



ORIGINAL ARTICLE

Mindful Awareness and Perceived Stress in Nursing Students

Hemşirelik Öğrencilerinde Bilinçli Farkındalık ve Algılanan Stres

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Abstract

Objective: The aim of this study was to determine the relationship between mindfulness and perceived stress levels of nursing students and the relationship between them.

Method: This descriptive study was conducted in the health college of a state university. Students studying in the department of nursing and going into clinical practice were included in the study (n=410). Data were collected using a questionnaire form, the perceived stress scale for nursing students, and the mindful attention awareness scale.

Results: The mean age of the participants was 20.73±1.45 years, 26.6% were in their third year, and 69.9% were female. 76.1% of the students stated that they willingly preferred the nursing department. The mean scale scores were 98.81±9.76 for the perceived stress scale for nursing students and 58.97±11.29 for the mindful attention awareness scale. A negative correlation was found between the total mean scores of the scales (p<0.05). It was found that the mindful awareness scores of the students who willingly preferred the nursing department were high (p<0.05). It was determined that the perceived stress scores of the fourth grade, female students, and students who did not willingly choose the nursing department were higher (p<0.05).

Conclusion: The mindful awareness of the students was slightly above the middle level, and their perceived stress was high. It is recommended that the participants' mindful awareness levels should be increased with cognitive and behavioral therapies to reduce their perceived stress.

Keywords: Mindful awareness, nursing student, stress

Öz

Amaç: Araştırmanın amacı hemşirelik öğrencilerinin bilinçli farkındalıkları ile algıladıkları stres düzeyinin ve aralarındaki ilişkinin belirlenmesidir.

Yöntem: Bir devlet üniversitesine ait sağlık yüksekokulunda gerçekleştirilen araştırma tanımlayıcı tiptedir. Araştırmaya hemşirelik bölümünde eğitim gören ve klinik uygulamaya çıkan öğrenciler dahil edildi (n=410). Veriler; anket formu, hemşirelik öğrencileri için algılanan stres ölçeği ve bilinçli farkındalık ölçeği ile toplandı.

Bulgular: Katılımcıların yaş ortalaması 20,73±1,45 yıl, %26,6'sı üçüncü sınıf ve %69,9'u kadındı. Öğrencilerin %76,1'i hemşirelik bölümünü isteyerek tercih ettiğini belirtti. Ölçek puan ortalamaları hemşirelik öğrencileri için algılanan stres ölçeğinin 98,81±9,76 ve bilinçli farkındalık ölçeğinin 58,97±11,29 olarak bulundu. Ölçeklerin toplam puan ortalamaları arasında negatif yönde ilişki olduğu saptandı (p<0,05). Hemşirelik bölümünü isteyerek tercih etmiş olan öğrencilerin bilinçli farkındalık puanlarının yüksek olduğu bulundu (p<0,05). Dördüncü sınıf, kadın ve hemşirelik bölümünü isteyerek tercih etmemiş olan öğrencilerin algıladıkları stres puanlarının yüksek olduğu bulundu (p<0,05).

Sonuç: Öğrencilerin bilinçli farkındalıkları orta düzeyin biraz üzerinde, algıladıkları stresleri ise yüksektir. Katılımcıların bilinçli farkındalık düzeylerinin bilişsel ve davranışçı terapiler ile yükseltilerek algıladıkları stresin azaltılması önerilmektedir.

Anahtar Kelimeler: Bilinçli farkındalık, hemşirelik öğrencisi, stres

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Introduction

Mindful awareness is a concept rooted in the Buddhist philosophy of mindful and purposeful attention to the present (1). It refers to an internal perception that allows the individual not to be distracted and to focus on the present and their surroundings (2). This focus is realized in a non-judgmental, accepting way (1). Mindful awareness is not seen as a trait that needs to be acquired through learning, but as an inner resource that is already present and waiting to be awakened (3).

People with mindful awareness strive to sustain their lives by being aware of themselves and the world around them and contributing to the world (2,4). High levels of mindful awareness enhance physical and mental health, ensure success in interpersonal relationships, increase self-esteem, life satisfaction, and quality of life, cultivate focus and optimism, and enable effective stress management (1,5).

In recent years, studies on mindful awareness among nurses, patients, caregivers, and nursing students have increased, and mindful awareness-based practices in healthcare have found their place in the literature (2,6,7). Mindful awareness in nursing students is found to increase their overall well-being, positively impact their academic and clinical performance, and reduce their stress and anxiety caused by nursing education (2,8,9).

