The Effects of Online Stress Coping Course on Student Nurses' Perceived Stress and Automatic Thoughts[*]

Hilal SEKİ ÖZ[**] [iD]
Didem AYHAN[***] [iD]

ABSTRACT

It is very important for nursing students to manage stress effectively, because of the stress caused by the individual problems and the negative consequences reflected in the interaction with the patient. This study analyzed whether the 'coping with stress' online course had any effect on the perceived stress levels and automatic thoughts of nursing students based on their behavioral patterns (A or B). This pretest-posttest quasi-experimental research was conducted with 90 students. Data were collected online, using a Personal Information Form, the type-A Personality Scale, the Perceived Stress Scale-10, and the Automatic Thoughts Questionnaire. Descriptive statistics and dependent samples t-test were used in the data analysis. Of the participants, 53.2% had type-A and 46.7% had type-B personalities. After the course, there were significant decreases in mean perceived stress scores of type-A and all nursing students and mean automatic thoughts scores of type-B and all nursing students (p<0.05). It can be said that online education is a suitable method for courses that support personal development such as coping with stress.

Keywords: Perceived Stress, Automatic Thought, Coping With Stress, Nursing Student, Online Course

Çevirim içi Stresle Baş Etme Dersinin Öğrenci Hemşirelerin Algıladıkları Stres ve Otomatik Düşüncelerine Etkisi

ÖZ

Hemşirelik öğrencilerinin stresi etkin yönetmesi, yaşanan stresin bireysel sorunlara sebep olması ve hasta ile etkileşime yansıyan olumsuz sonuçlarından dolayı oldukça önemlidir. Bu çalışma ile çevirim içi stresle baş etme dersinin öğrenci hemşirelerin kişilik tiplerine (A veya B) göre algıladıkları stres ve otomatik düşüncelerine etkisi incelenmiştir. Ön test, son test ölçümlü, yarı deneysel desende olan bu araştırma stresle baş etme dersine kayıtlı olan ve araştırmaya katılmayı kabul eden 90 öğrenci hemşire ile yapılmıştır. Veriler Tanıtıcı Bilgi Formu, Kişilik Tipi Ölçeği, Algılanan Stres Ölçeği-10 ve Otomatik Düşünceler Ölçeği ile çevirim içi olarak toplanmıştır. Veri analizinde tanımlayıcı istatistikler ve bağımlı örneklem t testi kullanılmıştır. Araştırmaya katılan öğrencilerin %53,3'ü A tipi, %46,7'si B tipidir. Stresle baş etme dersi sonunda A tipi olan ve tüm öğrencilerin algıladıkları stres puanları, B tipi olan ve tüm öğrencilerin otomatik düşünce puanları önemli düzeyde azalmıştır (p<0.05). Çevirimiçi eğitimin stresle başa çıkma gibi kişisel gelişimi destekleyen dersler için uygun bir yöntem olduğu söylenebilir.

Anahtar Kelimeler: Algılanan Stres, Otomatik Düşünce, Stresle Baş Etme, Hemşirelik Öğrencisi, Çevirim İçi Ders

1. Introduction

Stress is a natural ingredient of life, and a life without stress cannot even be imagined. It is known that stress has a positive effect that is protective and stimulating up to a certain level. However, if it has high intensity and cannot be managed, by breaking individual strength and self-integrity, it affects physical and mental health negatively (Deniz & Yılmaz, 2016). An individual's perceived stress about an incident is not relevant to the incident itself but to the way of perceiving the incident and the meaning attributed to the incident by the individual. Automatic thoughts that are present within the cognitive structure are thoughts which come to mind all of a sudden, the accuracy of which is not questioned, and which mostly have negative content and are distorted (Beck, 2019). Even if these structures enable a person to take measures ensuring survival by strengthening the perception of danger, they often lead the person to perceive the situation from a more distorted perspective and experience higher levels of stress (Leahy, 2018). It was put forward that the higher stress perceptions and negative emotions a person has, the more intense automatic thoughts the person will have (Jones-Smith, 2019). Another factor affecting the perception of stress is the person's behavioral pattern. It was asserted that type-A individuals had higher stress perceptions along with having inadequate coping skills and being over-competitive, aggressive, highly ambitious and

impatient (Leahy, 2018). In previous studies, it was stated that type-A individuals were confronted with different health problems in comparison to those that were not type-A individuals, and through the neuroendocrine system, this situation was associated with cardiovascular reactivity toward stress (Hicks & Mehta, 2018; Sahoo et al., 2018).

