

## Original Article

## Determination of the Stress Experienced by Nursing Students' During Nursing Education

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### Abstract

**Objective:** This study was carried out to determine of the stress experienced by nursing students' during nursing education.

**Methodology:** The study was conducted a descriptive and cross-sectional type of study carried out with 318 nursing students in a city in the Southeastern Anatolia Region in Turkey. In the collection of the data, 'Student Information Form' and 'Stress in Nurse Education Questionnaires (SINE)' were used. For the analysis of the data, descriptive statistics, Student t test, One-way ANOVA and Pearson correlation were used. The significance level was set at  $p < 0.05$  for all statistical tests.

**Results:** 52.2% of the students who participated in the questionnaire were male and the average age was  $21.86 \pm 1.97$ . It was also determined that 47.2% of the students who participated in the study were the second year students, 84.0% received normal education, 98.4% were single, 51.9% did not select the profession willingly, and 64.8% were not satisfied with school life. The students, who participated in the study, obtained a mean score of  $29.50 \pm 8.0$  from the subscale of academic stress and a mean score of  $29.24 \pm 8.48$  from the subscale of practical stress in the 'Stress in Nurse Education Questionnaires (SINE)' and obtained a total scale mean score of  $58.75 \pm 15.36$ . It was determined that there was a positively strong correlation between the mean scores obtained by the students from the academic stress subscale of the SINE, their mean scores of the practical stress subscale and the total mean scores of the scale ( $p < 0.01$ ).

**Conclusions:** As a result of this study, it was determined that the stress experienced by the students during their nursing education was a little above moderate level.

**Key Words:** Nursing student, nursing education, stress.

### Introduction

The purpose of nursing education which includes not only theoretical knowledge, but also clinical education skills is to develop a patient's skill of solving health problems by using the knowledge, attitudes and skills of students. On the other hand, this process may become a source of stress for students apart from creating positive effects (Money, 2007; Kang, Choi & Ryu, 2009). Defined by the World Health Organization as the 'Epidemic of the 21st Century'; stress is a state of experiencing stressors causing uneasiness, dissatisfaction, excitement, strain or compulsion

in the individual and also reactions to these stimuli (Fink, 2017).

Stress is a universal problem among nursing students. In the studies, it has been determined that nursing students have higher levels of stress compared to the general population and students in other health disciplines and they are exposed to a greater stress (Tully, 2004; Papazisis et al., 2008; Jimenez, Navia- Osorio & Diaz, 2010; Labrague et al., 2018; Simonelli-Munnoz et al., 2018).

During nursing education, nursing students are exposed to various stress factors that may hinder

their learning and performance either directly or indirectly (Jimenez, Navia- Osorio & Diaz, 2010; Oner Altiook & Ustun, 2013; Labrague, 2013, Sakellari et al., 2018). It has been determined that nursing students have three main stress factors as academic stressors (such as test and evaluation, fear of education failure, work load problems), clinical stressors (such as working, fear of making a mistake, negative respond to patients' death or pains, relations with other members of organization) and personal / social stressors (such as economic problems, imbalance between the housework / school study etc.) (Labrague, 2013; Oner Altiook & Ustun, 2013; Blomberg et al., 2014).

In the study by Labrague (2013) it was found that nursing students experienced significant levels of stress and intense stress affected their psychosocial experiences and health negatively. Intense stress experienced by students decreases their academic achievement by ruining their competence of thinking and decision making (Maville, Kranz & Tucker, 2004; Bedewy, 2015) and affects their health negatively (causing hypertension, migraine, tachycardia, high cholesterol, obesity, sleep disorders, immunodeficiency, gastrointestinal problems etc.,) (Cam & Nur, 2015; Jordan, Khubchandani & Wiblishauser, 2016; Gu & Xie, 2018).

It is also indicated that nursing students who experience high levels of stress are more depressive, anxiety and suicidal (Yamashita, Saito & Tako, 2012; Cheung et al., 2016). Nursing students who are exposed to negative effects of stress are unable to benefit from their education at expected level and the stress hinders them from becoming qualified health care implementers of the future (Edwards et al., 2010).

