

# Nursing education stress levels of nursing students and the associated factors

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## Abstract

**Aim:** This study was planned to determine the stress levels experienced by nursing students during the nursing education and the associated factors.

**Material and methods:** This descriptive study was conducted between February and April 2018. The population of the study consisted of the students of The University Faculty of Health Sciences Nursing Department. There were 1,200 students in the faculty of nursing. The sample consisted of 479 students with 0.05 error, at 0.95 confidence interval, 0.6 effect size and 0.95 of population representation power with power analysis. Participants used Introductory Questionnaire, Nursing Education Stress Scale.

**Results:** According to the results of this study, it was determined that the nursing students experience high level of stress and their demographic characteristics were affected by their education stress and practical stress and academic stress subscale scores.

**Conclusion:** It was also determined that stress scores of the students who preferred the nursing profession willingly or liked it while studying and found the profession prestigious were lower.

**Keywords:** Nursing Education; Stress; Nursing Students.

## INTRODUCTION

Nursing education is a process that covers theoretical and practical teaching and learning, requires the acquisition of theoretical knowledge and hand skills, and requires observation and interpretation (1). The basic principle in theoretical and practical nursing education is to prepare students to provide effective and appropriate care (2,3). At the end of this educational process, individuals are expected to solve the health problems of the patient by using their knowledge, attitude and skills and scientific problem solving method (4). While trying to meet these expectations, the student may experience frustration, pique, stress, and disappointment due to traumatic and stressful experiences along with positive experiences (5).

Stress experienced at every stage of life is an introverted reaction people show to the situations they perceive as a threat or difficulty. It can be a situation exposed to as a result of the interaction with the outside world sometimes due to time pressure, or an unexpected response or as a consequence of event and it can also emerge as a result of the factors about the inner world of the person (6).

Stress affects people's lives very closely. Raising

awareness in certain ratio and being sensitive about stress will cause people to adapt their environments better. Knowing the main factors creating stress will shed light on what measures can be taken against them (6).

Stress is a universal problem among nursing students. When it is compared with the general population and students in the other health disciplines, it is stated that risk of development of mental health problems is higher in undergraduate nursing students (7,8,9).

In the studies investigating the stress in nursing students in international literature, stress perceived by the students in their first clinical experience, stressors and the stress caused by nursing education in students have been investigated (10,11,12). It is determined that the studies in national literature investigate stressors and determination of stressors and determination of stress level they experience in their first clinical experience and only Karaca et al., investigated the stress specific for nursing education (4,13,14). When the study examples are examined, it is remarkable that the studies investigating the nursing education's stress are rare.

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In the light of this information, the aim of this study is to determine the stress levels experienced by students of Inonu University Faculty of Health Sciences Nursing Department and the associated factors and to make contribution to the literature.

### **Purpose**

This study was planned to determine the stress levels experienced by nursing students during the nursing education and the associated factors.

## **MATERIAL and METHODS**

### **Type of study**

This descriptive study was conducted between February and April 2018.

### **The population and sample of the study**

The population of the study consisted of the students of The University of WHERE Faculty of Health Sciences Nursing Department. There were 1,200 students in the faculty of nursing. The sample consisted of 479 patients with significance level of 0.05, at 0.95 confidence level, 0.6 effect size and 0.95 of population representation power with power analysis. Since some students wanted to use their absenteeism between the study dates and some did not want to participate in the study 489 university students were reached.

### **Data Collection Tools**

The Introductory Questionnaire determining the socio-demographic characteristics of the students and their views about the nursing department and "Nursing Education Stress Scale" for determining the stress levels of the students were used to collect the data. . The data were collected by the researcher from students in the classroom at times deemed appropriate by the dean administration using face-to-face interview techniques. The implementation period of the data collection form lasted approximately 10-15 minutes. Questions that students do not understand are explained without comment.

**Introductory Information Form:** This form prepared by the researcher had a total of 13 questions about the descriptive characteristics of students including; age, gender, class, economic level, educational level of the mother, educational level of the father, about nursing department including; status of selecting willingly the department, status of liking the department, prestige of the department, previous care experience, afraid of infectious disease, hardness of the course curriculum and status of liking clinical practice.

### **Nursing Education Stress Scale (NESS):**

It was developed Nursing Stress Scale developed by Gray-Toft and Anderson (1981) (15). Turkish validity and reliability study of the scale was conducted by Karaca et al. (1). The scale is the 4-point (0-3 points) Likert type consisting of two subscales and 32 items.

