

Sources of Stress and Coping Behaviours in Clinical Practice among Baccalaureate Nursing Students

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Abstract

The purpose of this study is to assess stress level and sources of stress among nursing students in Jordan, as well as identifying the coping strategies utilized by nursing students. Participants included 597 nursing students from two faculties of Nursing in Jordan. A descriptive design was employed in this study. Participants were asked to complete demographic data, a perceived stress scale (PSS) and a coping behaviour inventory (CBI) scale. Results showed that of the participants, 286 (47.82%) had stress levels above the mean. The most common type of stressors perceived were related to assignment followed by stress related to patients' care and stress from nursing staff and teachers. The most common coping behaviour utilized by the students was problem solving. Clinical educators and clinical staff should appreciate the complexity of students' responses to stress, and as such, should not follow general principles in dealing with students in their clinical practice.

Keywords: Jordan, clinical education, stress, coping

1. Introduction

The nursing curriculum consists of clinical and theoretical courses that complement each other. The nursing curriculum is directed towards preparing professional and competent nurses who would apply their knowledge and skills throughout their work process. Thus, emphasis should be placed on students' clinical learning and training since it applies all the clinical skills; affective, psychomotor, and theoretical knowledge. In nursing education, the information and the skills acquired in the clinical setting with actual patients is far more beneficial than structured scenarios in the labs or in a class room. Clinical practice provides nursing students with the opportunity to gain the applied knowledge as well as psychomotor skills that are imperative for their professional development (Chesser-Smyth, 2005; Oermann & Gaberson, 2006; Sindir & Acaroglu, 2008). In most nursing curriculums, nursing students spend approximately half of their education within the clinical area; so it is alarming that they view the clinical practice as incredibly stressful (Chan, So, & Fong, 2009).

Stress among nursing students could have significant consequences (positive or negative), on both thinking and learning (Gibbons, Dempster, & Moutray, 2008; Kaplan & Sadock, 2000; Misra & McKean, 2000; Seyedfatemi, Tafreshi, & Hagani, 2007). It is known that 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 be a motivation for the students (Sindir & Acaroglu, 2008).

Previous literature has shown several factor-related stresses among nursing students (Chan et al., 2009; Sheu, Lin, & Hwang, 2002; Sindir & Acaroglu, 2008).

Experiencing uncertainty, fearfulness of making a mistake, lacking confidence, maintenance of healthy relationships with instructors, and most importantly, unfamiliarity with clinical settings, were found to be the most common sources of clinical stress (Seyedfatemi et al., 2007; Shaban, Khater, & Akhu-Zaheya, 2012; Sindir & Acaroglu, 2008). A systematic review of quantitative studies analysis, concerning sources of stress in nursing students, indicated that the sources of stress could be related to academic aspects (e.g. workload and study related problems) or to clinical aspects (e.g. fear of unknown; handling of technical equipment) (Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012). Nursing students in general, may share similar concerns and stressors which may possibly be internal or external. However, cultural beliefs and situational factors could also affect their levels of stress (Berman & Snyder, 2012)

Students' stress in their clinical practice can be altered and influenced by the coping strategies they choose to employ. Effective coping strategies help students to perform markedly better in regards to their studies; coping strategies also aid in relieving students' stress. It was observed that the best and most useful coping strategies are as follows: problem solving, transference (efforts to keep a positive attitude toward the stressful situation), and unrelenting optimism (Chan et al., 2009; Shaban et al., 2012).