As a consequence, stress is inevitable and ineliminable, but coping with stress may help students to have a good success in their academic and social life (Mahmoud et al., 2012; Papazisis et al., 2014). In order for a student to acquire desired knowledge, skills, and values throughout nursing education, it is primarily required to understand experiences she or he has and perceives as stress in this process and determine the causes of stress. By this means, the stressors caused by students' education will be determined and minimized and thus more equipped nursing students will be ensured to graduate.

**Aims of the Study:** This study was carried out to determine of the stress experienced by nursing students' during nursing education.

**The present study sought answers to the following questions:**

1. *What are the levels of the stress experienced by nursing students' during nursing education?*

2. *What is the relationship between the levels of stress experienced during nursing education and socio-demographic characteristics of nursing students'?*

## **Material and Method**

### **Study Design**

The study was designed as a descriptive and cross-sectional research.

### **Setting and Sample**

This study was conducted in a city in the Southeastern Anatolia Region. The study population consisted of nursing students spring semester of the 2014–2015 academic year. The study sample consisted of students who agreed to participate in the study and answered all of the questions (n = 318). Response rate was 66.94%.

### **Participants' inclusion and exclusion criteria**

1. To agree to participate in the study
2. No loss of sense of sight and hearing
3. Open to communication and collaboration
4. Students who do not have a psychiatric story

### **Data Collection**

Data for the current study were collected by means of 'Stress in Nurse Education Questionnaires (SINE)' and a 'Student Information Form' developed by the researchers following a comprehensive review of the literature (Begley & Glacken, 2004; Tully, 2004; Money, 2007; Papazisis et al., 2008; Edwards, 2010; Jimenez, Navia- Osorio & Diaz, 2010; Yamashita et al., 2012; Labrague, 2013). The student information form inquired socio-demographic characteristics of the nursing students involved in the study. Data were collected simultaneously using a questionnaire form under the supervision of the researchers when the students were in the classroom. The application lasted approximately 20-25 minutes.

## Measurements

### Student Information Form

The student information form included 22 questions on the students' characteristics, age, gender, class, learning style, married status, working status, health status, economic status, voluntary choice of nursing as a job, satisfaction with school life, school success and family related issues.

### Stress in Nurse Education Questionnaires (SINE):

SINE the questionnaire has two subdimensions and 32 items, answered on a 4-point Likert-type scale. It was developed by Rhead (1995) as a modified form of the *Nursing Stress Scale*, which was developed by Gray-Toft and Anderson (1981). This scale is expressed score 3 is 'very stressful for me' and score 0 is 'not stressful for me'. The subdimensions are as follows: 'Practical stress: Items 4, 5, 7, 9, 11, 13, 15, 16, 18, 19, 21, 24, 25, 27, 29, 32', 'Academic stress: Items 1, 2, 3, 6, 8, 10, 12, 14, 17, 20, 22, 23, 26, 28, 30, 31'. The score range for this questionnaire is 0–96, and higher scores indicate greater stress. The factors together explain 37.1% of the total variance for the original study (Rhead, 1995). The validity and reliability of the Turkish version of the SINE were established by Karaca in 2014 with a Cronbach alpha value of 0.93. The Cronbach alpha for the current study was calculated as 0.87.

### Ethical Consideration

Ethical approval was granted by the *Ethical Committee for Non-Invasive Clinical Research at Dicle University* (2015/245) and written approvals were obtained from the directors of the schools included in the study. In addition, upon being informed about the project orally all the nursing student provided the researchers with their written consents to participate in the study.

### Data Analysis

The SPSS Statistics Packet Program was used in the data analysis for the descriptive statistics, Student t test, One-way ANOVA and Pearson correlation. The significance level was set at  $p < 0.05$  for all statistical tests.