Just as individuals' behavioral patterns, their professions may also affect the intensity of the stress experienced by them. The professions that are involved with challenging life events in their daily routine of work and contain long shift work are more at risk in terms of the negative effects of stress. As of school years, nursing is a more stress-intensive profession than other professions excluding those in the healthcare sector (Ergin, Çevik, & Pakis Çetin, 2018). As well as experiencing physical health problems along with intense stress, nurses can face psychological consequences, such as burnout, which affect the quality of the patient care they provide negatively (Çam & Engin, 2017). Therefore, nursing education should prepare student nurses for stress to be experienced in the clinical setting and professional life in the future. In this respect, in nursing education, as well as equipping students with knowledge and skills specifically relevant to nursing, it is important to train nurses who have self-knowledge, think critically, can make decisions, can solve problems, assume responsibility, establish cooperation, and have effective coping skills (Reyes et al., 2015). This way, nursing students will be able to cope more effectively both with academic and life stress experienced in nursing education and with stress to be experienced in clinical and work settings in the future.

In the COVID-19 pandemic period, in nursing education, online instruction methods have become a compulsory alternative to ensure the continuity of education, and studies have been needed to evaluate the effectiveness of these methods in the pandemic period, the trajectory of which has been unpredictable. The online coping with stress course aims to enable student nurses to have self-knowledge, understand the relationship between their thoughts, emotions and behaviors, be aware of cognitive distortions that increase stress levels, and develop their problem-solving and coping skills. In the relevant literature, there are studies aimed at developing nursing students' skills in coping with stress (Aloufi et al., 2021; Noh & Kim, 2021; Varol et al., 2015); however, there is a small number of studies about offering online education on the topic (Garmaise-Yee & LeBlanc, 2021). Therefore, this study aimed to analyze the effect of the online coping with stress course on student nurses' thought patterns and stress levels based on their behavioral patterns.

2. Materials and Method
2.1 Research Model and Hypotheses
The study was conducted as a pretest-posttest quasi-experimental intervention study. For this purpose, as research hypotheses;

1. After the online coping with stress course, the perceived stress scores of the students according to their personality types will decrease.

2. After the online stress coping course, the automatic thought scores of the students according to their personality types will decrease.

2.2. Population and Sample
The population of the study comprised 120 second-year students who were studying at the Department of Nursing of the Faculty of Health Sciences of Kırşehir Ahi Evran University and took the online course. A sampling method was not specifically utilized to select participants from the population, and hence, the research was conducted with 90 students who voluntarily agreed to participate in the study. Inclusion criteria for the research; being enrolled in a stress coping course, attending all classes synchronously or asynchronously, and voluntarily accepting to participate in the research. To assure that the participants would have the opportunity to consent to participate in the study before the research process was launched, the students who were enrolled in the online course were e-mailed an informed consent form providing information about the research process and stating that participation in the research was not compulsory and would not affect the final grade to be received from the course, and participants would be free to withdraw from the study anytime they desired so. The students who were

enrolled in the online course were allowed some time for making a decision about participating in the study, and after a week, the link to the online survey form containing the data collection instruments was sent to them. The students could answer the survey questions only after they stated that they consented to participate in the study through the online survey form. In the pre-test and post-test data entry, the researchers checked whether there were students enrolled in the course and the measurements were matched for the same student.

