Stress and Anxiety among Junior Nursing Students during the Initial Clinical Training: A Descriptive Study at College of Health Sciences, University of Bahrain

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Abstract **Background:** Anxiety and stress among nursing students are challenge for academic education and a need exists to explore the factors that contribute to such phenomena among Arab culture. **Objective:** To assess the anxiety and stress levels among junior nursing students at College of Health Sciences (CHS), University of Bahrain (UoB) during their initial clinical exposure. **Material and Methods:** A self-administered questionnaire was employed to gather data on perceived stress (5 points likert scale), perceived anxiety (4 points likert scale) and socio-demographic characteristics from 93 second year nursing students at CHS (a response rate of 77.5%). The total scores for each item were summed and average scores were calculated accordingly. Both univariate and multivariate analyses were undertaken in order to identify significant factors that influence anxiety and /or stress levels among students. The p-value of less than 0.05 was considered statistically significant. **Results:** About four-fifth of the respondents were female students. Most students had normal levels of anxiety while two-third reported moderate stress level. Female gender was the only significant factor that is related to stress in univariate as well as multivariate analyses. **Conclusion:** Nursing students at CHS had moderate stress level which would have a negative effect on the quality of their education and clinical practice. Further studies are needed to explore effective strategies to deal with anxiety and stress among junior and senior students.

Keywords: anxiety, clinical training, nursing student, stress

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1. Introduction

Nursing students' anxiety in different clinical settings had been addressed in many literatures; as anxiety can affect the students' learning and performance [1]. In nursing education, stress and anxiety among nursing students is not viewed as a new phenomenon. Many empirical studies dating back to the early 1970s investigated stress and anxiety among nursing students in the clinical learning environment.

Stress in nursing education, especially at a university, is identified as one of the most significant issues worldwide. Lazarus & Folkman defined stress as a meticulous relationship between the individual and the environment that is significant exceeding coping resources, while defined the anxiety as an ambiguous, annoying feeling that triggered by the exposure of prolonged stress and multiple stressors [2].

Literature addressed a variety of factors contributing to stress and anxiety among nursing students in the clinical learning environment. The first clinical exposure is considered as one of the most important factors that lead to anxiety and stress. In addition, fear of making mistakes during performing clinical procedures, faculty evaluation, lack of support by nursing staff, the inconsistency between what is taught in the classroom and what is practiced in the clinical setting [3].

Anxiety and the poor coping skills have been shown as a result of the stress in the learning environment; consequently, it has been interfering with nursing students' academic performance. Moreover, stress can affect negatively the nursing students' ability to master the clinical requirements, interact with patients, and achieve the learning outcomes [4,5].

2. Significance of the Study

College of Health Sciences (CHS) at University of Bahrain (UoB) was established in 1976. Approximately 2,000 nursing students had graduated from the college who are currently the backbone of the nursing services in Bahrain. Furthermore, it graduates a round 160 nursing students every year. Students express stress related to the

clinical environment that influences their contribution in the clinical learning. Some literature has addressed the factors causing anxiety and stress among junior nursing students, but at CHS little is known about those factors or their impact on nursing education. In addition, exploring the factors contributing to anxiety and stress among the junior nursing student would help the nursing faculty to work more effectively with the students in order to achieve the learning outcomes. Alzayyat & Al-Gamal pointed out that the majority of the studies that investigated the clinical stress and anxiety among nursing students during their clinical education were conducted in Europe [6] while few studies were conducted in the Middle Eastern region and there is a need to conduct more studies to clarify the effect of the cultural factors like the acceptable ways of stress expression on the nursing students' clinical stress experiences [7].

2.1. Objective of the Study

To assess the anxiety and stress levels among junior nursing students during their initial clinical exposure.

2.2. Research Questions

1. What is the anxiety level among junior nursing students during their initial clinical exposure?
2. What is the stress level among junior nursing students during their initial clinical exposure?
3. Which demographic factors are related to the anxiety and stress levels among junior nursing students?

3. Material and Methods

3.1. Research Design and Setting

A descriptive cross-sectional design was employed to conduct this study at College of Health Sciences, University of Bahrain.