Stress emerges as a reaction to threatening situations that the body faces and is a serious problem experienced by nurses and brings physiological and psychological problems (10,11). Stress in nursing can occur during nursing education, and nursing students may experience clinical or academic stress (10). In the literature, it has been reported that the situations that cause clinical stress in students are first hospital experience, encountering emergencies in the clinic, insufficient development of skills related to nursing practices, negative attitudes of the clinical team, and communication problems with both patients and clinical team. Situations that increase academic stress include fear of failure, lack of free time, exams, and homework (7,8,10).

In nursing education, students gain professional knowledge, skills, and attitudes related to nursing. To achieve success in these gains, nursing students should be able to control their stress (12). Considering how indispensable the nursing profession is for humanity, it is thought that the intense stress experienced by nursing students may increase the need for nurses by preventing the preference of the profession and the completion of nursing education, and

thus may bring problems such as increased workload and decreased quality of care (11).

In addition to pharmacological treatments, alternative treatment options are available to relieve stress. Alternative treatment options include mindful awareness interventions, resilience development, individualized clinical support, and exercise (13). Mindful awareness interventions improve students' mindfulness capacity, reduce stress and anxiety, increase academic achievement, quality of life, empathy, and well-being levels, and enable them to control their emotions (7,14). Stress that will be reduced through mindful awareness can enable nursing students to cope effectively with the challenges of their professional education (13). Therefore, this study aimed to determine the level of mindfulness and perceived stress of nursing students and the relationship between them.

Material and Method

Design

This study is of descriptive design.

Participants

In June 2022, all nursing students studying at the health college of a state university and who were engaged in clinical practice constituted the population of the study (n=505). No sample calculation was made, and it was aimed at reaching all students constituting the population. The study was completed with 410 students who voluntarily participated in the research and completed the questionnaires and scales completely (n=410). However, 18.9% of the students were not reached.

Data Collection

A questionnaire form (3,5,7) consisting of questions to determine the socio-demographic (age, grade, gender) and academic achievement status of nursing students prepared by the researchers, perceived stress scale for nursing students, and mindful awareness scale were used to collect the data.

The mindful attention awareness scale: Developed in 2003 by Brown and Ryan (15). Its Turkish validity and reliability was assessed by Özyeşil et al. (16). The scale contains 15 items and is a six-point Likert scale. The six-point rating ranges from 6=seldom to 1=almost always. Scores between 15 and 90 can be obtained from the scale, and higher scores indicate higher levels of mindful awareness. Özyeşil et al. (16) found the Cronbach's alpha of the scale to be 0.82. In this study, it was 0.86.

Perceived stress scale for nursing students: This scale was developed in 2002 by Sheu et al (17). The Turkish validity and reliability of the scale was assessed by Karaca et al. (18). The scale contains 29 items and has six sub-dimensions. The five-point scale ranges from 4=very stressful to 0=not stressful. Scores between 0 and 116 can be obtained from the scale, and higher scores indicate higher stress levels.

Main Points

- High mindful awareness enables nursing students to acquire professional nursing characteristics.
- Nursing students should learn to manage stress while they are still students.
- With mindful awareness, the stress experienced by nursing students can be eliminated.

Karaca et al. (18) found the Cronbach's alpha of the scale to be 0.96. In this study, the Cronbach's alpha value was found to be 0.89.

Data Collection Process

The data of the study were collected in June 2022 using the online method through Google forms. A link to the form was sent to students via their official student e-mail addresses. The form had two parts. In the first part, it was explained that participation in the research was voluntary, that the data collected in the research would only be used in the research, and that the information belonging to the individuals would not be shared with other individuals and institutions. In this section, participants were asked a question that they could answer yes or no to confirm that they voluntarily participated in the research. Students who answered yes and agreed to participate in the study accessed the questionnaire form and scales and completed the online form.

Statistical Analysis

The data of the study were analyzed using the IBM Statistical Package for the Social Sciences (version 21.0). Numbers and percentages were used to analyze categorical variables. The mean and standard deviation were used to analyze continuous variables. The compatibility of the variables with normal distribution was evaluated by Kolmogorov-Smirnov test, and normal distribution was determined ($p > 0.05$). Therefore, independent samples t-test and One-Way ANOVA tests were used to compare continuous data between independent groups. Pearson correlation analysis was used to evaluate the relationship between the scores of the scales. Statistical significance value was set as $p < 0.05$.

