

# The effect of mentoring program on adjustment to university and ways of coping with stress in nursing students: A quasi-experimental study



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## ABSTRACT

**Background:** Mentoring programs are effective in improving some characteristics related to university adaptation, such as increasing student satisfaction, gaining social skills and effective communication, reducing stress and anxiety, and improving cognitive and psychomotor skills as well as academic performance.

**Objective:** The aim of this study was to determine the effect of mentoring program on adjustment to university and ways of coping with stress in nursing students.

**Design:** This quasi-experimental study was carried out using a nonrandomized control group pretest and posttest design.

**Setting:** The study was conducted at a university school of nursing in Turkey.

**Participants:** Ninety-one first-year undergraduate nursing students were included in the study.

**Methods:** The 8-week peer mentoring program was conducted with the experimental group. The Adjustment to University Scale (AUS) and The Ways of Coping Inventory (WCI) were measured at preintervention and post-intervention.

**Results:** The posttest mean scores of AUS of the experimental group were statistically higher than the control group ( $p < .05$ ). The posttest mean scores of optimistic and seeking social support approaches of the experimental group were also statistically higher than the control group ( $p < .05$ ). Mentoring program had an effect on self-confident, optimistic, seeking social support, submissive, and helpless approaches in the experimental group ( $p < .05$ ).

**Conclusion:** Mentoring program had a positive effect on adjustment to university and ways of coping with stress in nursing students. These study results indicate that this program can be used to increase the adjustment to university and ways of coping with stress in nursing students.

## 1. Introduction

Nursing education, which includes both theoretical knowledge and clinical training skills, aims to prepare nursing students to develop knowledge and skills for professional nursing roles (Bektaş et al., 2018). This process is quite stressful for them because during nursing education and training, nursing students are frequently exposed to various stressors that may directly or indirectly impede their learning and performance and cause psychological problems, such as stress, anxiety, depression, and burnout (Kurebayashi et al., 2012; da Silva et al., 2014; Cheung et al., 2016; Gomathi et al., 2017). These stressors and ways of coping with stress may also prevent students from adapting to university life (Choi and Eunjo, 2012; Kim and Seo, 2015). For these reasons, it is important to increase adaptation to university in nursing

students in order to cope with the negative effects of stress.

Adaptation to university is a dynamic process based on the interaction between the student and the university environment. Healthy adaptation to university is important in terms of school success, skills development, new habit acquisition, individual happiness, and psychological health (Yüksel and Öz, 2018). Therefore, it is deemed necessary to facilitate undergraduate nursing student adaptation to university life prior to clinical practice and to improve self-efficacy, emotional intelligence, education satisfaction in their major, and academic achievement (Choi and Eunjo, 2012; Choi et al., 2015). Also, role modeling/peer mentoring is deemed crucial to successful newcomer adaptation (Houghton, 2014). Mentoring programs are effective in improving some characteristics related to university adaptation, such as increasing student satisfaction, gaining social skills and effective

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communication, reducing stress and anxiety, and improving cognitive and psychomotor skills as well as academic performance (Mollica et al., 2013; Nelwati et al., 2018).

## 2. Background

### 2.1. Stress sources in nursing students

Academic and clinical stressors are experienced by most nursing students enrolled in a nursing education program (Labrague et al., 2018). These stressors can be triggered by exam preparation, course workload, paying course fees, unmet personal needs, heavy workload, patient care, teachers' critiques, caring for dying patients, fear of making practice errors, and experiencing bullying and discrimination in the clinical settings (Bahadır-Yılmaz, 2016; Brown et al., 2016; Labrague et al., 2018; Aliafsari-Mamaghani et al., 2018). Pulido-Martos et al. (2011) reported the most common sources of stress related to academics including reviews, workload, and problems associated with studying and to clinical sources including fear of unknown situations, mistakes with patients, or handling of technical equipment. These stress sources increase students' stress levels. Stress has a detrimental effect not only on the physio–psycho-social health of individuals but also on their well-being as a whole (Labrague, 2013). For this reason, determining and improving the ways students cope with stress are vital.