- Practical stress subscale is composed of the items 4.5,7,9,11,13,15,16,18,19,21,24,25,27,29, and 32.

- Academic stress subscale is composed of the items 1,2,3,6,8,10,12,14,17,20,22,23,26,28,30, and 31.

Total score of the scale in which the score of each subscale is between 0-48 is between 0-96 and the increased score indicates an increase in stress. The Cronbach alpha reliability coefficients of the scale are between 0,81 - 0,93. The Cronbach alpha reliability coefficients in our study ranged from 0.84 to 0.92.

### **Data collection:**

The data were collected between February and April 2018 in the school where the study was conducted. Verbal consent was obtained from the students before the data collection form was filled. The data were collected by the researcher from students in the classroom at times deemed appropriate by the dean administration using face-to-face interview techniques. It took averagely 5-10 minutes to complete questionnaires. Questions that students did not understand were explained without any comment.

### **Study Variables**

While the demographic characteristics of the students were the dependent variable of the study, stress level of the students was the independent variable.

### **Data Evaluation:**

The data were analyzed in SPSS 22 packaged software. Percentage, mean, standard deviation, independent samples t-test were used to assess the data. The Kruskal-Wallis test was used for non-parametric tests to assess the level of maternal education, paternal education and nursing prestige and stress, which did not meet the parametric test hypothesis ( $n < 30$ ). The Kruskal-Wallis test was used to compare the mean of three or more groups. The Bonferroni Adjusted Mann-Whitney test was used in multiple comparisons after the Kruskal-Wallis test. The Kruskal-Wallis test was used to assess class, the economic level and stress level, which met the parametric test hypothesis but not the normal distribution ( $p < 0.05$ ). Normal distribution fitness of variables was investigated using analytical methods (Kolmogorov-Smirnov / Shapiro-Wilk tests). The Bonferroni Adjusted Mann-Whitney test was used to determine the group from which the difference originated. Two independent samples-tests (Mann-Whitney) were used to evaluate the gender, willingly selecting nursing education, liked the profession while studying, liked the profession while studying, like clinical practice, nursing education curriculum heavy and nursing education stress level that met the parametric test hypothesis but not the normal distribution. The normal distribution suitability of the variables was examined using analytical methods (Kolmogorov-Smirnov / Shapiro-Wilk tests).

### **Ethical principles of the study:**

A written permission was obtained from The University Health Sciences Scientific Research and Publication Ethics Committee (No=2017/26-5) for the study. Before starting to conduct the study, written permission was obtained

from the Deanship of The University Faculty of Health Sciences. The principle of "respect for human dignity" was fulfilled by providing information to the participants about the purpose and plan of the study and where the obtained data will be used, the principle of "respect for autonomy" was fulfilled by including those who want to voluntarily participate in the study and the principle of "Privacy and Protection of Confidentiality" was fulfilled by stating that the information obtained in the study will be kept confidential.

## RESULTS

According to Table 1, 49.1% of the nursing students were in the age range of 18-20 years, 33.3% were the first-year students, 67.5% were female, 80% had a middle income levels, mothers of 65.6% were primary school graduates and fathers of 50.5% were primary school graduates. 52.8% of the students expressed that they did not willingly want to choose nursing profession, 52.8% stated to like their profession while studying, 63.6% found the profession moderately prestigious, 82.4% experienced fear of infectious diseases in the hospital, 74.8% found the nursing education curriculum hard and 57.3% liked clinical practices (Table 1-2).

It was determined that the average of stress scores of nursing education students was  $62.49 \pm 19.98$ . Academic stress subscale scores were found to be  $31.46 \pm 10.79$  and the practical stress score average was  $31.32 \pm 10.38$ . Table 3.

No significant correlation was found between the ages of the students and the nursing education stress total and subscale scores in the study ( $p > 0.05$ ). However, it was observed that the stress scores of the students aged 24 years and over were lower. There was no significant relation between the class of nursing students and nursing education stress scale and academic stress subscales ( $p > 0.05$ ). There was a significant relation between the class of nursing students and practical stress subscales ( $p < 0.05$ ). Accordingly, nursing education stress total and subscale scores of 4rd year nursing students were observed to be higher. In the further analysis made, it was determined that the difference in the level of practical stress subscales was related to the relationship between the first and fourth class (The Bonferroni Adjusted Mann-Whitney). In the study, a statistically significant relation was found between the gender of students and the total score and practical and academic stress subscales of nursing education stress ( $p < 0.05$ ). It was observed that female students had a higher nursing education stress score than male students. No statistically significant difference was determined between the income levels of nursing students and total and subscale scores of nursing education stress in the study ( $p > 0.05$ ). However, it was observed that students with high income level had higher stress scores.