Literature, examining stress and stress related factors of nursing students' clinical practice, are mostly conducted in Western cultures; limited research has been done in Eastern cultures. Jordan especially, had little studies concerning stress, stress related factors, and the coping methods of Jordanian Baccalaureate nursing students. To the researchers' knowledge, there were two previous studies among Jordanian nursing students at clinical practices (AbuTaria & Al-Sharaya, 1997; Shaban et al., 2012). AbuTaria and Al-Sharaya (1997) conducted a study in a sample of second year Jordanian nursing students. They concluded that stresses are mainly related to the rules and regulations of nursing schools; feelings of inadequacy; clinical instructors; cooperation with members of health teams; the gap between expectations and reality; and of course, fear. In our previous work (Shaban et al., 2012), we found that the sources of stress for students who perceived clinical practice as stressful, came mainly from assignments and clinical environments. However, the purpose of the previous studies was to assess stress levels among nursing students at their initial period of practice only, and did not examine stress levels during diverse years of study. Therefore, the aim of the current study is to assess nursing students' perceived stress, stress related factors in clinical practice (during different academic years of study), as well as identifying the coping strategies used by Jordanian nursing students.

In Jordan, the undergraduate nursing education has developed rapidly over the last forty years. The Jordanian nursing curriculum is composed of four years. Nursing curriculum is designed to meet the Ministry of Higher Education rules and regulations, which is responsible for the universities' program accreditations. In Jordan, nursing curriculum mandates that specific courses are offered in specific years so students in the second year of practice will be expected to finish Adult Health Nursing Practicum I and Practicum II. In the third year, the students are expected to finish Maternal Health Nursing and Paediatric Health Nursing, and in the fourth and final year they are expected to finish the Community Health Nursing, Advanced Adult Health Nursing and Training course.

Nursing students in Jordan are required to complete about 1664 contact hours of clinical practice throughout the program. Clinical instructors are usually equipped with a Bachelor's or Master's Degree, and have adequate clinical experience. Students generally go to their clinical in groups with a ratio of clinical instructors to students being 1: 8-10. Concurrent with each clinical course is a theoretical course that is usually taught by a teacher holding either a Doctorate or a Master's degree. During the first year of the program, students are taught the basic nursing skills in labs. Students start their clinical practice during the second year of study. Usually, students in their clinical practice rotate between different hospitals according to the courses they are enrolled in.

Our current study is designed to answer the following research questions:

1. What is the level of stress perceived by Baccalaureate nursing students during clinical practice?
2. What types of stressors are commonly experienced by nursing students during their clinical practice?
3. Are there significant differences between students who have high levels of stress and those who had low levels of stress with respect to: gender, clinical area, Academic year of study ?
4. What are the significant predictors of stress among Baccalaureate nursing students?
5. What coping strategies do nursing students frequently use to relieve their stress?

2. Methodology

2.1 Design

A descriptive, cross sectional, comparative design was used in this study to assess students' stress and sources of stress among nursing students as well as identifying the coping strategies used by students.

2.2 Participants and Setting

A convenient sample of 597 nursing students in various academic years of study, of the Baccalaureate Nursing Program, in two different faculties of nursing in North Jordan participated in the current study. The total number of nursing students in both universities is about 2170 including graduate and undergraduate students, since they have not been exposed to the clinical area. All students in the Baccalaureate-nursing program in their second, third and fourth year and in different courses in the two faculties were invited to participate in the current study. Using conventional power analysis of medium effect size; a power of .8 and a level of significance at .05 the required sample size is 84. The final sample size was 597.

2.3 Ethical Consideration

Permission for using the instruments from authors was obtained. The Institutional Review Board (IRB) approved this study and permission was obtained from the Deans of the two faculties. The researchers explained the purpose of the study and an information sheet with the details of the study was provided, and participants were assured that participation was voluntary. Confidentiality of the collected data was assured, unless the self-report questionnaires suggested that the participant was severely stressed and unable to cope, thereby, they were referred for support.