2.3. Research Process

The study was conducted from February 15, 2021 to June 1, 2021. At the beginning of the study, the students were divided into two groups to promote interaction within the class. Each group had the same course content and had two online classes (one hour) per week for 14 weeks, or in other words, a total of 28 online classes during the course period. The students were registered to the distance education system of the Ahi Proficiency-Based Education Project (APBEP), and the classes were taught synchronously. The registrations of the online courses are taken at APBEP, and even if the students cannot attend the course synchronously, they watch the courses later. In this direction, the students who did not attend the course were able to watch the recordings later and were checked by the researchers from the system. At the beginning of the research, 5 students who participated in the research did not complete the post-test and were excluded from the research. For this reason, the research started with 95 participants and was completed with 90 participants. Besides the classes, the students had home assignments, and the researchers evaluated the home assignments submitted by the students and provided the students with feedback. After the permission to perform the study was received from the institution where the research would be conducted, and ethical approval for the study was obtained from the ethics committee, the online survey form was given to the participants in the pretest phase just before the online course, and later, the online survey form was reapplied to the participants in the posttest phase at the end of the 14th week when the online course was completed. While the course content was being produced, Cognitive Behavioral Therapy techniques served as the basis (Beck, 2019), and the agenda of the online classes and home assignments was created in light of the relevant literature (Amanvermez et al., 2021; Yüksel & Yılmaz, 2020; Hiçdurmaz & Öz, 2016). Figure 1 displays the research process and the online course content.
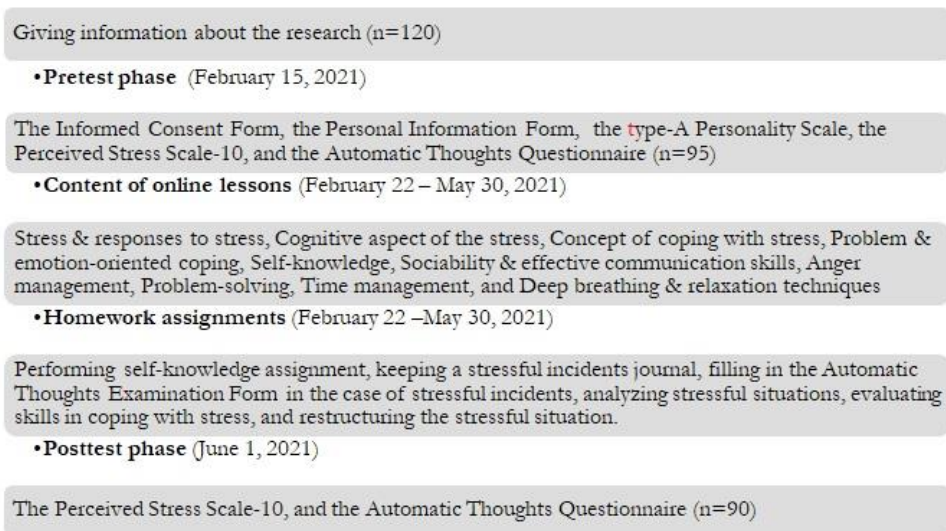
Giving information about the research (n=120)
- **Pretest phase** (February 15, 2021)

The Informed Consent Form, the Personal Information Form, the type-A Personality Scale, the Perceived Stress Scale-10, and the Automatic Thoughts Questionnaire (n=95)
- **Content of online lessons** (February 22 – May 30, 2021)

Stress & responses to stress, Cognitive aspect of the stress, Concept of coping with stress, Problem & emotion-oriented coping, Self-knowledge, Sociability & effective communication skills, Anger management, Problem-solving, Time management, and Deep breathing & relaxation techniques
- **Homework assignments** (February 22 – May 30, 2021)

Performing self-knowledge assignment, keeping a stressful incidents journal, filling in the Automatic Thoughts Examination Form in the case of stressful incidents, analyzing stressful situations, evaluating skills in coping with stress, and restructuring the stressful situation.
- **Posttest phase** (June 1, 2021)

The Perceived Stress Scale-10, and the Automatic Thoughts Questionnaire (n=90)