3.2. Participants

The study targeted all junior second year students enrolled in the Bachelor of Science in Nursing (BSN) program, hundred twenty questionnaires were distributed to all students; of whom 93 responded, a response rate of 77.5%. No inclusion or exclusion criteria were set except being enrolled in first clinical course, second year BSN program.

3.3. Data Collection Tool

Self-administered questionnaire was used to gather data. It consisted of three parts: 1) Demographic Data, 2) Zung Anxiety Status Inventory, and 3) Perceived Stress Scale (PSS). Part I was for students' demographic data such as gender, age, and marital status. Part II was intended to assess junior nursing students' anxiety level, Zung Anxitey Status Inventory was used [8]. It is 4- points Likert scale: 1= A little of the time, 2= some of the time, 3= Good part of the time, and 4= Most of the time. It

included 22 items; the scores of the items were summed-up and averaged by dividing by the number of items. Means, standard deviations, medians and quartiles were computed. Part III was intended to assess junior nursing students' stress level and types of stressors; Perceived Stress Scale was used [9]. It is 5- points Likert scale: 0=never, 1=almost never, 2=sometimes, 3=fairly often, and 4=very often. It consists of 29 items grouped to six factors, labeled as follows: "Stress from lack of professional knowledge and skills "(3 items), "Stress from assignments and workload" (5 items), "Stress from taking care of patients" (8 items), "Stress from clinical environment" (3 items), "Stress from teachers and nursing staff" (6 items) and "Stress from peers and daily life" (4 items). The scores of the items were summed-up and then averaged by dividing the sum total by number of items. Means, standard deviations, and medians and quartiles were computed. The reliability of the Zung Anxitey Status Inventory scale and Perceived Stress Scale were tested in a pilot study conducted on 20 third year students through assessing its internal consistency. It showed good level of reliability with Cronbach Alpha Coefficients 0.749 and 0.874, respectively.

3.4. Procedure

The researcher met with the nursing students in groups in order to explain the purpose of the study and provided them with the needed instructions concerning the filling of the data collection form. Approximately 10-15 minutes were taken from each student to complete the questionnaire. The filled questionnaires were collected by the researcher and revised on-site to ensure completeness of the data. Data was collected over a three weeks period.

3.5. Statistical Analysis

Data analysis was done utilizing the statistical software SPSS version 20. Spearman rank correlation test was used for the inter-relations among quantitative and ranked variables. Linear regression analysis was used to identify the factors independently influencing nurse's knowledge and attitude score. The level of statistical significance was set at $p<0.05$.

3.6. Ethical Considerations

Before collecting the data, an official approval was obtained from the Committee of the Approval of Surveys and Questionnaires Applications at University of Bahrain. The researcher obtained an individual informed verbal consent to participate from each student after explaining to him/her the study aim. They were informed of their right to refuse or withdraw at any time with no questions asked. Total anonymity and confidentiality were guaranteed, with reassurance that the collected information would be used only for research purposes.

4. Results

The study sample consisted of 93 students, mostly female (79.6%) whose age ranged between 19 and 22

years with median 20 of years (Table 1). Only 8 (8.6%) of students were married.

Table 1. Demographic characteristics of nursing students in the study sample (n=93)

	Frequency	Percent
Gender;		
Male	19	20.4
Female	74	79.6
Age:		
<20	44	47.3
20+	49	52.7
Range	19-22	
Mean±SD	19.6±0.7	
Median	20.0	
Marital status:		
Single	85	91.4
Married	8	8.6

Table 2. Anxiety and perceived stress among nursing students in the study sample (n=93)

	Frequency	Percent
Zung anxiety scale:		
Normal (<44)	84	90.3
Mild/moderate (45-59)	9	9.7
STRESS from:		
Lack of professional knowledge and skills:		
Low (<1.33)	4	4.3
Moderate (1.34-2.66)	77	82.8
High (2.67+)	12	12.9
Assignments and workload:		
Low (<1.33)	4	4.3
Moderate (1.34-2.66)	60	64.5
High (2.67+)	29	31.2
Taking care of patients:		
Low (<1.33)	15	16.1
Moderate (1.34-2.66)	69	74.2
High (2.67+)	9	9.7
Clinical environment:		
Low (<1.33)	8	8.6
Moderate (1.34-2.66)	78	83.9
High (2.67+)	7	7.5
Teachers and nursing staff:		
Low (<1.33)	2	2.2
Moderate (1.34-2.66)	80	86.0
High (2.67+)	11	11.8
Peers and daily life:		
Low (<1.33)	14	15.1
Moderate (1.34-2.66)	64	68.8
High (2.67+)	15	16.1
Total perceived stress:		
Low (<1.33)	3	3.2
Moderate (1.34-2.66)	86	92.5
High (2.67+)	4	4.3