### Results

Age, number of siblings and general academic grade-point averages (GAGPA) of the students

participating in the study were determined respectively as  $21.86 \pm 1.97$ ,  $6.71 \pm 2.61$ , and  $69.09 \pm 5.36$ . 52.2% of the students were male, 47.2% were the second year students, 84.0% received normal education, 98.4% were single, 95.9% were unemployed, and 46.2% were residing in dormitories. It was determined that 64.8% of the students had a nuclear family, 56.0% had an illiterate mother, 97.5% had an unemployed mother, 41.8% a primary school graduate father, 91.2% had a family that lived in the Southeastern Anatolia Region, 52.8% were residing in the city center, and 40.9% had a low income. It was also determined that 18.6% of the students who participated in the study were smokers, 2.8% used alcohol, 59.4% had a good health condition, 51.9% did not select the profession willingly, and 64.8% were not satisfied with school life (Table 1).

The students, who participated in the study, obtained a mean score of  $29.50 \pm 8.0$  from the subscale of academic stress and a mean score of  $29.24 \pm 8.48$  from the subscale of practical stress in the 'Stress in Nurse Education Questionnaires (SINE)' and obtained a total scale mean score of  $58.75 \pm 15.36$  (Table 2). It was determined that there was a positively strong correlation between the mean scores obtained by the students from the academic stress subscale of the SINE, their mean scores of the practical stress subscale and the total mean scores of the scale ( $p < 0.01$ ) (Table 3).

The difference between the variables of gender, mother's educational background, father's educational background, father's working condition, and smoking and the mean scores obtained by the students, who participated in the study, from the academic stress subscale, practical stress subscale, and the overall scale was found to be statistically significant ( $p < 0.05$ ) (Table 4). On the other hand, it was determined that there was no statistically significant difference between the variables of class, learning type, marital status, working condition, residence place, family type, mother's occupation, region where the family lived, residence place of family, economic condition, the state of using alcohol, medical condition, the state of selecting the profession willingly and the state of being satisfied with school life and the mean scores obtained by students from the subscales of academic stress, practical stress and the overall scale ( $p > 0.05$ ).

**Table 1: The Socio-Demographic Characteristics of The Nursing Students (n:318)**

<b>Socio-demographic characteristics</b>	<b>Mean<math>\pm</math>SD</b>	<b>Min-Max</b>
<b>Age</b>	21.86 $\pm$ 1.97	19-32
<b>Number of siblings</b>	6.71 $\pm$ 2.61	1-22
<b>General Academic Grade Average</b>	69.09 $\pm$ 5.36	32-85.70
	<b>n</b>	<b>%</b>
<b>Gender</b>		
Female	152	47.8
Male	166	52.2
<b>Class</b>		
2nd	150	47.2
3rd	85	26.7
4th	83	26.1
<b>Learning type</b>		
Daytime education	267	84.0
Night education	51	16.0
<b>Marital status</b>		
Married	5	1.6
Single	313	98.4
<b>Working condition</b>		
Working	13	4.1
Not working	305	95.9
<b>Residence place</b>		
With family	62	19.5
With friends at home	104	32.7
Dormitory	147	46.2
Next to relatives	5	1.6
<b>Family type</b>		
Nuclear family	206	64.8
Extended family	105	33.0
Fragmented family	7	2.2
<b>Mother's educational background</b>		
Illiterate	178	56.0
Literate	44	13.8
Primary education	86	27.0
High school	10	3.1
<b>Mother's working condition</b>		
Employed	8	2.5
Unemployed	310	97.5
<b>Father's educational background</b>		
Illiterate	44	13.8
Literate	60	18.9
Primary education	133	41.8
High school	52	16.4
University	29	9.1

<b>Father's working condition</b>		
Employed	159	50.0
Unemployed	159	50.0
<b>Region where the family lived</b>		
Mediterranean Region	11	3.5
Eastern Anatolia Region	15	4.7
Blacksea Region	1	0.3
Southeast Region	290	91.2
Central Anatolia Region	1	0.3
<b>Residence place of family</b>		
City center	168	52.8
Countryside	94	29.6
Village	56	17.6
<b>Economic condition</b>		
Low	130	40.9
Moderate	85	26.7
High	103	32.4
<b>Smoking</b>		
Yes	59	18.6
No	259	81.4
<b>Alcohol</b>		
Yes	9	2.8
No	309	97.2
<b>Medical condition</b>		
Very good	40	12.6
Good	189	59.4
Middle	80	25.2
Bad	9	2.8
<b>The state of selecting the profession willingly</b>		
Yes	153	48.1
No	165	51.9
<b>The state of being satisfied with school life</b>		
Yes	112	35.2
No	206	64.8