2.4 Instrument

The study utilized a self-reported questionnaire, which is composed of demographic data, a Perceived Stress Scale (PSS) and a Coping Behaviour Inventory (CBI). Demographic data included: age, gender, and years of education, interest in nursing and previous nursing experience. The Perceived Stress Scale (PSS) was developed by Sheu et al. (1997) in order to examine nursing students' stress levels and types of stressors. It consists of 29 items of 5-point likert scale. The five possible responses range from "never" to "always" and are scored from 0-4. Items in the scale grouped into six factors related to the sources of stress. The six factors include 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 the clinical environment (3 items). The total score range from 0-116. A lower score means lower degrees of stress while the higher score means higher levels of stress. Reliability of the instrument revealed Cronbach's alpha of .86-.89 (Chan et al., 2009; Sheu et al., 2002); and the content validity index was .94 (Chan et al., 2009). In the current study, Cronbach's alpha is (.90).

Coping behaviour Inventory (CBI) developed by Sheu et al. (2002) was used to identify nursing students' coping strategies. It consists of nineteen items of 5-point Likert-type (0=never;1= infrequently; 2=sometimes; 3=frequently; 4=always). The nineteen items of the scale are divided into four subscales. Subscales included avoidance behaviours (efforts to avoid the stressful situation) (6 items); problem-solving behaviours (efforts to manage or change the stress arising out of a stressful situation) (6 items); optimistic coping behaviours (efforts to keep a positive attitude toward the stressful situation) (4 items), and transference behaviours (efforts to transfer one's attention from the stressful situation to other things) (3 items). Higher scores of each factor indicate more frequent use, and greater effectiveness of a certain type of coping behaviour. The reliability of the instrument was assessed in different studies and revealed Cronbach's alpha coefficient of .76-.80 (Chan et al., 2009; Sheu et al., 2002). In the current study, Cronbach's alpha is (.76).

The English versions of instruments were used as participants are nursing students who read and write English. Permission to use both instruments was obtained from authors. Content validity for both instruments for nursing students in Jordan was established in a previous study by a panel of experts, and the reliability was established using Cronbach's Alpha, which was found to be 0.87 and 0.73 for PSS and CBI respectively (Shaban et al., 2012).

2.5 Data Collection

After IRB approval was obtained, data were collected between September 2010 and November 2010. This period of time was chosen to minimize the effect of some factors which could affect the stress levels of students such as exams period. The researchers approached students during clinical practice, so that the data collected could prove to be more representative for the perceived stress. The researcher approached the students at the end of their clinical practice and explained the purpose of the study. A cover sheet with the details of the study was provided for students. Students who were willing to participate in the study were asked to fill out the questionnaire, and then return it to the researcher immediately. Only students who had answered the questionnaires entirely were included in the definitive sample.

2.6 Data Analysis

Data were analyzed using the Statistical Package for Social Science (SPSS) for Window version 17. Descriptive statistics, appropriate to the level of measurement, were used to describe the study variables. In addition, inferential statistics; Bivariate (T-test; ANOVA) statistical test and Multivariate statistical analysis (Multiple regression) were used to answer the research questions.

3. Results

3.1 Participants' Characteristics

A total of 710 participants were approached, however, only 603 agreed to participate in the study. Of the 603 questionnaires, 6 were excluded due to missing data, resulting in a total number of 597 participants, and a response rate of 99.1%. Students' ages ranged between 19 and 29 years with a mean of 20.9 (1.4). More than two-thirds of the participants were female, constituting 65.2% (n=389). The highest number of participants (n= 235, 39.4%) was in their second academic year, and in the Adult Health Nursing I (n=181, 30.3%). For the most part, the participants (72.4%, n= 432) had an interest in the nursing profession, while few had previous experience in nursing (14.2%, n=85). Most of the participants (n=435, 72.9%) were taught by female instructors. Table 1 represents participants' demographic characteristics.