As demonstrated in Table 2, the majority of the students (90.3%) had normal level of the anxiety. While the perceived stress among the students showed that more than two third of them (82.8%) had moderate stress from lack of professional knowledge and skills, while more than half of the students (64.5) had stress from the assignments and workload. The stress from taking care of patients was considered as moderate stress in more than

two third of the students (74.2%). The majority of the students had moderate level of stress from the clinical environment & teachers and nursing staff (83.9%) and (86%) respectively. Generally, the table indicates moderate stress level among the students (92.5%).

Concerning relations between students' anxiety score and their demographic characteristics, Table 3 points to statistical significance associations with their gender (p=0.009) where females had higher anxiety scores. However, there were no statistically significant relationships between students' anxiety and their age and marital status.

As displayed in Table 4, statistically significant weak positive correlations were revealed between the attitude score and student's anxiety and the perceived stress.

As displayed in Table 5, statistically significant weak positive correlations were revealed between the anxiety score and the students' age with (r=0.549) while there were no statistically significant relationships between students' perceived stress and their age.

In multivariate analysis (Table 6), the female gender was identified as the only factor independently and significantly positively influencing their anxiety score. However, the model only explains about 10% of the variation in this score.

In multivariate analysis (Table 7), the anxiety score was not influenced by the perceived stress score. However, the model only explains about 30% of the variation in this score.

Table 3. Nursing students' anxiety scores according to their demographic characteristics

	Zung anxiety score		Mann Whitney Test	p-value
	Mean±SD	Median		
Age:				
<20	35.0±6.6	34.00		
20+	35.2±6.3	35.00	0.23	0.63
Gender;				
Male	31.5±4.8	32.00		
Female	36.0±6.5	35.00	6.77	0.009*
Marital status:				
Single	34.9±6.3	34.00		
Married	37.0±7.6	36.00	0.51	0.48

(*) Statistically significant at p<0.05.

Table 4. Correlation matrix of nursing students' perceived stress dimensions and anxiety scores

Perceived stress dimensions	Spearman's rank correlation coefficient					
	1	2	3	4	5	6
Zung anxiety scale	.309**	.529**	.381**	.492**	.304**	.354**
Perceived stress scale						
Lack of professional knowledge/ skills						
Assignments/work load	.366**					
Taking care of patients	.279**	.482**				
Clinical environment	.118	.429**	.423**			
Teachers/nursing staff	.173	.480**	.476**	.438**		
Peers and daily life	.105	.444**	.245*	.391**	.567**	

(*) Statistically significant at p<0.05, (**) Statistically significant at p<0.01.

Table 5. Correlation matrix of nursing students' total perceived stress and anxiety scores and their age

	Spearman's rank correlation coefficient	
	Anxiety scores	Perceived stress scores
Anxiety	.549**	
Age	.015	-.091

(*) Statistically significant at p<0.05, (**) Statistically significant at p<0.01.

Table 6. Best fitting multiple linear regression model for the anxiety score

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	β	Std. Error				Lower	Upper
Constant	26.96	2.93		9.217	<0.001	21.15	32.77
Female gender	4.51	1.59	0.29	2.839	0.006	1.36	7.67

r-square=0.10
Model ANOVA: F=8.06, p=0.006
Variables entered and excluded: age, marital status.

Table 7. Best fitting multiple linear regression model for the perceived stress score

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	β	Std. Error				Lower	Upper
Constant	.73	.20		3.735	<0.001	.34	1.12
Zung anxiety score	.04	.01	.59	6.901	<0.001	.03	.05

r-square=0.34
Model ANOVA: F=47.62, p<0.001
Variables entered and excluded: age, gender, marital status.