Figure 1. Flow diagram of the research process and the content of lessons

Information presented to the participants with the online classes was supported with home assignments, and group discussions were also held. In line with the online course content, at the beginning of the study, it was ensured that the participants kept journals so that they would have self-knowledge and

be aware of the skills that they used in coping with stressful situations. Later, with the Automatic Thoughts Examination Form (Türkçapar, 2014), the participants' thoughts, emotions and behaviors about the incident under stressful circumstances were recorded, and hence, data about the participants' automatic thoughts were collected. The effect of these thoughts on emotions and behaviors was analyzed, and priority was placed on individual coping skills. Next, functional thinking activities were performed, and the home assignment, "How would I behave if I experienced the stressful situation once again?", was discussed. An evaluation on effective coping skills was also made with both groups.

2.4. Data Collection Tools
In the study, a Personal Information Form, the Type-A Personality Scale, the Perceived Stress Scale-10 and the Automatic Thoughts Questionnaire were used as the data collection tools.

2.4.1. Personal Information Form
This form developed by researchers comprised 10 questions addressing the participants' certain personal characteristics.

2.4.2. Type-A Personality Scale
Designed as a five-point Likert-type scale, the Type-A Personality Scale comprises 25 items. The scores to be obtained from the scale range between 25 and 125 points. Scores at or above the cutoff value of 75 indicate that the respondent is a type-A person, while scores below 75 indicate that the respondent is a type-B person. The scale was developed by Batıgün and Şahin (2006) and the Cronbach's alpha coefficient of the scale was reported as .90 in the study. In the pretest and posttest phases of this study, the Cronbach's alpha coefficient of the scale was calculated consecutively as .85 and .87.

2.4.3. Perceived Stress Scale-10 (PSS-10)
The scale developed by Cohen, Kamarck and Mermelstein (1983) is composed of 10 items. The scale self-report scale measures how stressful a respondent perceives certain circumstances in life. PSS-10 is designed as a five-point Likert-type scale, and the scores to be obtained from the scale range between 4 and 40 points. Items 4, 5, 7 and 8 are inversely scored. PSS-10 was adapted to Turkish by Eskin et al. (2013), and its Cronbach's alpha coefficient was found as .85. In the pretest and posttest phases of this study, the Cronbach's alpha coefficient of the scale was calculated respectively as .86 and .75.

2.4.4. Automatic Thoughts Questionnaire (ATQ)
The questionnaire developed by Hollon and Kendall (1980) and adapted to Turkish by Şahin and Şahin (1992) has 30 items. ATQ is designed as a five-point Likert-type scale, and the scores to be obtained from ATQ range between 30 and 150 points. Higher scores indicate that the respondent's automatic thoughts pop up frequently. In the validity and reliability study for ATQ in Turkish, the Cronbach's alpha coefficient of the scale was found as .93. In the pretest and posttest phases of this study, the Cronbach's alpha coefficient of the scale was found successively as .95 and .96.

2.5. Data Analysis
The collected data were analyzed by using the Statistical Package for the Social Sciences (SPSS) for Windows 25.0 and the Analysis of Moment Structures (AMOS) 23.0 software. In the analysis, descriptive statistics (frequency, percentage, mean, standard deviation) were used. Whether the variables were normally distributed was checked with normality tests and skewness and kurtosis values, and the Cronbach's alpha internal consistency coefficient was utilized to test the reliability of the scales that were used in the study. In the comparison of the normally distributed pretest and posttest scores, paired-samples t-test was used. In the analyses, the level of statistical significance was identified as a p-value below 0.05 ($p < 0.05$).

2.6. Ethics Statement

Before the research process was launched, ethical approval was received from the Non-Invasive Clinical Research Ethics Committee of Kırşehir Ahi Evran University (Date: February 9, 2021, No: 2021-03/35). The data were collected in compliance with the principles of the Declaration of Helsinki, and with the informed consent form, each participant obtained information about the research and consented to participate in the study.