Table 1: Students Demographic Characteristics

Variable	Minimum	Maximum	Mean (SD)	Frequency (%)
- Gender				
- Male				208 (34.8%)
- Female				389 (65.2%)
- Age	19	29	20.9 (1.4)	
- Interest in Nursing				
- Yes				432 (72.4%)
- No				165 (27.6%)
- Year of Study				
- Second Year				235 (39.4%)
- Third Year				193 (32.3%)
- Forth Year				169 (28.3%)
- Course Enrolled				
-Adult Health Nursing I				181 (30.3%)
-Adult Health Nursing II				121 (20.3%)
- Pediatric				45 (7.5%)
- Maternity				87 (14.6%)
- Advanced Adult Nursing				66 (11.1%)
-Training				97 (16.2%)
- Had experience in nursing				
- Yes				85 (14.2%)
-No				512(85.8%)
- Instructor Gender				
- Male				162 (27.1%)
- Female				435 (72.9%)

N=597

3.2 Stress and Types of Stressors Perceived by Baccalaureate Nursing Students in their Clinical Practice

The mean of stress perceived by the participants was 1.56 ($SD = .63$). Of the participants, 286 (47.82%) had stress levels above the mean. The most common type of stressors perceived was stress from assignment work ($M = 2.12$, $SD = 0.88$), followed by stress of peers and daily life ($M = 1.65$, $SD = 0.91$) and from nursing staff and teachers ($M = 1.58$, $SD = 0.89$).

The major stress event students experienced was worrying about grades ($M = 2.62$, $SD = 1.34$), followed by experiencing pressure from the nature and quality of clinical practice ($M = 2.15$, $SD = 1.22$) and feeling that one's performance does not meet teachers' expectations ($M = 1.98$, $SD = 1.17$). Minor stress the students experienced was related to communication with patients ($M = .85$; $SD = 1.14$); inability to provide patients with good nursing care ($M = 1.18$; $SD = 1.07$); and being unfamiliar with medical history and terms ($M = 1.25$; $SD = 1.09$) (Table 2)

Table 2: Stressors Perceived by Nursing Students in Clinical Training

Stress factor	Factor ranking	Item ranking	Mean	SD
I. Stress from taking care of patients	5		1.3	.71
Lack of experience and ability in providing nursing care and in making judgments		14	1.49	1.03
Do not know how to help patients with physio-psycho-social problems		15	1.45	1.03
Unable to reach one's expectations		16	1.43	1.04
Unable to provide appropriate responses to doctors', teachers', and patients' questions.		26	1.29	1.05
Worry about not being trusted or accepted by patients or patients' family		19	1.38	1.19
Unable to provide patients with good nursing care		28	1.18	1.07
Do not know how to communicate with patients.		29	.85	1.14
Experience difficulties in changing from the role of a student to that of a nurse.		17	1.40	1.13
II. Stress from assignments and workload.	1		2.12	.88
Worry about bad grades		1	2.62	1.34
Experience pressure from the nature and quality of clinical practice		2	2.15	1.22
Feel that one's performance does not meet teachers' expectations.		3	1.98	1.17
Feel that the requirements of clinical practice exceed one's physical and emotional endurance.		6	1.90	1.19
Feel that dull and inflexible clinical practice affects one's family and social life		4	1.97	1.33
III. Stress from Lack of Professional Knowledge and skills	6		1.29	.94
Unfamiliar with medical history and terms		27	1.25	1.09
Unfamiliar with professional nursing skills		25	1.30	1.10
Unfamiliar with patients' diagnoses and treatments.		20	1.34	1.09
IV. Stress from the environment	4		1.43	.90
Feel stressed in the hospital environment where clinical practice takes place		24	1.32	1.23
Unfamiliar with the ward facilities		22	1.33	1.11
Feel stressed from the rapid change in patient's condition		11	1.64	1.21
V. Stress from peers and daily life	2		1.65	.91
Experience competition from peers in school and clinical practice		12	1.58	1.22
Feel pressure from teachers who evaluate students' performance by comparison.		5	1.92	1.32
Feel that clinical practice affects one's involvement in extracurricular activities		9	1.74	1.30
Cannot get along with other peers in the group.		21	1.34	1.28
VI. Stress from teachers and nursing staff	3		1.58	.89
Experience discrepancy between theory and practice		7	1.79	1.22
Do not know how to discuss patients' illness with teachers or medical and nursing personnel		18	1.40	1.22
Feel stressed that teacher's instruction is different from one's expectations		10	1.66	1.17
Doctors lack empathy and are not willing to help		13	1.51	1.26
Feel that teachers do not give fair evaluation on students.		8	1.76	1.38
Lack of care and guidance from teachers		23	1.33	1.28