A statistically significant relation was found between the mother's educational levels of the nursing students

practical stress subscale score of nursing education stress in the study ( $p < 0.05$ ). It was observed that the stress scores of the nursing students decreased as the educational levels of their mothers increased. Because there was no normal distribution among the groups, the Bonferroni Adjusted Mann-Whitney test was used in multiple comparisons after the Kruskal-Wallis test. In order to investigate this and to determine which group the difference between the two groups was in favor of, the groups at all the class levels were taken in pairs and the Bonferroni corrected Mann-Whitney U test was performed. According to Bonferroni Mann-Whitney U test; it has been determined that the group creating diversity is the illiterate group ( $p < 0.05$ ).

**Table 1. Demographic Characteristics of the Nursing Students (N=489)**

Demographic Characteristics	N	%
<b>Age</b>		
18-20	240	49.1
21-23	181	37.0
24 age and over	68	13.9
<b>Class</b>		
1	163	33.3
2	134	27.4
3	100	20.4
4	92	18.8
<b>Gender</b>		
Female	330	67.5
Male	159	32.5
<b>Student's Economic level</b>		
Good	62	12.7
Middle	391	80.0
Bad	36	7.4
<b>Mother's education level</b>		
Illiterate	93	19.0
Primary education	321	65.6
High school	60	12.3
University	15	3.1
<b>Father's education level</b>		
Illiterate	14	2.9
Primary education	296	60.5
High school	120	24.5
University	59	12.1
<b>Status of selecting willingly the department</b>		
Yes	231	47.2
No	258	52.8
<b>Status of liking the department while studying</b>		
Yes	315	64.4
No	174	35.6
<b>Nursing prestige</b>		
Low	154	31.5
Middle	311	63.6
High	24	4.9
<b>Do you like clinical practice?</b>		
Yes	280	57.2
No	209	42.8
<b>Is the nursing education curriculum heavy?</b>		
Yes	366	74.8
No	123	25.2

**Table 2. Nursing Education Stress Scale (HESÖ) and subscale scores average**

Score Average	N	Minimum	Maksimum	X+SS
Total Score Average	489	.00	96.00	62.49 +19.98
Academic Stress Subscales	489	.00	50.00	31.46+10.79
Practical Stress Subscales	489	.00	48.00	31.32 + 10.38

In the study, a statistically significant relation was found between the fathers' educational levels of the nursing students and the total stress level and practical stress subscale of nursing education ( $p < 0.05$ ). It was observed that the stress scores of nursing students decreased as their fathers' educational level increased. According to Bonferroni Mann-Whitney U test; it was determined that the meaningfulness of the bilateral comparisons was related to the relation between the primary education high school groups ( $p < 0.05$ ). A statistical significant relation was found between the status of nursing students to select the nursing profession willingly and practical stress subscale of the nursing education in the study ( $p < 0.05$ ). It was observed that the stress scores of the students who willingly chose the nursing profession decreased.

In the study, a statistically significant relation was found between the students' status of liking nursing profession during their education and academic stress subscales of nursing education ( $p < 0.05$ ). Stress scores of the students who liked their profession during the nursing education were observed to decrease.

In the study, no significant relation was found between nursing prestige and nursing education total stress score and subscales ( $p > 0.05$ ). However, it is seen that students who have high nursing prestige have lower stress scores.

A statistically significant relation was found between the nursing students' status of liking the clinical practices and the total stress level and academic stress subscales of nursing education, ( $p < 0.05$ ). It was observed that nursing students who liked clinical practice in hospitals had lower stress scores.

A statistically significant relation was found between the status of nursing students to consider the education curriculum as heavy and total stress level and the academic stress subscale of nursing education in the study ( $p < 0.05$ ). It was observed that the stress scores of the students who found the education curriculum heavy were higher (Table 3).