3. Results

In the study, it was found that the participants had a mean age of 20.52±1.26 years, 37.8% of them were 20 years old, 75.6% of them were female, 60% lived in the provincial center, 84.4% had nuclear families, 63.3% the mother of participants were primary school graduates, 57.8% the father of participants were primary school graduates, and 65.6% had incomes equaling expenses. Upon the review of the participants' behavioral patterns, it was discerned that 53.3% of them had type-A personalities, whilst 46.7% had type-B personalities (Table 1).

Table 1. Breakdown of participant nursing students by descriptive characteristic

Characteristics (n=90)		n	%
Age	19 years	18	20.0
	20 years	34	37.8
	21 years	22	24.4
	22 years or above	16	17.8
Gender	Male	22	24.4
	Female	68	75.6
Place of residence	Province center	54	60.0
	District-village	36	40.0
Family type	Nuclear family	76	84.4
	Extended family	14	15.6
Mother's education level	Illiterate	9	10.0
	Primary school	57	63.3
	High school	14	15.6
	University	10	11.1
Father's education level	Illiterate	2	2.2.
	Primary school	52	57.8
	High school	19	21.1
	University	17	18.9
Monthly income level	Low income	17	18.9
	Income equaling expenses	59	65.6
	High income	14	15.6
Behavior pattern	Type-A	48	53.3
	Type-B	42	46.7

While the mean pretest and posttest PSS-10 scores of type-A participants decreased significantly in the posttest phase in comparison to the pretest phase (p=0.002), there was no significance for type-B participants (p=0.144). At the same time, post-test mean scores of all participants were significantly lower than pre-test scores (p=0.001). When the mean pre-test and post-test ATQ scores of the B type participants were compared, the post-test mean scores were significantly lower than the pre-test means scores (p=0.006), but this was not significant for the type-A participants (p=0.211). However, all participants decreased significantly in the posttest phase in comparison to the pretest phase (p=0.009) (Table 2).

Table 2. Participant nursing students' mean pretest and posttest PSS-10 and ATQ scores as per their behavior patterns

	Type-A	Type-B	All participants
	X ± SD	X ± SD	X ± SD
PSS-10			
Pretest	21.38±5.70	18.93±5.95	20.23±5.91
Posttest	19.00±3.56	17.67±4.56	18.38±40.09
t-value	3.202	1.488	3.317
p-value	**0.002**	0.144	**0.001**
ATQ			
Pretest	65.44±20.52	50.52±18.25	58.48±20.78
Posttest	62.15±19.52	47.57±16.99	55.34±19.69
t-value	-1.252	-2.723	-2.597
p-value	0.211	**0.006**	**0.009**

4. Discussion

Undergraduate nursing students may have high levels of stress, anxiety, or depression. This does not only influence their personal health and academic performance but also may affect their interactions with patients during their clinical practice and the quality and safety of the healthcare services they provide. In this study that analyzed whether the online coping with stress course had any effect on nursing students' stress levels and automatic thoughts based on their behavioral patterns, it was discerned that the type-A participants obtained a higher mean PSS-10 score than the type-B participants in the pretest phase. After the online course period was completed, there was a statistically significant decrease in the mean PSS-10 scores of all participants and type-A participants in the posttest phase. In a meta-analysis conducted to evaluate interventions targeted to reduce stress, anxiety and depressed moods in undergraduate nursing students, 10 studies about stress were examined, and it was stated that mindfulness-based approaches were used in most studies, and there was a statistically significant decrease in nursing students' stress levels after the interventions (Aloufi et al., 2021). Moreover, in a previous study, 60 students participated in an online mindfulness-based intervention aiming to reduce stress, and following the online intervention, even if the participants' mean stress scores decreased, there was no statistically significant decrease in their stress levels, while there was a statistically significant increase in their mindfulness scores, and larger increases in mindfulness levels were associated with larger decreases in stress (Garmaise-Yee & LeBlanc, 2021). In a four-session intervention study that was designed to develop communication skills in nursing students receiving clinical training and aimed at reducing nursing students' stress levels in clinical practice, a significant enhancement was found in the clarity of communication of the students, as well as a significant decrease in clinical training stress and an improvement in clinical competence (Noh & Kim, 2021). The findings of this study were in a similar vein to the findings in the relevant literature. However, there was no study about behavioral patterns in the relevant literature. A type-A personality that is characterized originally by being constantly in a race against time and behaving in a success-oriented manner is considered to lead the person to work faster, perform multiple tasks simultaneously, be impatient and be prone to anger (Baltaş, 2021). Type-A individuals are perfectionists, diligent and feel under time pressure. Thus, these individuals may have higher levels of stress or be more prone to stress in daily life (Akıncı et al., 2015). It may be considered that the reason for the statistically significant decrease in the type-A participants' stress levels along with the online coping with stress course in this study was that the online course raised awareness about type-A individuals' thought, emotion and behavior traits, gave insights about health problems to be created by a type-A personality, and the type-A participants participated more actively in the course along with being more success-oriented and ambitious. Besides, the higher PSS-10 scores obtained before the online course by the type-A participants in this study may again be considered as a reflection of their personality traits.