### 2.2. Coping with stressors in nursing students

Yildiz-Findik et al. (2015) reported that nursing students adopted a self-confidence approach (SCA) in coping with stress but generally employed a helpless/self-accusatory approach (HA) among passive patterns as their clinical stress levels increased. Hirsch et al. (2015) revealed that high stress levels of students were associated with their denial and escape-avoidance coping strategies. Zhao et al. (2015) stated that transference was the most frequently used coping strategy by students. In another study, nursing students with higher stress levels reported a higher frequency of avoidance behavior and less frequent of problem-solving skills than those with low stress levels (Gurkova and Zelenikova, 2018).

As seen in the studies, nursing students have been shown to use both adaptive and maladaptive coping strategies to manage these academic and clinical problems. The students who cannot effectively deal with these stressors exhibit higher stress levels (McCarty et al., 2018). As a result, they may experience severe stress, anxiety, and depression (Kurebayashi et al., 2012; Cheung et al., 2016). They reported having a high level of emotional exhaustion and a low level of professional efficacy (da Silva et al., 2014). For these reasons, mentoring programs are needed to strengthen students' coping skills because peer support allows for sharing experiences, reinforcing knowledge, and increasing a sense of support, confidence, and critical thinking skills (Houghton, 2014; Wong et al., 2016). In a study carried out by Demir et al. (2014), it was reported that the mentoring program increased Turkish nursing students' problem-focused coping with stress and decreased emotion-focused coping with stress. In another study in Turkey, it was determined that working with the mentor was effective in reducing the clinical stress levels of the nursing students who were for the first time in clinical practice (Sü et al., 2018). Raymond and Sheppard (2018) revealed that peer mentoring was a positive effect on increasing sense of self-efficacy and psychological sense of belonging, and reducing perceived stress and loneliness of nursing students in Ontario. Mohammedpoory et al. (2017) reported that mentorship training program reduced stress of nursing students in Iran. Nasiri et al. (2018) determined that mentorship program decreased stressors in the clinical settings of Iranian nursing students and increased their confidence level.

In light of the findings obtained in the above mentioned studies, this study aimed to determine the effect of mentoring program on

adjustment to university and ways of coping with stress in nursing students.

## 3. Methods

### 3.1. Design

This quasi-experimental study was carried out in April and December 2018 using a nonrandomized control group pretest and posttest design.

### 3.2. Setting and sample

The population of the study consisted of 105 first-year nursing students and 108 fourth-year students, who were mentors for them, who were enrolled in the Faculty of Health Sciences at a state university located in Central Anatolia of Turkey. Ninety-one first-year students wishing to participate in the study constituted the sample of the study. Forty-four students for the intervention and 47 students for the control groups were selected. A randomization method was not used for the assignment of students to groups. However, the students who wanted to continue the mentoring program without interruption were assigned to the experimental group and the undecided students to the control group.

The inclusion criteria for the study of mentees required that they be first-year nursing students and have volunteered to participate in the study. The exclusion criteria for the study mandated that students should not have previously participated in a mentoring program. As 10 fourth-year students who met the inclusion criteria for the study as a mentor were included, a one-to-one match of students was not performed. The inclusion criteria for the study of mentors required that they be fourth-year nursing students, have high academic achievement and effective communication skills, be a loved one among friends, and have volunteered to participate in the study. Among the volunteer students, those with an academic grade of 2.50 or higher, were ranked from the high grade point average to the lower grade. Then, faculty members were interviewed in order to determine the students who had effective communication skills and were loved by their friends. There were 10 or 12 students assigned to the 10 mentors. Accordingly, the participation rate of the mentees is 86.7%.

### 3.3. Ethical considerations

Written approval to conduct this study was obtained from the Aksaray University School of Nursing, and approval was also obtained from the Ethics Committee of Aksaray University (number: 2018/57 and date: 01/03/2018). The aim of this study was explained to the participants, and their verbal and written consent was received.