Ethical Consideration

Ethics Committee approval and necessary institutional permissions were obtained from the Faculty of Medicine

Scientific Research Ethics Committee of a Trakya University (TÜTF-BAEK 30.05.2022 date, 2022/237 protocol code) to conduct the research. Necessary permissions were obtained to use the scales used in this study. The Declaration of Helsinki was complied with. The principles of research and publication ethics were followed.

Results

The mean age of the nursing students was 20.73 ± 1.45 years, 26.6% of them were studying in the third year and 69.9% of them were female. 76.1% of the participants stated that they preferred the nursing department willingly, and all of them stated that they did not receive any training to increase mindful awareness (Table 1).

The mean total scale scores of nursing students were 58.97 ± 11.29 on the mindful attention awareness scale and 98.81 ± 9.76 on the perceived stress scale for nursing students (Table 2).

A very weak negative correlation was found between the mean total scores of the mindful attention awareness scale, the mean total scores of the perceived stress scale for nursing students, and the mean scores of the sub-dimensions of stress caused by lack of professional knowledge and skills and stress experienced while caring for a patient ($p < 0.05$) (Table 3).

It was found that the mean total scores of the mindful attention awareness scale for students who preferred the nursing department willingly were higher than those for students who preferred the nursing department reluctantly ($p < 0.05$) (Table 4).

The mean total scores of the perceived stress scale for nursing students were statistically higher in fourth grade

Table 1.
Socio-demographic and Academic Characteristics of Nursing Students (n=410)

Variables	Minimum-maximum	X ± Standard deviation
Age (year)	18-27	20.73±1.45
	n	%
Grade		
First year	108	26.3
Second year	103	25.1
Third year	109	26.6
Four year	90	22
Gender		
Female	286	69.9
Male	124	30.1
Choosing the nursing department willingly		
Yes	312	76.1
No	98	23.9
Receiving training on mindful awareness		
Yes	0	0
No	410	100

students than in first and second grade students ($p<0.05$), in female students than in male students ($p<0.001$), and in students who chose the nursing department involuntarily than in students who chose it willingly ($p<0.05$) (Table 4).

Discussion

Nursing education includes intensive knowledge and skill teaching, and the problems encountered in the clinical field cause stress in students. It is important that nursing students, who have obligations such as protecting the health of individuals in the future and taking responsibility for their care and treatment, are biopsychosocially healthy (10,19). It is important that nursing students, who should have responsibilities such as protecting the health of the individual, family, and society in the future and taking responsibility for their care and treatment, are biopsychosocially healthy. Strategies to reduce students'

stress in nursing education, such as mindful awareness, which can improve their well-being, have recently gained importance (10,12).

In our study, students' mindfulness levels were slightly above average. In similar studies, the level of mindfulness of nursing students is at a medium level (7,9,12,20). In the literature, it has been reported that mindful awareness has positive effects on nursing students' ethical decision-making, communication with patients, and empathy skills (21,22). It has been stated that, thanks to mindful awareness, nursing students feel more comfortable, calm, and focused in the classroom environment at the university (23). Mindful awareness is a feature that students should have because of all the benefits it provides to nursing students. Because high mindful awareness will enable nursing students to acquire both professional nursing characteristics and receive a quality education, it is thought that the mindful awareness

Table 2.
Nursing Students' Mean Scores on the Mindful Attention Awareness Scale and Perceived Stress Scale for Nursing Students

Scales and subscales	Scale range	Participant range	X ± Standard deviation
Mindful attention awareness scale total score	15-90	24-90	58.97±11.29
Perceived stress scale for nursing students total score	29-116	61-116	98.81±9.76
Stress caused by a lack of professional knowledge and skills	0-12	6-12	10.22±1.34
Stress experienced while caring for a patient	0-32	16-32	27.44±2.88
Stress caused by homework and workload	0-20	10-20	16.99±2.00
Stress caused by instructors and nurses	0-24	12-24	20.30±2.44
Environmental stress	0-12	6-12	10.12±1.46
Stress from peers and daily life	0-16	8-16	13.55±1.68

Table 3.
Relationship Between Nursing Students' Mindful Attention Awareness Scale and Perceived Stress Scales for Nursing Students and Its Subscales