Another factor associated with the perception of stress is automatic thoughts. In this study, it was found that the type-A participants obtained a higher mean ATQ score than the type-B participants, and after the online coping with stress course, there was a statistically significant decrease in the mean ATQ scores of all participants and the type-B participants. In a study performed with university students, it was

found that education on coping with stress had no effect on university students' styles of coping with stress but had a statistically significant effect on a decrease in their automatic thoughts scores (Varol, Karakaş, & Bedel, 2015). Moreover, it was identified that there was an increase in the skill of coping with stress and a decrease in automatic thoughts following an eight-session cognitive behavioral therapy provided to adolescents (Bingol & Buzlu, 2016). Furthermore, in the study performed by Gültekin (2014) to develop critical thinking skills, a decrease in students' automatic thoughts was observed, and as the students' automatic thoughts decreased, their problem-solving skills were enhanced. Positive thoughts about the experience of a stressful situation, the belief in having the ability to cope with stress and constructive problem-solving skills serve as protective factors in coping with stress (Linda et al., 2012). In a study conducted with undergraduate students, it was put forward that the decrease in negative automatic thoughts would help undergraduate students manage anxiety and stress (Mahmoud et al., 2015). Thus, the results of previous studies were in agreement with the finding of this study. It may be stated that along with the online course, enhancing self-knowledge, understanding and analyzing rumination and dysfunctional automatic thoughts, and replacing them with functional thoughts, as well as noticing negative attributions and cognitive distortions, contributed to the decrease in automatic thoughts according to the finding of this study. In this study, after the online course, there was a statistically significant decrease in the mean ATQ score of the type-B participants. Type-B individuals are people who are less competitive, calmer, less committed to their tasks and less time-sensitive. Type-B individuals adopt a less irreconcilable, more balanced and more comfortable approach toward time. These individuals who have a more flexible personality trait feel more secure and are more open to changes. Considering these personality traits, it is understandable why the type-B participants in this study had a lower mean ATQ score than the type-A participants. Besides, the statistically significant decrease in the negative automatic thoughts of the type-B participants after the online coping with stress course may be explained by the possibility that type-B participants were people who were more flexible, more open to changes, more tolerant and more acquiescent and comfortable with making errors.

The coping with stress course was offered online due to the ongoing COVID-19 pandemic. In this study, along with the significant decrease in PSS-10 and ATQ scores after the online course, it may be considered that the online method used in coping with stress was effective. In a study in which online psychoeducational interventions (cognitive-behavioral techniques, stress management techniques, mindfulness-based stress reduction, and positive psychotherapy) were utilized to reduce stress in patients hospitalized due to COVID-19 infection, it was stated that the patients had high satisfaction levels along with interventions (Shaygan, Yazdani, & Valibeygi, 2021). In another study, it was found that online stress-management education given to nursing students was effective (Garmaise-Yee & LeBlanc, 2021). The COVID-19 pandemic created numerous challenges for faculty members and students in all parts of the world, and in particular, for nursing education that used to be based on practical and experiential learning and carried out in a face-to-face learning setting (Wallace et al., 2021). Along with the increase in the number of studies about the effectiveness of online methods, further evidence will be obtained for strategies and future planning for the continuation of nursing education under the conditions of the pandemic.