3.3 Differences of Students' Gender, Course Enrolled, Academic Year and Levels of Stress

Using t tests to assess mean differences, results indicated no association between student's gender, instructor's gender, and stress perceived. However, the results demonstrated significant negative low correlation between a student's age and stress ($r = -.14$, $p < .05$). There were significant mean differences between students' interest (whether students possess an interest or not in nursing) and students' perception of stress ($t = 2.38$, $p < .05$).

ANOVA test was used to test mean differences of students in different academic years, courses enrolled, and stress levels. The results revealed that the student's academic year was directly associated with the student's stress level ($F = 8.34$; $df = 2, 594$, $p < .05$). Further analysis with Bonferroni post-hoc test showed that students in the second year had significantly more stress ($M = 1.70$) than students in the third ($M = 1.51$) and fourth ($M = 1.45$) academic year. Courses students enrolled in were found to be closely related to their stress levels. ($F = 7.75$; $df = 5, 591$, $p < .05$). Further analysis with the Bonferroni post-hoc test showed that students enrolled in Adult Health Nursing I ($M = 1.77$) course had significantly more stress than students enrolled in Adult Health Nursing II ($M = 1.42$), Paediatric ($M = 1.66$), Maternal Child Health ($M = 1.51$), Critical ($M = 1.33$), and Training course ($M = 1.52$).

3.4 Predictors of Stress Among Baccalaureate Nursing Students

Regression analysis was used to assess the predictors of stress which students may encounter. The overall model analysis accounted for 8.2 % of the variance in student's stress level, which was significant ($p < .05$). However, in the first model, the student's age and interest in studying nursing, contributed significantly to the model ($p < .05$). The older the student and the more interest in studying nursing, the lower the stress a student encounters. In the second model, however, having an interest in studying nursing and being in the second year significantly contributed to the model ($p < .05$), whereby students' stress was less for students in fourth year compared to those in second or third year. In the third model, possessing an interest in studying nursing, and being in the Adult Health Nursing I course contributed to the model ($p < .05$). Stress level was higher among students enrolled in Adult Health Nursing I course compared to students enrolled in Adult Health Nursing II or advanced adult nursing course.

3.5 Coping Behaviours' Students Utilized in Clinical Experience

The most common coping behaviour utilized by the students was problem solving ($M = 2.4$; $SD = 0.87$), followed by staying optimistic ($M = 2.3$; $SD = 0.8$) and transference ($M = 2.11$; $SD = 0.99$). Avoidance was less frequently utilized ($M = 1.4$; $SD = 0.76$) (Table 3). The most common coping behaviour of the students was optimism, and having a positive attitude when dealing with everyday issues in life ($M = 2.61$, $SD = 1.26$); to employ past experiences to solve problems ($M = 2.53$; $SD = 1.17$); to see things objectively ($M = 2.48$; $SD = 1.14$); to adopt different strategies to solve problems ($M = 2.46$; $SD = 1.18$); and to set up objectives to solve problems ($M = 2.45$; $SD = 1.13$) (See Table 3).