**Table 3. Comparison of the demographic characteristics and scale scores of the nursing students (N=489)**

Demographic Characteristics	n	Practical Stress	p	Academic Stress	p	Total Stress	P		
<b>Class</b>									
1	163	33.48	12.0	32.09±12.4	KW=13.917 § p=0.003	65.26±23.0	KW=6.995 p=0.072		
2	134	31.14	8.97	31.26±9.03		62.61±17.1			
3	100	31.81	10.5	31.05±11.2		62.02±21.2			
4	92	34.31	7.95	32.86±9.35		66.78±15.6			
<b>Gender</b>									
Female	330	32.16	±8.1	32.16	10.6	63.89	±19.9	Z=-2.784	
Male	159	29.09	±8.6	30.01	±11.0	59.59	±19.7	<b>P=0.005</b>	
<b>Student's Economic level</b>									
Good	62	31.24	±13.4	33.04	±12.2	65.54	±24.1	KW=3.800	
Middle	391	31.35	±9.71	31.28	±10.5	62.22	±19.7	p=0.150	
Bad	36	31.13	±11.6	30.69	±11.2	60.13	±20.7		
<b>Mother's education level</b>									
Illiterate	93	31.23	±9.79	30.45	±10.2	61.75	±19.2	KW=8.919§ <b>p=0.030</b>	
Primary education	321	31.75	±10.5	31.68	±10.8	62.73	±19.8		KW=4.282
High school	60	32.33	±8.73	32.23	±9.7	64.26	±18.9		p=0.233
University	15	30.93	±15.4	30.06	±15.2	61.06	±30.4		
<b>Father's education level</b>									
Illiterate	14	30.50	±9.99	33.00	±11.4	64.64	±21.3	KW=14.807§ <b>p=0.002</b>	
Primary education	296	30.43	±10.7	31.01	±11.2	61.25	±20.4		KW=8.410§
High school	120	33.78	±9.26	32.51	±10.0	65.30	±18.6		<b>p&lt;0.038</b>
University	59	30.96	±10.3	31.25	±9.87	62.49	±19.7		
<b>Willingly selecting nursing education</b>									
Yes	231	30.03	±10.8	30.78	±10.3	61.00	±19.6	Z=-1.719	
No	258	32.47	±9.83	32.08	±11.1	63.82	±20.0	<b>p=0.019</b>	
<b>Liked the profession while studying</b>									
Yes	315	30.79	±10.9	30.54	±11.0	61.08	±20.5	Z=-1.607	
No	174	32.28	±9.12	33.13	±10.0	65.05	±18.7	<b>p=0.496</b>	
<b>Nursing prestige</b>									
Low	154	31.58	±10.1	32.44	±11.5	63.72	±20.9	KW=9.231	
Middle	311	31.45	±10.4	31.32	±9.9	62.50	±18.7	p=0.071	
High	24	27.08	±13.0	27.08	±14.4	54.45	±27.0	KW=9.382	
<b>Do you like clinical practice?</b>									
Yes	280	30.42	±11.5	30.53	±11.2	60.61	±20.9	Z=-1.965	
No	209	32.52	±8.4	32.71	±10.0	65.01	±17.5	<b>p=0.315</b>	
<b>Is the nursing education curriculum heavy?</b>									
Yes	366	31.62	±10.3	32.09	±10.5	63.89	±19.6	Z=-2.492	
No	123	30.43	±10.3	29.60	±11.3	58.31	±20.5	<b>p=0.141</b>	
<b>Age</b>									
21.06±2.1 (Mean±SD)				r=0.065				r=0.050	
				p=0.148				p=0.270	

§ Kruskal Wallis Test ve ileri analizde Benferoni Adjusted ManWithney



## DISCUSSION

In the study, no significant correlation was determined between the ages of the students and the total and subscale scores of nursing education stress. However, it was observed that those who were younger had higher stress scores than those who were older. Results similar to the present study were found in the studies in literature (16,17). It was stated that the student nurses showed more emotionally oriented responses in coping with stress than the older ones and this may be associated with the fact as age increased, the knowledge and clinical experiences of the students increased and also they acquired necessary preventive strategies and problem-solving ways when they encountered with stress (17).