Scales and subscales	Test statistic	Mindful attention awareness scale total score
Perceived stress scale for nursing students	r p	-0.104 0.035
Stress caused by a lack of professional knowledge and skills	r p	-0.115 0.020
Stress experienced while caring for a patient	r p	-0.108 0.028
Stress caused by homework and workload	r p	-0.019 0.067
Stress caused by instructors and nurses	r p	-0.091 0.065
Environmental stress	r p	0.034 0.497
Stress from peers and daily life	r p	-0.080 0.106

r=Pearson's correlation analysis

Table 4.
Comparison of Socio-demographic and Academic Characteristics of Nursing Students and Mean Scores of the Mindful Attention Awareness Scale and Perceived Stress Scale for Nursing Students

Variables	Mindful attention awareness scale total score	Perceived stress scale for nursing students total score
Grade		
First year (1)	57.97±11.14	97.08±10.49
Second year (2)	58.36±10.99	97.19±10.56
Third year (3)	59.18±11.37	100.42±8.69
Fourth year (4)	60.61±11.71	100.81±8.52
F	1.024	4.420
p	0.382	0.004 4>1,2
Gender		
Female	58.95±11.14	100.31±8.96
Male	59.01±11.70	98.37±10.66
t	-0.051	4.830
p	0.960	0.000
Choosing the nursing department willingly		
Yes	59.93±11.69	98.16±10.00
No	55.89±9.31	100.89±8.71
t	3.511	-2.432
p	0.001	0.015

t=independent samples t-test, F=One-Way ANOVA test

of nursing students participating in our study should be increased. High conscious awareness enables nursing students to acquire professional nursing characteristics.

Nursing education provides students with the knowledge, attitudes, and skills necessary for the roles of professional nursing. During this training, nursing students may experience stress (19). Clinical workload, academic performance concerns, lack of instructor/nurse support in clinical practice areas, worry about making mistakes, not feeling ready to provide care, difficulty in communicating and interacting with the healthcare team, and witnessing the death and suffering of patients are considered risk factors that cause stress in nursing students (7,8,19). Nursing students who cannot effectively cope with these risk factors may experience high levels of stress (7). In accordance with the literature, it was determined that students perceived high levels of stress in our study (24,25).

In nursing education, students try to cope with stress while attempting to achieve academic and clinical success (13). If nursing students can learn how to cope with their stress during their education, they can perform nursing more professionally in the future and provide better quality nursing care to their patients (19). If nursing students can learn how to manage their stress during their education, they can perform nursing more professionally in the future and provide better quality nursing care to their patients (3).

In this study, a very weak negative relationship was found between nursing students' mindful awareness and perceived stress. As students' mindful awareness increases,

their perceived stress level decreases. In the literature, mindful awareness-based interventions are stated to be effective in significantly reducing stress in nursing students (1,6,7,18). Mindful awareness-based interventions such as breathing techniques, meditation, and yoga are recognized as ideal methods to reduce stress and manage the well-being of future healthcare providers (8,12). Increased awareness is associated with improved psychological functions and has a positive effect on stress (3). Stress may not only cause health problems in nursing students but may also negatively affect their future professional lives. Because mindful awareness interventions significantly reduce the stress of students, these interventions should be included more in nursing education (1). Although exposure to academic and clinical stressors is inevitable in nursing education, this problem can be eliminated with mindful awareness interventions targeting stress management (8).

In this study, it was found that as students' mindful awareness increased, the stress caused by lack of knowledge and skills and the stress they experienced while providing nursing care decreased. For nursing students not to have professional knowledge and skill deficiencies, to cope with future work stresses, and not to be under stress in managing the care of their future patients, it is necessary to target their ability to cope with stress during their undergraduate education (11). Having mindful awareness is considered a promising way to achieve this goal (11). Nurses and nursing students can provide patient-centered, humane care in line with their professional knowledge and skills by recognizing the present moment with mindful awareness and accepting it without judgment and without experiencing stress (11,26).