Table 3: Coping Behaviours Students' Utilized

Factor/item	Factor ranking	Item ranking	Mean	SD
I. Avoidance	4		1.40	.76
To avoid difficulties during clinical practice.		14	1.78	1.30
To avoid teachers.		18	1.09	1.27
To quarrel with others and lose temper.		19	.79	1.24
To expect miracles so one does not have to face difficulties.		17	1.14	1.20
To expect others to solve the problem.		16	1.53	1.28
To attribute to fate.		11	2.14	1.46
II. Problem Solving	1		2.4	.87
To adopt different strategies to solve problems.		4	2.46	1.18
To set up objectives to solve problems		5	2.45	1.13
To make plans, list priorities, and solve stressful events.		8	2.42	1.16
To find the meaning of stressful incidents.		9	2.35	1.13
To employ past experience to solve problems.		2	2.53	1.17
To have confidence in performing as well as senior schoolmates.		6	2.4	1.23
III. Stay Optimistic	2		2.30	.80
To keep an optimistic and positive attitude in dealing with everything in life.		1	2.61	1.26
To see things objectively.		3	2.48	1.14
To have confidence in overcoming difficulties.		7	2.44	1.13
To cry, to feel moody, sad, and helpless.		15	1.62	1.41
IV. Transference	3		2.11	.99
To feast and take a long sleep.		13	1.96	1.37
To save time for sleep and maintain good health to face stress.		12	2.12	1.21
To relax via TV, movies, a shower, or physical exercises.		10	2.26	1.36

4. Discussion

This study assesses nursing students' perceived stress, stress related factors in clinical practice at different academic years of study, as well as identifying the coping strategies used by Jordanian nursing students. Our study gives an insight into Jordanian Baccalaureate nursing students' stress and their coping strategies. The study findings suggested that approximately half of participants have a stress level above the mean. This is in harmony with the findings of a previous study, which was conducted among Jordanian nursing students in their initial period of clinical practice, which indicated that fifty-two percent of nursing students have stress levels above the mean (Shaban et al., 2012).

Levels of stress among Jordanian nursing students is considered rather low compared to nursing students in Western countries and in other countries (Chan et al. , 2009, Sheu et al., 2002). In the current study, out of the six stress related factors, students scored as having stress levels below the mean in three of them (stress of the environment; stress of taking care of patients and stress from lack of professional knowledge and skills). However, it might be difficult to compare stress levels between different populations and different situations. According to a trans-cultural model, the individual's interpretation of a situation to be stressful or not, could be explained by individual's perceptual and cognitive processes (Strauss & Hutton, 1983).

We found that the total stress score varies throughout the years. Senior nursing students have less stresses than junior students. Results of this study are consistent with previous studies, which emphasize the fact that as students obtain more experience through their studies, they perceive less stress (Chan et al., 2009; Kirkland, 1998; Sheu et al., 2002). Furthermore, stress levels seem to be related to the types of courses. In our study, we found that students who were enrolled in Adult Health Nursing I Practicum have the highest levels of stress. Surprisingly, we learned that students enrolled in Training courses (fourth year students) experience much more stress than students enrolled in Adult Health Nursing Practicum II (second year students) and Maternal Child Health (third year students). This might be related to instructors' expectations from those students as they are being considered to have all the skills and knowledge to act as a registered Nurse. Towards graduation, nursing students are expected to be acting as working nurses, which might increase their stress as they strive to meet others' expectation. What's more is that they perceive themselves to be subjected to criticism from working nurses who expect them to be more professional and to act as working nurses.

Consistent with other studies, the current study results show that the stress faced by Jordanian nursing students are mainly from assignment work, followed by stress related to patients' care (Chan et al., 2009, Shaban et al., 2012, Sheu et al., 2002). However, sources of stress vary throughout years of study. For example, an analysis of current study indicated that Junior nurses' stress is mainly related to having assignments followed with stress from taking care of patients, whereas Senior nursing students' stress is from taking care of patients and from other nurses. These findings indicated that junior nursing students as they are newly exposed to a highly technological environment combined with the stress of completing new unfamiliar assignments and paper work, could have higher stress. On the other hand, it was noticed that senior nursing students, as they gained more knowledge and skills became more stressed about not being able to take care of patients as was expected by their instructors, as well as working nurses.