### 3.4. Data collection tools

#### 3.4.1. The personal information form (PIF)

The PIF, which was developed by the researcher, included 15 questions about the sociodemographic characteristics of the students. These were age, gender, high school graduation, desire to study nursing, number of siblings, family structure, place of residence, perceived economic status, individuals of living together, mother's and father's educational status, mother's and father's employment status, and person who has shared important problems.

#### 3.4.2. Adjustment to university scale (AUS)

The AUS was developed by Akbalık (1997) to evaluate the university students' adjustment to the academic environment. The 31-item scale consisted of two subdimensions: social adjustment (SA) and academic adjustment (AA). The scale used a four-point Likert-type scale, ranging from 1 = completely untrue of me to 4 = mostly true of me.

The AUS total scores ranged from 31 to 124 with high scores indicating a better level of adjustment to university. Cronbach's alpha of the scale was 0.90. These values were 0.82 for AA and 0.91 for SA. In this study, Cronbach's alpha coefficient was from 0.81 to 0.87.

3.4.3. Ways of coping inventory (WCI)

The WCI was developed by Folkman and Lazarus (1984) and adapted to Turkish culture by Şahin and Durak (1995). The scale is a 30-item Likert-type scale. The answers to the items of the scale are given in four stages, moving from “does not apply or not used” (0) to “used a great deal” (3). A total score cannot be obtained from the scale, and separate scores are calculated for the subscales. The scale consists of five subgroups such as SCA, HA, submissive approach (SA), optimistic approach (OA), and seeking for social support approach (SSSA). The scale measures the way of coping with two main stresses. These are the ways of “problem-focused/active” and “emotion-focused/passive.” The subscales of SSSA, OA, and SCA indicate the active ways of coping, whereas the subscales of HA and SA indicate the passive ways of coping. Cronbach's alpha coefficients of the subscales of WCI with psychometric evaluations were 0.68 for OA, 0.62–0.80 for SCA, 0.64–0.73 for HA, 0.47–0.70 for SA, 0.45–0.47 for SSSA. In the current study, Cronbach's alpha values were from 0.82 to 0.79 for SCA, from 0.71 to 0.82 OA, 0.73 HA, from 0.49 to 0.62 SA, and from 0.58 to 0.50 SSSA.

3.4.4. Data collection and procedure

Fig. 1 shows the flow diagram of the data collection and procedure.

After 10 students were selected as mentors, a total of 10 h of training program was applied by the researchers for 5 days. The training program included peer counseling and its features, communication, assistive communication techniques, and coping with stress. After this training, mentor students applied eight sessions of peer mentoring program to the mentees. The sessions were conducted by mentors once a week for 8 weeks, and in this process, the researchers continued to provide guidance to the mentors. Five groups consisted of 8–10 mentees. Two mentors were assigned to each group. The 8-week peer mentoring program included acquaintance and group awareness, life in Aksaray, Aksaray and its features, communication skills, techniques that facilitate communication, using interpersonal communication skills and support, stress and its effects, stress and coping, and evaluation/termination of the peer mentoring program. Before and at the end of the peer mentoring program, WCI and AUS were applied to the students.

3.4.5. Data analysis

The study data were analyzed using the SPSS 24 package program. The descriptive statistics, such as percentage, arithmetic mean, and standard deviation, were used in the analysis of sociodemographic characteristics. The conformity of data to normal distribution was evaluated using the Kolmogorov–Smirnov test and it was found that the data did not have a normal distribution ( $p < .05$ ). The chi-square test was used to compare the descriptive features between groups. The Mann–Whitney *U* Test was used to compare the mean scores of the scales between the groups. The Wilcoxon's signed-ranks test was used to