In our study, students who willingly preferred the nursing department had higher mindful awareness and lower perceived stress than those who reluctantly preferred the nursing department. In the study of Cantekin et al. (27), in which they examined the stress perceived by students of the nursing department in clinical practice, it was determined that the stress perceived by students who willingly preferred the nursing department was significantly lower than the stress perceived by students who did not willingly prefer the nursing department. It has been reported that choosing the nursing department willingly provides the development of professional self-concept, which leads to less stress perception and higher awareness (28). In our study, it was determined that the stress perceived by fourth-year students was higher than that perceived by first- and second-year students. Yıldırım Hamurcu and Terzioğlu (19) also reported that the stress perceived by fourth-grade students was significantly higher than that perceived by other grades. As the grade level increases, students' responsibilities and expectations from students increase, while the level of stress increases with the anxiety of finding a job and entering the profession (19). The fourth-grade students included in our study are intern nurses who continue their education by practicing in the clinical environment. Clinical practice for nursing students is seen as a factor that causes stress because of the responsibilities they assume in nursing care (9,29). In one study, it was reported that high stress decreases clinical performance, and in another study, it was stated that mindful awareness-based interventions are an effective method to reduce stress (30,31).

Study Limitations

The limitation of the study is that the research was carried out only with the students of the nursing department in a college.

Conclusion

It was found that the mindful awareness of students was slightly above the average and the perceived stress was high. As students' mindful awareness levels increase, the level of stress they perceive decreases. Considering the negative effects of stress on students, it is important to structure nursing education in a way that provides students with mindful awareness. Therefore, it is recommended that courses to increase mindful awareness should be included in nursing education curricula and seminars, conferences, and courses should be organized for students.

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Ethics Committee Approval: Ethics Committee approval and necessary institutional permissions were obtained from the Faculty of Medicine Scientific Research Ethics Committee of a Trakya University (TÜTF-BAEK 30.05.2022 date, 2022/237 protocol code) to conduct the research.

Informed Consent: The students were informed that participation was voluntary, their personal information and confidentiality would be protected, and an informed consent page was presented.

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References

1. Chen X, Zhang B, Jin SX, Quan YX, Zhang XW, Cui XS. The effects of mindfulness-based interventions on nursing students: A meta-analysis. *Nurse Educ Today*. 2021;98:104718. [\[Crossref\]](#)
2. Guillaumie L, Boiral O, Champagne J. A mixed-methods systematic review of the effects of mindfulness on nurses. *J Adv Nurs*. 2017;73(5):1017-1034. [\[Crossref\]](#)
3. Song Y, Lindquist R. Effects of mindfulness-based stress reduction on depression, anxiety, stress and mindfulness in Korean nursing students. *Nurse Educ Today*. 2015;35(1):86-90. [\[Crossref\]](#)
4. Aktepe İ, Tolan Ö. Mindfulness: a current review. *Current Approaches in Psychiatry*. 2020;12(4):534-561. [\[Crossref\]](#)
5. Arthur D, Dizon D, Jooste K, Li Z, Salvador M, Yao X. Mindfulness in nursing students: The five facet mindfulness questionnaire in samples of nursing students in China, the Philippines, and South Africa. *Int J Ment Health Nurs*. 2018;27(3):975-986. [\[Crossref\]](#)
6. Spadaro KC, Hunker DF. Exploring the effects of an online asynchronous mindfulness meditation intervention with nursing students on stress, mood, and cognition: A descriptive study. *Nurse Educ Today*. 2016;39:163-169. [\[Crossref\]](#)
7. Yüksel A, Bahadır Yılmaz E. The effects of group mindfulness-based cognitive therapy in nursing students: A quasi-experimental study. *Nurse Educ Today*. 2020;85:104268. [\[Crossref\]](#)
8. McVeigh C, Ace L, Ski CF, Carswell C, Burton S, Rej S, et al. Mindfulness-based interventions for undergraduate nursing students in a university setting: A narrative review. *Healthcare*. 2021;9(11):1493. [\[Crossref\]](#)
9. Uysal N, Çalışkan BB. The effects of mindfulness-based stress reduction on mindfulness and stress levels of nursing students during first clinical experience. *Perspect Psychiatr Care*. 2022;58(4):2639-2645. [\[Crossref\]](#)
10. Aktan GG, Khorshid L. Communication skills and perceived stress of nursing students during first clinical experience. *Journal of Anatolia Nursing and Health Sciences*. 2021;24(2):202-211. [\[Crossref\]](#)
11. Chen Y, Yang X, Wang L, Zhang X. A randomized controlled trial of the effects of brief mindfulness meditation on anxiety symptoms and systolic blood pressure in Chinese nursing students. *Nurse Educ Today*. 2013;33(10):1166-1172. [\[Crossref\]](#)
12. Erkin Ö, Şenuzun Aykar F. The effect of the yoga course on mindfulness and self-compassion among nursing students. *Perspect Psychiatr Care*. 2021;57(2):875-882. [\[Crossref\]](#)
13. Manocchi PE. Fostering academic success in nursing students through mindfulness: A literature review. *Teaching and Learning in Nursing*. 2017;12(4):298-303. [\[Crossref\]](#)