Another point that is certainly worth mentioning is that, the school of nursing in Jordan and as a teaching methodology relies on hiring preceptors for nursing students at the senior level. The use of preceptors to assist in teaching nursing students clinical skills is documented in the literature (Forneris & Peden-McAlpine, 2009). Although preceptors might stimulate students' critical thinking (Forneris & Peden-McAlpine, 2009) they may also increase the work load on students in terms of taking care of patients more than clinical instructors working at school. Moreover, students may consider preceptors as outsiders from the faculty and being unfamiliar with their teaching style, they could perceive them as a source of stress.

Inconsistent with other literature, our results revealed that nursing students might use coping strategies based on the course they are enrolled in and their academic year (Pulido-Martos et al., 2012). More specifically, students' nurses who were in their second year of practice were found to be using avoidance as coping strategies more than senior nurses or students who are enrolled in advanced adult nursing courses. Whereas there were no significant differences found on the other coping mechanism. Since nurses' students at their initial contact are less confident about their knowledge and skills, they attempt to avoid situations in clinical practice.

Students during Advanced Adult Health Nursing use the avoidance behaviour the least, although the unit is complicated and they lack experience. Being exposed to an unfamiliar environment, combined with seniority, motivates them to learn more and to be opportunistic. On the other hand, when it comes to additional coping strategies such as optimism and transference, neither type of course, nor academic year was found to have an influence. Coping strategies have a relation with socio-cultural factors more than clinical practice (Seyedfatemi et al., 2007). For example, avoidance as a coping mechanism might relate to the personality of the student as well as the way they grow up. Further research is needed to explore the impact of socio-cultural factors on a student's choice of coping strategies.

Predictors of stress in this study show that nursing students have an interest in nursing and as they finish their Adult Health Nursing course, become far less stressed. This can be explained with the concept of internal demand and external demand which was presented by Strauss and Hutton (1983). It indicated that there is an internal demand such as basic needs, self-esteem, and self-concept that affect student appraisal of the situation as well as their response to the situation. This is also explained via locus of control concept. In this context, it can be seen as those students who have an interest in nursing have more control over the situation and this gives them a sense of self confidence as well (Strauss & Hutton, 1983).

5. Implications

Our findings may be helpful for clinical educators and clinical staff in appreciating the complexity of students' responses to stress and should not follow general principles in dealing with students in their clinical practice. More specifically, findings indicated that junior nurses have a stress level from assignment and from clinical environment as well. Clinical instructors need to acknowledge that junior students, as they are newly exposed to high technological environments, need much support in their clinical learning. In addition, they are supposed to complete an assignment that needed by a due date. Therefore, minimizing assignments and the work load for junior nursing students is necessary in order to create a motivating clinical environment and to allow them more time to explore this high technological 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 more than one ward.

On the other hand, senior students seemed to use avoidance coping mechanisms which might indicate that they lack self-confidence and empowerment to practice more independently. Therefore, clinical courses taught to senior nurses should encourage and facilitate the concept of independence among them. For example, training courses might be taught as independent courses with specific working hours to be accomplished thereby allowing them to practice as working nurses.

Understanding and identifying patterns of students' coping strategies is crucial in promoting a healthy supportive learning environment. Faculty members and clinical instructors should build a rapport relationship with their students so as to be able to understand their personalities and appreciate the individuality of each student. As clinical instructors, understanding how their students cope with stress can play a major role in promoting a supportive healthy environment. Finally, instructors need to give continuous and more positive feedback along with the negative ones.

6. Limitations

This study is subject to some limitations that may have influenced the results of the study. This study used a self-reported questionnaire, which may increase the potential of reporting bias, due to personal interpretations of items in questionnaire. In addition, faculty characteristics and an instructor's teaching style were not taken into consideration, although it might affect the perceived level of stress. Further, this study did not look at stress levels associated with the clinical setting itself, which could be a stress related factor in and of itself. A methodological limitation of this study is that cross-sectional provides information about stress at one point in time, whereas stress level might be varied at a different time, so longitudinal data collection would be an appropriate methodology to overcome these limitations. Finally, convenient sampling as well as collecting data from two universities in Jordan, limits the generalizability of the findings to the sample of this study.