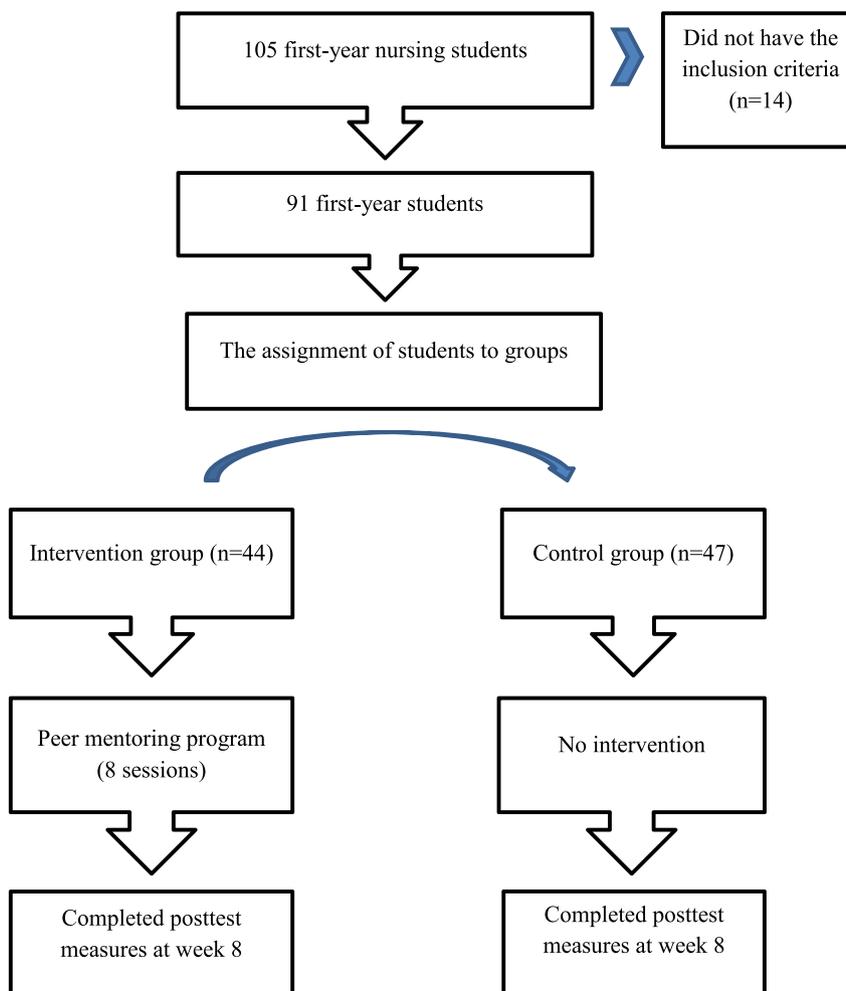


Fig. 1. The flow diagram of the data collection and procedure.

**Table 1**  
Sociodemographic characteristics of students (n = 91).

Characteristics	Experimental group (n = 44)		Control group (n = 47)		Test and p value
	n	%	n	%	
Age					
18	22	50.0	32	68.1	$\chi^2 = 3.690$
19	15	34.1	12	25.5	$p = .158$
20 and ↑	7	15.9	3	6.4	
Gender					
Female	28	63.6	29	61.7	$\chi^2 = 0.036$
Male	16	36.4	18	38.3	$p = .849$
High school graduation					
Anatolian high school	32	72.7	28	59.6	$\chi^2 = 2.142$ $p = .544$
General high school	2	4.5	5	10.6	
Vocational health high school	6	13.6	8	17.0	
Vocational high school	4	9.1	6	12.8	
Desire to study nursing					
Yes	36	81.8	40	85.1	$\chi^2 = 0.178$
No	8	18.2	7	14.9	$p = .673$
Number of sibling					
2	8	18.2	15	31.9	$\chi^2 = 2.277$
3	15	34.1	13	27.7	$p = .320$
4 and ↑	21	47.7	19	40.4	
Family structure					
Nuclear	33	75.0	39	83.0	$\chi^2 = 2.463$
Extended	9	20.5	8	17.0	$p = .292$
Divorced	2	4.5	0	0.0	
Place of residence					
City	24	54.5	31	66.0	$\chi^2 = 1.436$
Town	15	34.1	13	27.6	$p = .488$
Village	5	11.4	3	6.4	
Moderate	22	50.0	31	66.0	$\chi^2 = 2.379$
Low	22	50.0	16	34.0	$p = .123$
Individuals of living together					
Dormitory	34	77.3	37	78.7	$\chi^2 = 0.584$
My family	7	15.9	7	14.9	$p = .900$
At home with my friends	3	6.8	3	6.4	
Mother's educational status					
High school	10	22.7	8	17.0	$\chi^2 = 0.744$
Secondary	7	15.9	10	21.3	$p = .863$
Primary	21	47.7	23	48.9	
Illiterate	6	13.6	6	12.8	
Mother's employment status					
Employed	3	6.8	4	8.5	$\chi^2 = 0.092$
Not employed	41	93.2	43	91.5	$p = .762$
Father's educational status					
University	6	13.6	6	12.8	$\chi^2 = 3.267$
High school	16	36.4	10	21.2	$p = .514$
Secondary	4	9.1	8	17.0	
Primary	16	36.4	20	42.6	
Illiterate	2	4.5	3	6.4	
Father's employment status					
Employed	30	68.2	36	76.6	$\chi^2 = 0.807$
Not employed	14	31.8	11	23.4	$p = .369$
Person who has shared important problems					
Mother	19	43.2	27	57.4	$\chi^2 = 2.525$
Father	5	11.4	6	12.8	$p = .471$
Friend	11	25.0	7	14.9	
Sibling	9	20.5	7	14.9	