**Table 2. Stress in Nurse Education Questionnaires (SINE) and Subscale Scores**

Score Mean	N	Minimum	Maksimum	Mean±SD
Stress in Nurse Education Questionnaires (SINE)	318	14.0	96.0	58.75±15.36
Academic Stress Subscale	318	3.0	48.0	29.5±8.0
Practice Stress Subscale	318	3.0	48.0	29.24±8.48

**Table 3. Relationship Between Stress in Nurse Education Questionnaire (SINE) and Its Subdimensions (n=318)**

SINE		SINE Academic	SINE Practical	SINE Total
Academic stress	r			
	p	1		
	r	0.735**	1	
Practical Stress	p	0.000		
Total	r	0.927**	0.935**	1
	p	0.000	0.000	

\*\*p<0.01

**Table 4. The Distribution of Stress in Nurse Education Questionnaires Scores of Nursing Students' in Terms of Their Characteristics (N=318)**

Socio-demographic characteristics	Academic Stress (Mean±SD)	Practice Stress (Mean±SD)	SINE (Mean±SD)
<b>Gender</b>			
Female	31.17±0.66	30.91±0.67	62.08±1.25
Male	27.98±0.58	27.71±0.65	55.70±1.13
<b>p</b>	<b>0.000</b>	<b>0.001</b>	<b>0.000</b>
<b>Mother's educational background</b>			
Illiterate			
Literate	28.21±7.86	28.35±8.09	56.56±14.82
Primary education	30.29±8.68	30.11±8.68	60.40±16.18
High school	31.24±7.57	30.22±9.08	61.46±15.62
	34.20±7.08	32.90±7.83	67.10±13.45
<b>p</b>	<b>0.05</b>	0.14	<b>0.02</b>
<b>Father's educational background</b>			
Illiterate			
Literate	27.15±7.92	28.47±8.22	55.63±15.11
Primary education	28.80±7.48	28.20±7.47	57.00±13.65
High school	29.37±7.76	29.23±9.16	58.60±15.74
University	32.55±8.34	31.57±8.06	64.13±15.67
	29.68±8.56	28.44±8.02	58.13±15.38
<b>p</b>	<b>0.01</b>	0.24	<b>0.04</b>
<b>Father's working condition</b>			
Employed	29.81±7.89	29.03±8.63	58.84±15.33
Unemployed	29.20±8.13	29.45±8.35	58.66±15.43
<b>p</b>	<b>0.01</b>	0.24	<b>0.04</b>
<b>Smoking</b>			
Yes	28.52±8.11	26.40±8.12	54.93±14.82
No	29.73±7.98	29.89±8.44	59.62±15.37
<b>p</b>	0.29	<b>0.00</b>	<b>0.03</b>

## Discussion

Nursing education is a highly stressful curriculum. It is indicated that nursing students experience conditions like 'different systems of education, taking exams, preparing for exams, homework, thoughts about future plans after graduation' as academic stress and conditions like 'difficulty in developing a relationship with healthcare professionals, decrease in the ability of coping with stressful conditions, slow response and weak social relations, occupational illiteracy, deficiencies in meeting patient expectations, difficulty in adapting to hospital proceedings, anxiety about harming the patients, fear of giving misinformation, anxiety about making a mistake in hospital procedures' as practical stress during their education (Tully, 2004; Maville, 2004; Papazisis, 2008; Kang, Choi & Ryu, 2009; Mahmoud et al., 2012; Labraque, 2013; Oner Altioek & Ustun, 2013; Labraque et al., 2018).