5. Conclusion

The quality of nurses of the future will increase as the productivity of online courses for students who are away from face-to-face education during the pandemic can be maximized. According to the results of this study, the online coping with stress course provided a significant decrease in the nursing students' perceived stress and automatic thought scores. Considering the importance of effective stress management in both the individual development and professional life of nursing students, these skills should be gained in undergraduate education. In this respect, it may be argued that online methods are suitable methods for classes that affect personal development such as coping with stress.

The main limitation of this study was that it was conducted in a single center and without a control group, and the collection of data relied on the participants' self-reports.

References

Akıncı Z., Güven, M., & Demirel O. N. (2015). Research on the relationship between students' A and B type personality structure and mobbing and depression. *Journal of Financial, Political & Economic Comments, 52*(604), 55–74.

Aloufi, M. A., Jarden, R. J., Gerdtz, M. F., & Kapp, S. (2021). Reducing stress, anxiety and depression in undergraduate nursing students: Systematic review. *Nurse Education Today, 102*, 104877. https://doi.org/10.1016/j.nedt.2021.104877

Amanvermez, Y., Rahmadiana, M., Karyotaki, E., de Wit, L., Ebert, D. D., Kessler, R. C., & Cuijpers, P. (2021). Stress management interventions for college students: A systematic review and meta-analysis. *Clinical Psychology: Science and Practice.* https://doi.org/10.1111/cpsp.12342

Baltaş, A. & Baltaş, Z. (2021). Stress and ways to cope. (31th ed.) Remzi Bookstore; Istanbul.

Batigün, A. D., & Şahin, N. H. (2006). Two scales for job stress and psychological health investigation: type-a personality and job satisfaction. *Turkish Journal of Psychiatry, 17*(1), 32–45.

Beck, A. T. (2019). Cognitive therapy: reflections. In The evolution of psychotherapy. Routledge.

Bingol, F., & Buzlu, S. (2016). Effect of the Cognitive-Behavioral Prevention Program on levels of depression symptoms among working adolescents in Turkey. *Journal of Psychosocial Nursing and Mental Health Services, 54*(7), 43–51. https://doi.org/10.3928/02793695-20160616-08

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385–396. https://doi.org/10.2307/2136404

Çam, M. O., & Engin, E. (2017). Burnout in nurses. *Journal of International Social Research, 10*(51), 501–507. http://dx.doi.org/10.17719/jisr.2017.1783

Deniz, M. E., & Yılmaz, E. (2016). Examination of the relationship between emotional intelligence and stress coping styles in university students. *Turkish Psychological Counseling and Guidance Journal, 3*(25),17–26.

Eskin, M., Harlak, H., Demirkıran, F., & Dereboy, Ç. (2013). Turkish adaptation of the perceived stress scale: reliability and validity analysis. *New Symposium Journal, 51*(3), 132–140.

Ergin, E., Çevik, K., & Pakis Çetin, S. (2018). Investigation of nursing students' perception of stress and coping behaviours of stress regarding education. *Education and Research in Nursing, 15*(1), 16–22. http://dx.doi.org/10.5222/HEAD.2018.016

Garmaise-Yee, J. S., & LeBlanc, R. G. (2021). Reducing stress and increasing mindfulness in nursing students: an online mindfulness intervention study. *Nursing Education Perspectives.* https://doi.org/10.1097/01.NEP.0000000000000887

Gültekin, M. (2014). *The effect of the critical thinking skills program on high school students' automatic thoughts* [Doctoral dissertation, Sakarya University]. Turkish Council of Higher Education. https://tez.yok.gov.tr/UlusalTezMerkezi/giris.jsp