compare the mean scores of the scales in-group.

#### 4. Results

##### 4.1. Sociodemographic characteristics of mentees

Table 1 shows the sociodemographic characteristics of the students in the experimental and control groups. The mean age of the students in the experimental group (EG) was  $18.72 \pm 0.92$  years and in the control group (CG)  $18.40 \pm 0.68$  years. There was no difference between the two groups in terms of sociodemographic variables, such as age, gender, high school graduation, desire to study nursing, number of siblings, family structure, place of residence, perceived economic status, individuals of living together, mother's and father's educational status, mother's and father's employment status, and person who has shared important problems ( $p > .05$ ). The two groups were composed primarily of female students (EG = 63.6 and CG = 61.7). They confirmed their desire to study nursing (EG = 81.8 and CG = 85.1) and reported to have a nuclear family structure (EG = 75.0 and CG = 83.0).

##### 4.2. Mentees' scores for adjustment to university

Table 2 compares the mean scores of the pretest and posttest scores of the experimental and control groups in the categories of AUS, AA, and SA. The pretest mean scores of AUS, AA, and SA did not differ significantly between the experimental and control groups ( $p > .05$ ). But the posttest mean scores of AUS, AA, and SA of the EG ( $97.27 \pm 9.81$ ,  $15.90 \pm 2.31$ , and  $81.36 \pm 8.47$ , respectively) were statistically higher than that of the control group ( $89.10 \pm 12.92$ ,  $13.17 \pm 3.99$ , and  $75.93 \pm 11.10$ , respectively;  $p < .05$ ).

In the present study, the AUS average scores of mentees were  $87.47 \pm 10.93$  at the beginning and  $97.27 \pm 9.81$  at the end of the mentoring program. The AA average scores of mentees were  $13.79 \pm 3.28$  and  $15.90 \pm 2.31$  at the beginning and end of the program, respectively. The SA average scores of mentees were  $73.68 \pm 9.62$  and  $81.36 \pm 8.47$  at the beginning and end of the program, respectively. Thus, the average of the posttest scores of AUS, AA, and SA was higher than the average of the pretest scores, and the difference between the pretest and posttest score averages was significant ( $p < .05$ ).

##### 4.3. Mentees' scores for ways to cope with stress

Table 2 compares the mean scores of the pretest and posttest scores of the experimental and control groups in the categories of OA, SCA, HA, SA, and SSSA. The pretest mean scores of OA, SCA, HA, SA, and SSSA did not differ significantly between the experimental and control groups ( $p > .05$ ). The posttest mean scores of SCA, HA, and SA did not differ significantly between the experimental and control groups ( $p > .05$ ). But the posttest mean scores of OA and SSSA of the EG ( $10.61 \pm 2.78$  and  $9.11 \pm 1.58$ , respectively) were statistically higher than that of the control group ( $8.93 \pm 3.44$  and  $7.40 \pm 2.01$ , respectively;  $p < .05$ ).