According to this, it can be asserted that the students experience high level of stress during nursing education but the experienced stress was equal in academic and practical subscales. Another study, it was also determined in the studies in literature that nursing students had high and moderate level of stress in varying rates (18). Clinical practice allows the student to transform the theoretical knowledge he/she has acquired in the class into a skill, gain new knowledge, skills and communication experiences identify their future professional roles and use critical thinking abilities for problem solving skills (19-22). Although clinical practice settings are inevitable for students to develop professional knowledge and skills, they are also an important source of anxiety and stress (21,23). In the study conducted by Burnard et al., to determine the stress level of the nursing students in five countries, they reported that stress in a major problem in clinical practice and clinical practice increased the stress level in students (24).

In the study, a significant relation was determined between the nursing students' class and the nursing education practical stress subscales. In our study, it was determined that first grade students arrived after the fourth grade students had the highest stress scores. In the present study, the nursing education total stress and subscale scores of the first-year students were higher, which was followed by the third-year students (31). It was seen in the studies in the literature, stress sources of the students showed differences in terms of the students' class. It is known that in the beginning of the clinical practice of nursing first-year students, the thinking that the knowledge and skills are inadequate for practice leads to stressful life (7,19,20,22). In the study conducted by Sheu et al., with the first-year nursing students, the students were determined to experience stress due to lack of sufficient knowledge and patient care skills. In the light of this information, it is thought that these factors are also effective in the stress life of first-year students in this study (10). Unlike the present study, it was determined in some studies in the literature that the second-year students had a higher stress level comparing to the other years. Some studies have reported higher depression, somatic anxiety, and mental symptoms

in second-year students (18,22,25,26,27). In the study by Alparslan et al., they stated that the reason behind why the experienced problems were concentrated especially in the second year was the concentration of theoretical practice course contents of nursing profession in both theoretical and practical basis (28). In some studies in the literature, the stress experiences of third-year students were found to be higher than the previous years (9,29). It is thought that students develop beliefs that they do not still have the sufficient professional knowledge in the third year and they have question marks about their career planning due to the approaching graduation which increase the academic and practical stress about education in this group (9). Temel, Bahar and Çuhadar (30) stated that fourth-year nursing students had higher depression mean scores compared to the other years. School completion of fourth grade students and fears of appointment to the profession may have increased stress levels. It is considered that these differences in the study results can vary depending on the mental state, year, cultural factors and perceptions of the students.

It was observed that female students had a higher nursing education stress score than male students. Similar to the present study, it was determined in the studies in the literature that female students' total stress and subscale scores of nursing education were higher and there was a significant relation between them (29,31). Girls who are more emotional, such as patient care more sensitive to the issues may have increased the level of stress.

In the study, a statistically significant relation was determined between educational level of the nursing students' mothers and practical stress subscale of nursing education. In the study, a statistically significant relation was found between educational level of nursing students' fathers and practical stress subscale of nursing education. It was observed that as parents' educational level of nursing students increased, stress scores decreased. Results of the study by Ağaçdiken et al., were similar to those of the present study (31).

It was determined in the study that the total stress and subscale mean scores of nursing education of the students who preferred the nursing education willingly and liked the profession while studying were lower. Even though students preferred the nursing profession in last choice in the study by Erbil et al., in this study conducted in their second semester 71.4% of them expressed that they wanted to be a nurse (33). It was stated in the study by Baysan et al., that 71.3% of the student nurses preferred the nursing department willingly and those who willingly selected the nursing department experienced less anxiety and stress before, during and after the clinic (32). It was determined in the other studies in the literature that the students who preferred the nursing profession willingly needed less social support and had higher self-confident and optimistic approach scores. It was stated in the study by Karagözoğlu et al., that a great majority of student nurses felt that they belonged to the nursing profession (34).

In the study, no statistically significant relation was found between the students' status of considering the nursing prestige and their stress scores. In the study by Altıok et al., it was reported that student nurses experienced stress due to the negative prejudice of their relatives about nursing (13).

In the study, education total stress and subscale scores of the students who found the nursing education curriculum hard were determined to be higher. In many studies in the literature it was expressed that the nursing students experienced stress depending on their course contents, practicing in an intense and stressful environment, exams and evaluations (13,35,36).

## CONCLUSION

According to the results of this study, it was determined that the nursing students experience high level of stress and their demographic characteristics were affected by their education stress and practical stress and academic stress subscale scores. It was also determined that stress scores of the students who preferred the nursing profession willingly, liked it while studying and found the profession prestigious were lower. Accordingly, it is recommended to introduce the nursing profession to the individuals in the society, support the students against stressors they experience while studying, and conduct activities that develop coping mechanisms.

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