The students who participated in the study obtained a total mean score of  $58.75 \pm 15.36$  from the '*Stress in Nurse Education Questionnaires (SINE)*' and it can be asserted that the students experienced stress slightly above moderate level during their education. The *SINE* total mean score of students was determined as  $62.55 \pm 15.94$  in the study by Yildirim et al., (2016),  $62.23 \pm 16.01$  in the study by Agacdiken, Mumcu Boga & Ozdelikara (2016), and  $52.3 \pm 17.1$  in the study by Burnard et al., (2008). In the studies, academic stress or practical stress subscales were higher; whereas, in the present study, the mean scores obtained by the students from the academic stress ( $29.50 \pm 8.0$ ) and practical stress ( $29.24 \pm 8.48$ ) subscales were close to each other. This result may be interrupted as the fact that students experienced stress both in the academic area and clinical practice equally.

It was determined that there was a positively strong correlation between the mean scores obtained by the students from the academic stress and practical stress subscales of the *SINE* and the total mean scores of the scale ( $p < 0.01$ ). Similarly, in their study, Yildirim et al., (2016) determined that there was a positively strong correlation between the total mean scores of the scale and the mean scores of the subscales.

It was determined that the mean scores of the academic stress subscale, practical stress subscale, and the overall scale were higher in female students participating in the study than

male students and this difference was statistically significant ( $p < 0.05$ ). Similarly, in the studies by Tully (2004), Durak, Batıgun & Atay Kayis (2014), Yildirim et al. (2016) and Karaca et al. (2017) it was reported that female students experienced higher levels of stress than male students. Results of the study are similar with the literature and it can be asserted that female students experience greater stress than male students. The difference may be associated with the fact that men have a greater difficulty in expressing their emotions and anxieties than women and women are more inclined to psychological disorders.

When comparing the parents' educational level and the *SINE* mean scores of the students who participated in the study, it was determined that the mean scores of academic stress were higher than the mean scores of practical stress and there was a statistically significant difference between the parents' educational level of the students and the total mean scores of the *SINE* ( $p < 0.05$ ). In the study by Agacdiken, Mumcu Boga & Ozdelikara (2016), it was also determined that parents' educational background was effective on stress experienced especially in the dimension of clinical practice during nursing education and training in general. Parents' education is an important familial demographic characteristic for adolescents. Some studies in the literature indicate that parents' high levels of education affect behavioral, social, emotional characteristics and academic conditions of adolescents and display a more conscious and constructive approach for solving the causes of stress (Chevalier & Lanot, 2002; Noack, 2004; Sengonul, 2013; Amuda & Ali, 2016). In the present study, it was thought that the increase in parents' educational level caused the adolescent to have an expectation about educational success and increased the stress level.

When comparing the fathers' working condition and the *SINE* mean scores of the students participating in the study, it was determined that the mean scores of academic stress were higher than the mean scores of practical stress and there was a statistically significant difference between the fathers' working condition and the total mean scores of the *SINE* ( $p < 0.05$ ). One of the variables that is thought to possibly affect the style of coping with stress is economic condition. Socio-economic level of family plays an important role in stressful conditions among students. With socio-economic level of family, we imply

variables like level of income, social circle and social status. In the literature, it is reported that socioeconomic level of family has an important effect on school success and coping with stress (Savsi & Aysan, 2014; Aslanargun, Bozkurt & Sarioglu, 2016; Sarier, 2016).

It was determined that there was a statistically significant difference between the state of smoking and practical stress and total scale mean scores of the students who participated in the study ( $p < 0.05$ ). In the studies of Murdock, Naber & Perlow (2010), Yildirim et al. (2016) and Capik, Durmaz & Ozturk (2017) students also stated that smoking had an effect on stress, was used as an ineffective way of coping, and would lead to a negative lifestyle.

### Conclusions

As a result of this study, it was determined that the stress experienced by the students during their nursing education was a little above moderate level and they experienced stress both in the academic area and clinical practice equally. According to these results, it is recommended to provide trainings to students for developing their social skills and levels of coping with stress throughout their nursing education, provide them a psychological counseling, organize orientation programs comprising instructor/instructors and the clinical field for the students before the clinical practice, increase the awareness level of trainers regarding the coping strategies and stress experienced by students in clinical environments, and conduct qualitative researches for the determination of stress factors.

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