In the present study, at the beginning of the mentoring program, the OA average score of mentees was  $8.68 \pm 3.08$ , and at the end of the program, it was  $10.61 \pm 2.78$ . The SCA average scores of mentees were  $13.15 \pm 4.73$  and  $14.81 \pm 3.51$  at the beginning and end of the program, respectively. The HA average score of mentees was  $11.52 \pm 4.89$  at the beginning and  $9.15 \pm 3.58$  at the end of the program. The SA average scores of mentees were  $6.59 \pm 3.26$  and  $5.11 \pm 2.64$  at the beginning and end of the program. The SSSA average scores of mentees were  $6.95 \pm 2.31$  and  $9.11 \pm 1.58$  at the beginning and end of the program, respectively. The posttest score averages of OA, SCA, and SSSA were higher than the pretest score averages, and the difference between the pretest and posttest score averages was significant ( $p < .05$ ). The posttest score averages of HA

**Table 2**  
The pre-test and post-test mean scores of AUS, AA, SA, OA, SCA, HA, SA and SSSA of the experimental and control groups.

Scale	Experimental group (n = 44)	Control group (n = 47)	Test/p value
	X ± SD	X ± SD	
<b>Adjustment to university scale</b>			
Pretest	87.47 ± 10.93	89.53 ± 10.53	$z = -0.755/p = .450$
Posttest	97.27 ± 9.81	89.10 ± 12.92	$z = -3.182/p = .001$
Test/p value	$z = -5.233/p = .000$	$z = -0.191/p = .849$	
<b>Academic adjustment subscale</b>			
Pretest	13.79 ± 3.28	13.57 ± 2.86	$z = -0.361/p = .718$
Posttest	15.90 ± 2.31	13.17 ± 3.99	$z = -3.334/p = .001$
Test/p value	$z = -4.359/p = .000$	$z = -0.372/p = .710$	
<b>Social adjustment subscale</b>			
Pretest	73.68 ± 9.62	75.95 ± 10.01	$z = -0.958/p = .338$
Posttest	81.36 ± 8.47	75.93 ± 11.10	$z = -2.563/p = .010$
Test/p value	$z = -5.172/p = .000$	$z = -0.011/p = .991$	
<b>Optimistic approach</b>			
Pretest	8.68 ± 3.08	9.40 ± 3.52	$z = -1.237/p = .216$
Posttest	10.61 ± 2.78	8.93 ± 3.44	$z = -2.550/p = .011$
Test/p value	$z = -4.260/p = .000$	$z = -1.099/p = .272$	
<b>Self-confident approach</b>			
Pretest	13.15 ± 4.73	14.19 ± 3.96	$z = -1.028/p = .304$
Posttest	14.81 ± 3.51	13.82 ± 4.07	$z = -0.953/p = .341$
Test/p value	$z = -3.013/p = .003$	$z = -0.840/p = .401$	
<b>Helpless approach</b>			
Pretest	11.52 ± 4.89	10.97 ± 4.47	$z = -0.116/p = .908$
Posttest	9.15 ± 3.58	10.70 ± 4.75	$z = -1.714/p = .087$
Test/p value	$z = -4.090/p = .000$	$z = -0.822/p = .411$	
<b>Submissive approach</b>			
Pretest	6.59 ± 3.26	5.93 ± 2.67	$z = -0.815/p = .415$
Posttest	5.11 ± 2.64	6.23 ± 3.35	$z = -1.541/p = .123$
Test/p value	$z = -3.335/p = .001$	$z = 0.320/p = .749$	
<b>Seeking social support approach</b>			
Pretest	6.95 ± 2.31	7.08 ± 2.57	$z = -0.232/p = .816$
Posttest	9.11 ± 1.58	7.40 ± 2.01	$z = -4.125/p = .000$
Test/p value	$z = -4.958/p = .000$	$z = -1.038/p = .299$	

$p < 0.05$  for 0.011, 0.003 and 0.001

$p < 0.001$  for 0.000

and SA was lower than the pretest score average, and the difference between the pretest and posttest score averages was significant ( $p < .05$ ).