14. Kinsella EA, Smith K, Bhanji S, Shepley R, Modor A, Bertrim A. Mindfulness in allied health and social care professional education: a scoping review. *Disabil Rehabil.* 2020;42(2):283-295. [\[Crossref\]](#)
15. Brown KW, Ryan RM. The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology.* 2003;84:822-848. [\[Crossref\]](#)
16. Özyeşil Z, Arslan C, Kesici Ş, Deniz ME. Adaptation of the Mindful Attention Awareness Scale into Turkish. *Education and Science.* 2011;36(160):224-235. [\[Crossref\]](#)
17. Sheu S, Lin HS, Hwang SL. Perceived stress and physio-psychosocial status of nursing students during their initial period of clinical practice: the effect of coping behaviors. *Int J Nurs Stud.* 2002;39:165-175. [\[Crossref\]](#)
18. Karaca A, Yıldırım N, Ankaralı H, Açıköz F, Akkuş D. Turkish adaptation of Perceived Stress Scale, Bio-psycho-social Response, and Coping Behaviours of Stress Scales for Nursing Students. *J Psychiatric Nurs.* 2015;6(1):15-25. [\[Crossref\]](#)
19. Yıldırım Hamurcu S, Terzioğlu F. Nursing students' perceived stress: Interaction with emotional intelligence and self-leadership. *Perspect in Psychiatr Care.* 2022;58(4):1381-1387. [\[Crossref\]](#)
20. Azak A. Determining mindfulness levels in nursing students. *J Educ Res Nurs.* 2018;15(3):170-176. [\[Crossref\]](#)
21. Sanko J, Mckay M, Rogers S. Exploring the impact of mindfulness meditation training in pre-licensure and post graduate nurses. *Nurse Educ Today.* 2016;45:142-147. [\[Crossref\]](#)
22. Van Vliet M, Jong MC, Jong M. A mind-body skills course among nursing and medical students: a pathway for an improved perception of self and the surrounding world. *Glob Qual Nurs Res.* 2018;5:1-13. [\[Crossref\]](#)
23. VanKuiken D, Bradley J, Harland B, King MO. Calming and focusing: students' perceptions of short classroom strategies for fostering presence. *J Holist Nurs.* 2017;35(2):165-174. [\[Crossref\]](#)
24. Bhurtun HD, Azimirad M, Saaranen T, Turunen H. Stress and coping among nursing students during clinical training: an integrative review. *J Nurs Educ.* 2019;58(5):266-272. [\[Crossref\]](#)
25. D'emeh WM, Yacoub MI. The visualization of stress in clinical training: A study of nursing students' perceptions. *Nurs Open.* 2020;8(1):290-298. [\[Crossref\]](#)
26. Watson R, Yanhua C, Ip MY, Smith GD, Wong TK, Deary IJ. The structure of stress: confirmatory factor analysis of a Chinese version of the stressors in Nursing Students Scale (SINS). *Nurse Educ Today.* 2013;33(2):160-165. [\[Crossref\]](#)
27. Cantekin I, Arguvanlı Çoban S, Dönmez H. The perceived stress level of nursing students regarding the clinical practices in the Covid-19 pandemic. *Journal of Higher Education and Science.* 2021;11(3):592-599. [\[Crossref\]](#)
28. Çöplü M, Tekinsoy Kartın P. Professional self-concept and professional values of senior students of the nursing department. *Nurs Ethics.* 2019;26(5):1387-1397. [\[Crossref\]](#)
29. Sü S, Özlük B, Demirören N. Effects of mentoring in reducing clinical stress levels of nursing students during experiences in their first clinical practice. *International Journal of Human Sciences.* 2018;15(1):280-292. [\[Crossref\]](#)
30. Ye Y, Hu R, Ni Z, Jiang N, Jiang X. Effects of perceived stress and professional values on clinical performance in practice nursing students: A structural equation modeling approach. *Nurse Educ Today.* 2018;71:157-162. [\[Crossref\]](#)
31. Jimenez C, Navia-Osorio PM, Diaz CV. Stress and health in novice and experienced nursing students. *J Adv Nurs.* 2010;66(2):442-455. [\[Crossref\]](#)