to unfamiliarity during initial exposure to high fidelity infrastructure clinical areas which was considered as a challenge to be adapted by junior students. In addition, when environment and dealing with patients considered stressors, this can be resulted from fear of making mistakes either with materials such as machines or with patients during care providing, this potentiality may become stronger especially when those factors come together. Furthermore, besides fear of making mistakes, dealing with critical and infectious cases within contaminated and overcrowded area increase the possibility to be stressed due to fear of gaining infection or to make wrong procedure or behavior.

Moreover, being stressed related to assignments and workload was one of the strong stressors that face nursing students during clinical practice. Assignments may be considered by students as a monitoring tool, so, worrying about bad grades was reported as the number one stressor item in PSS. In addition, more assignments and workload requirements besides to clinical practice lead to increase the pressure on the students who have the ambition to gain proper practice skills and achieve high grades during their study. Increase credited hours is a

feature of medical and surgical subjects. Nursing students as they are newly exposed to a highly sophisticated technological environment combined with the stress of completing new unfamiliar assignments and paper work could have higher stress.

On the other hand, less common sources of stress revealed by students were stress from teachers and nursing staff, lack of knowledge or skills and daily events with peers. This findings consistent with the most common situation in Sudan whereas clinical instructors and nursing staff famous to be easier and familiar in dealing with students during clinical practice.

Further, the major stress events experienced by students were worrying about grades, inability to reach one's expectations and difficulty to provide appropriate responses to teachers' and patients' questions respectively. On the opposite, the minor events of stress perceived by students were due to inability to get along with other peers in the group, difficulty to initiate a proper communication with patients and being unfamiliar with professional nursing skills respectively. Nursing students in Sudan reported worrying about bad grades as the most stressful event. Ambition to emphasize acceptable grades or worrying about bad grades among students is a common sense and this issue is associated with academic achievement and competition during study life. This findings similarly revealed among Jordanian nursing students (Mrayyan, 2007, Shaban et al., 2012). While, the least stressful event suggested to be the inability to continue with peers in the group, whereas, seeking social support and communication with friends may be considered as a tool to reduce stress.

Factor analysis used to determine which sources of stress that have a strong correlation or similar constructs to act together as one domain. Analyzing the main categories of stress sources, it was revealed that; stress related to assignments and workload responsible of half (47.5%) of variance followed by providing care of patients which represented (14.44%) of variance as a total of two thirds 61.94% of total variance as the most stressful sources. In more details, eight factors summarized the different sources of perceived stress by nursing students during clinical training, whereas, these eight factors explain 55.71% of total variance.

According to present study, the eight major sources of stress labelled as the following: “stress resulted from assignments and workload”, “stress related to lack guidance and willing to help from teachers or clinical instructors and medical staff”, “stress experienced towards

evaluation by teachers as a tension regarding fear to have bad grades”, “stress perceived due to difficulty to familiar with professional skills and new medical terms as health history, diagnosis, and treatment”, “being stressed because of making hard to adapt with hospital environment, facility components and rapid change of patient’ condition”, “challenges that may be resulted from trying to act as a nurse in care providing, communication with patient and familiarizing with nature and quality of nursing care” also, “experiencing stress because students deem routine and inflexible clinical training may effect social life and extracurricular activities and need higher capabilities to be performed” and “stress from feeling lost between differences of instructions and the reality of practice and expectations”. These eight factors can be categorized into three main domains; academic, clinical and external sources of stress.

Gibbons investigated sources of stress among nursing students, demonstrated that; factor analysis identified three factors, which were labeled as; learning and teaching, placement-related and course organization explained 46.14% of the variance (Gibbons et al., 2008). Another study in harmony with our findings; Jimenez 2005, identified six factors, were labeled as stress from lack of professional knowledge and skills, stress from practical assignments and workload, stress from taking care of patients, which considered as a clinical source. Then stress from examinations of personal competence and stress from clinical environment and teachers as well as nursing staff, as an academic source. Stress from interference with daily life as an external source (Jiménez, 2005). Similarly with other studies (Sheu et al., 2002, Shipton, 2002, Eifried, 2003) which reported that; clinical sources of stress were more experienced by nursing students.

On the other hand, Lindop 1999 and Tully 2004 concluded that; academic sources of stress were most commonly experienced by nursing students. Moreover, factor analysis revealed academic load, clinical concerns, interface worries and personal problems as a factor. Whereas around 50% had a feeling of incompetence and lack of professional skill, 40% were stressed because of financial problem in the family (Lindop, 1999, Tully, 2004). Timmins and Kaliszer 2002 had reported five factors which emerged, as sources of stress amongst nursing students, it were academic, relationship with teacher and staff in the ward, financial constraints, and the death of a patient. (Timmins and Kaliszer, 2002)

The current study investigated stress which experienced by nursing students during initial clinical practice, so, stand to reason that participants had reported lack of knowledge and

difficulties or incompetency as the first perception towards clinical practice which may be due to the insufficiency of theoretical knowledge whereas students were not fully prepared.

Conclusion

More than half of the students had perceived intermediate to high levels of stress in clinical practice. Stress related to the area of practice, assignments and workload and patients' care were more frequently experienced by nursing students. Factor analysis concluded that: providing care of patients and assignments and workload had considered as a major sources of stress. Nursing students as they are newly exposed to high technological environments and different teaching modalities may need ample support and mentoring by clinical instructors and nursing staff. Therefore, minimizing assignments and workload is necessary in order to create a motivating clinical environment. Moreover, giving the students more time in clinical practice in one particular ward would familiarize them with the setting instead of scheduling them to short placements in several ward. Further researches will be needed to correlate such results with physio-psycho-social statuses of students as a further consequence of clinical stress.

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