5. Discussion

Several researches have investigated the levels of anxiety and stress among nursing students in clinical training. From the results, it could be noticed that the level of stress changed according to students' seniority, and clinical areas they are distributed through their clinical posting. Nursing students are frequently exposed to different types of stressors during their education and training that affect directly or indirectly their learning and clinical performance. The nature of the practicum part of nursing education presents a challenge that may be considered as a reason which made students to experience anxiety and stress. Furthermore, practicum courses for nursing program by its nature has made the program become more stressful compared with other programs. As it is essential in preparing the nursing student to develop into professional nurse; the present study revealed generally normal level of anxiety with moderate stress level among the students in the study setting. This is observed in all six areas of perceived stress. The striking finding is that the score of the anxiety among nursing students was normal in 90.3% which indicates that the nursing students do not perceive the initial clinical training as a cause of anxiety for them. This was in congruence with the finding of Bayoumi & Elbasuny who found that nursing students have moderate level of anxiety [10].

Earlier studies have addressed the sources of stress among college students. Notably, class workload [11], and

clinical work [12]. The study found that the stress from insufficient professional knowledge and skills was considered as a moderate source of stress among 82.8% of them while 12.9% of the students considered it as a high source of stress. Sheu et al. reported similar finding where lack of professional knowledge was considered the significant stressor perceived by nursing students at the initial period of clinical training [13]. The present study confirms that one of the stressful aspects in clinical practice perceived by students was taking care of patient. The study found that 74.2% of the student perceived taking care of patients' was a moderate source of stress. On the same line, a study in Australia and New Zealand found that among various types of stressors, students perceived taking care of patients as one of the top three stressors [14]. This could be because of insufficient preparation for clinical training. Moreover, students might have a congested timetable that does not provide enough hours for library and preparation. Another possible explanation is that the pre-requisite courses may not have been completed by the students before starting their clinical training. In addition, students may lack the skills in taking care of patients with multiple health problems and managing unexpected situations in clinical areas. They could be scared of making mistakes and lack confidence in looking after their patients. These reasons could clarify why 'lack of knowledge and skills' and 'taking care of patients' are considered the two sources of stress usually perceived by the students.

Looking at the assignment and workload, the study found that stress from assignment and workload was perceived by 60% of nursing students as a moderate source of stress among them while 31.2% perceived it as a high source of stress. This is in line with the findings of Chan & Fong [15]. In view of congested time table along with all year round multiple evaluation tools, it is not surprising that the students did not have enough time to complete their theoretical courses.

The present study has also found that the clinical environment perceived as a source of stress among nursing students. This is in agreement with Burnard *et al.* who found that among nursing students clinical situations considered as a sources of stress assessed [16]. This may be explained as working in different medical, surgical, and critical care clinical settings require facing patients with multiple health problems and needs, and responding accurately and fast to any rapid change in a patients' condition. The study highlighted that stress from teachers and nursing staff are considered major sources of stress experienced by the students. This result is in agreement with the finding of Timmins & kaliszer who reported that the second common source of stress experienced by students was relations with clinical preceptors, clinical coordinators followed by relations with nursing staff on wards [17]. A plausible explanation may be that the students' relationships with their preceptors or the staff nurses is one of the most common and significant source of stress to nursing students.

Concerning the factors that may have a significant association with students' anxiety score, the study identified the gender (female) is the only factor that showed statistical significance (p 0.009). This is could be explained by the fact that in Arab Bahraini culture,

females are often engaged in other commitments and taking extra responsibilities, such as domestic home duties or when being married taking care of kids…etc. making them overloaded and anxious as well. Meanwhile, the study found weak positive correlation between the anxiety level and students' age.

6. Conclusion and Recommendations

The students in the study setting have normal level of anxiety whereas their stress levels tend to be moderate which is in line with literature. Moderate stress level would certainly have a negative impact on the quality of their practice, and accordingly on patients' outcomes. The nursing faculty should positively consider minimizing the stress of the students by preparing them before the clinical practice and familiarize them with the hospital polices. Furthermore, all faculty and clinical preceptors should be prepared to deal with the students as they have a direct impact on the students. Future studies need to explore the anxiety and stress among all nursing students at different levels and settings as well.

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