7. Conclusion

The aim of this descriptive study was to assess stress levels and sources of stress among Baccalaureate Jordanian nursing students as well as identifying the coping strategies employed by students during their clinical practice. These study results emphasize that nursing students agonize about assignments and grades and that might inhibit positive clinical learning experiences. Regardless, clinical educators can reduce their students' levels of stress by encouraging problem solving as a coping strategy and through open communication; thus, they could help their students be more optimistic. The multidimensionality of stress emphasizes the need for further research including the socio-cultural variables that could have an influence in both the stress and coping mechanisms utilized.

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References

- AbuTaria, H., & Al-Sharaya, H. (1997). Stresses Report by Second Year Nursing Students. *Nurse Educator*, 22(5), 28-33.
- Berman, A., & Snyder, S. (2012). *Kozier & Erb's Fundamental of nursing concept process and practice* (9th ed ed.). New Jersey: Pearson Prentice Hall.
- Chan, C., So, W., & Fong, D. (2009). Hong Kong Baccalaureate Nursing Students' Stress and Their Coping Strategies in Clinical Practice. *Journal of professional nursing : official journal of the American Association of Colleges of Nursing*, 25(5), 307-313.
- Chesser-Smyth, P. (2005). The lived experiences of general student nurses on their first clinical placement: A phenomenological study. *Nurse Education in Practice*, 5(6), 320-327.
- Forneris, S., & Peden-McAlpine, C. (2009). Creating context for critical thinking in practice: the role of the preceptor. *Journal of Advanced Nursing*, 65(8), 1715-1724.
- Gibbons, C., Dempster, M., & Moutray, M. (2008). Stress and eustress in nursing students. *Journal of Advanced Nursing*, 61(3), 282-290.
- Kaplan, H., & Sadock, B. (2000). *Learning Theory: Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry*. Philadelphia: Lippincott Williams and Wilkins.
- Kirkland, M. (1998). Stressors and coping strategies among successful female African American baccalaureates nursing students. *Journal of Nursing Education*, 37, 5-12.
- Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies*, 16(1), 41-51.
- Oermann, M., & Gaberson, K. (2006). *Evaluation and Testing in Nursing Education* (2nd ed.). New York: Springer.
- Pulido-Martos, M., Augusto-Landa, J., & Lopez-Zafra, E. (2012). Sources of stress in nursing studies: a systematic review of quantitative studies. *International Nursing Review*, 59(1), 15-25.
- Seyedfatemi, N., Tafreshi, M., & Hagani, H. (2007). Experienced stressors and coping strategies among Iranian nursing students. *BMC Nursing*, 6(11), 1-10.
- Shaban, I., Khater, W., & Akho-Zaheya, L. (2012). Undergraduate nursing students' stress sources and coping behaviors during their initial period of clinical training: a Jordanian perspective. *Nurse Education in Practice*, 12(4), 204-209.
- Sheu, S., Lin, H., & Hwang, S. (2002). Perceived stress and physio-psycho-social status of nursing students during their initial period of clinical practice: the effect of coping behaviors. *International Journal of Nursing Studies*, 39(2), 165-175.
- Sheu, S., Lin, H., Hwang, S., Yu, P., Hu, W., & Lou, M. (1997). The development and testing of perceived stress scale of clinical practice. *Nursing Research*, 5, 341-351.
- Sindir, M., & Acaroglu, R. (2008). Reliability and validity of Turkish version of clinical stress questionnaire. *Nurse Education Today*, 28(6), 737-743.
- Strauss, S., & Hutton, E. (1983). A Framework for conceptualizing stress in clinical learning. *Journal of Nursing Education*, 22(9), 367-371.