Hicks, R. E., & Mehta, Y. (2018). The Big Five, Type A Personality, and Psychological Well-Being. *International Journal of Psychological Studies, 10*(1), 49-58. https://doi.org/10.5539/ijps.v10n1p49

Hiçdurmaz, D., & Öz, F. (2016). Interpersonal sensitivity, coping ways and automatic thoughts of nursing students before and after a cognitive-behavioral group counseling program. *Nurse Education Today, 36*, 152–158. https://doi.org/10.1016/j.nedt.2015.09.006

Hollon, S. D., & Kendall, P. C. (1980). Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. *Cognitive Therapy and Research, 4*(4), 383–395. https://doi.org/10.1007/BF01178214

Jones-Smith, E. (2019). Theories of counseling and psychotherapy: An integrative approach. (2nd ed.) Sage Publications, California.

Leahy, R. L. (2018). *Emotional schema therapy: Distinctive features.* (1st ed.) Routledge, New York

Linda, W. P., Marroquı́n, B., & Miranda, R. (2011). Active and passive problem solving as moderators of the relation between negative life event stress and suicidal ideation Among suicide attempters and nonattempters. *Archives of Suicide Research, 16*, 183–197. https://doi.org/10.1080/13811118.2012.695233

Mahmoud, J. S., Staten, R. T., Lennie, T. A., & Hall, L. A. (2015). The relationships of coping, negative thinking, life satisfaction, social support, and selected demographics with anxiety of young adult college

students. *Journal of Child and Adolescent Psychiatric Nursing*, *28*(2), 97–108. https://doi.org/10.1111/jcap.12109

Noh, G. O., & Kim, M. (2021). Effectiveness of assertiveness training, SBAR, and combined SBAR and assertiveness training for nursing students undergoing clinical training: A quasi-experimental study. *Nurse Education Today*, *103*, 104958. https://doi.org/10.1016/j.nedt.2021.104958

Türkçapar, H. (2014). *Cognitive therapy* (7th ed.). HYB Publishing. Ankara.

Reyes, A. T., Andrusyszyn, M. A., Iwasiw, C., Forchuk, C., & Babenko-Mould, Y. (2015). Resilience in nursing education: An integrative review. *The Journal of Nursing Education, 54*(8), 438–444. https://doi.org/10.3928/01484834-20150717-03.

Sahoo, S., Padhy, S. K., Padhee, B., Singla, N., & Sarkar, S. (2018). Role of personality in cardiovascular diseases: An issue that needs to be focused too!. *Indian heart journal, 70*(3), 471-477. https://doi.org/10.1016/j.ihj.2018.11.003

Shaygan, M., Yazdani, Z., & Valibeygi, A. (2021). The effect of online multimedia psychoeducational interventions on the resilience and perceived stress of hospitalized patients with COVID-19: A pilot cluster randomized parallel-controlled trial. *BMC Psychiatry*, *21*(1), 93. https://doi.org/10.1186/s12888-021-03085-6

Şahin, N. H., & Şahin, N. (1992). Reliability and validity of the Turkish version of the automatic thoughts questionnaire. *Journal of Clinical Psychology, 48*(3), 334–340. https://doi.org/10.1002/1097-4679(199205)48:3<334::AID-JCLP2270480311>3.0.CO;2-P

Wallace, S., Schuler, M. S., Kaulback, M., Hunt, K., & Baker, M. (2021). Nursing student experiences of remote learning during the COVID-19 pandemic. *Nursing Forum*, *56*(3), 612–618. https://doi.org/10.1111/nuf.12568.

Varol, R., Karakaş, S., & Bedel, A. (2015). The effect of stress coping education on university students' coping styles and automatic thoughts. *International Journal of Eurasia Social Sciences, 6*(19), 76–91.

Yüksel, A., & Yılmaz, E. B. (2020). The effects of group mindfulness-based cognitive therapy in nursing students: A quasi-experimental study. *Nurse Education Today*, *85*, 104268. https://doi.org/10.1016/j.nedt.2019.104268