## 5. Discussion

The present study aimed to determine the effect of mentoring program on adjustment to university and ways of coping with stress in nursing students. The study revealed that the mentoring program increased social adjustment and academic adjustment in nursing students. Nursing students' self-confident, optimistic, and seeking social support levels increased and their submissive and helpless levels decreased after mentoring program.

The present study found that after the mentoring program, both AA and SA in nursing students increased. At the end of the program, they had a higher level of adjustment to university than before the program. Similarly, Yomtov et al. (2017) reported that peer mentoring helped first-year university students feel more integrated and connected to their university. According to mentees, helpfulness of the mentoring program in aspects of adjustment to university was feeling part of the university community, making social contacts, and understanding university requirements (Glaser et al., 2006). Mentees described mentors to be individuals who provided guidance and referral to appropriate resources to reduce feelings of academic stress and uncertainty and to provide insight into social opportunities of university life (Lombardo et al., 2017). In another study, mentors reported that they desired to reduce a junior student's stress that was associated with the many clinical and professional obligations. They also aimed to present

to support and reassure and to want to be part of a nursing community (Vandal et al., 2018). As seen, preparing students for the challenges of academic life, strengthening their social connections, and improving their communication skills increase their level of adjustment to university.

The present study found that after the mentoring program, nursing students' levels of OA, SCA, and SSSA increased, and their levels of HA and SA decreased. At the end of the program, problem-focused coping increased and emotion-focused coping decreased in the students. Similarly, in a study carried out by Demir et al. (2014), it was reported that the mentoring program increased students' problem-focused coping with stress and decreased emotion-focused coping with stress. In another study conducted by Abdolalizadeh et al. (2017), undergraduate medical students reported that peer mentoring program helped them reduce their stress, cope with new situations, and confront difficulties. Mentoring program not only affects students' coping styles with stress but also decreases students' stress levels. In a study, the mentoring program reduced first-year nursing students' perceived stress and loneliness (Raymond and Sheppard, 2018). In another study, it was determined that working with the mentor was effective in reducing the clinical stress levels of the nursing students who were for the first time in clinical practice (Sü et al., 2018).

It can be said that mentorship for undergraduate nursing students is a beneficial approach to manage inadequate academic preparation, lack of social and academic resources, and stress resources faced by nursing students in the clinical environment (Wong et al., 2016). There are advantages of peer learning. These advantages are better learning with no stress, increasing self-confidence, and reducing anxiety in making

mistakes (Ravanipour et al., 2015). According to Sibiya et al. (2018), the benefits of peer mentoring were it increased competence level, resulted in autonomy and work independence, assured personal and professional growth, and increased self-esteem and self-confidence of critical care nursing students. For these reasons, it can be suggested that peer mentoring program is useful in increasing adjustment to university and using problem-based coping strategies in nursing students.

## 6. Conclusion

Finally, it was determined that the mentoring program had a positive effect on both AA and SA to university in nursing students. In the previous studies, it was reported that mentoring programs increased coping with stress, sense of self-efficacy and psychological sense of belonging in nursing students, and decreased their clinical stress levels, perceived stress and loneliness levels. However, this study has provided an innovation in terms of increasing the level of adjustment to university of nursing students using mentoring program. For this reason, the study results indicate that this program can be used to increase adjustment to university and ways of coping with stress in nursing students.

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## Declaration of Competing Interest

The authors report no actual or potential conflict of interest.

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## Submission declaration

This manuscript is not under consideration for publication elsewhere, its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and if accepted for publication, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder.

## Author contributions

Study design: AY, EBY; Data collection: AY; Data analysis: AY, EBY; Manuscript writing: AY, EBY.

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