Original Article

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The Relationship of Students' Coping Styles with Stress and E-Learning in the COVID-19 Pandemic

COVID-19 Pandemisinde Öğrencilerin Stresle Başa Çıkma Tarzlarının E-Öğrenme İle İlişkisi

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ABSTRACT

Objective: This research was planned to evaluate the relationship between coping styles with stress and e-learning of health services vocational school students during the distance education process in the Coronavirus diease-19 (COVID-19) pandemic.

Methods: The sample of this descriptive and cross-sectional research consisted of 425 students who agreed to participate in the research. The data were collected using the student information form created by the researchers, "The Coping with Stress scale" and "Attitude scale Towards E-learning".

Results: It was determined that 72.2% of the students were worried about COVID-19 pandemic process. In the helpless approach sub-dimension, a significant difference was found between the students with low socioeconomic level and those with middle socioeconomic level ($p<0.05$). Helpless approach score averages of students with low socioeconomic level were higher than other groups. In the self-confident approach sub-dimension, there was a significant difference between the students with high socioeconomic level and those with low ($p<0.05$). Students with a high socioeconomic level were found to have high median scores of self-confident approach sub-dimension. In addition, a difference was found between students with internet availability and those without internet availability in terms of the mean score of the e-learning attitude scale ($p<0.05$). A low positive correlation was found between "The Coping with Stress scale" and "Attitude scale Towards E-learning" ($p<0.01$).

ÖZ

Amaç: Bu araştırma; Koronavirüs hastalığı-19 (COVID-19) pandemisinde uzaktan eğitim sürecinde sağlık hizmetleri meslek yüksekokulu öğrencilerinin stresle başa çıkma tarzlarının e-öğrenme ile ilişkisini değerlendirmek amacı ile planlandı.

Yöntemler: Tanımlayıcı ve kesitsel nitelikte olan araştırmanın örneklemini çalışmaya katılmayı kabul eden 425 öğrenci oluşturdu. Veriler araştırmacılar tarafından oluşturulan öğrenci bilgi formu, "Stresle Başa Çıkma Tarzları ölçeği" ve "E-öğrenmeye Yönelik Tutum ölçeği" kullanılarak toplandı.

Bulgular: Öğrencilerin %72,2'sinin pandemi süreciyle ilgili olarak endişe duyduğu belirlendi. Çaresiz yaklaşım alt boyutunda, sosyoekonomik düzeyi düşük ve orta düzey olan öğrenciler arasında anlamlı fark bulundu ($p<0,05$). Sosyoekonomik düzeyi düşük öğrencilerin çaresiz yaklaşım puan ortalaması diğer gruplara göre daha yüksekti. Kendine güvenli yaklaşım alt boyutunda sosyoekonomik düzeyi yüksek olan öğrencilerle düşük olan öğrenciler arasında anlamlı fark saptandı ($p<0,05$). Sosyoekonomik düzeyi yüksek olan öğrencilerin kendine güvenli yaklaşım alt boyut ortanca puanı yüksek saptandı. Ayrıca internet erişimi olan ve olmayan öğrenciler arasında e-öğrenmeye yönelik tutum ölçeği ortalama puanı açısından fark bulundu ($p<0,05$). "Stresle Başa Çıkma ölçeği" ile "E-öğrenmeye Yönelik Tutum ölçeği" arasında düşük pozitif korelasyon saptandı ($p<0,01$).

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Conclusion: There is a positive relationship between the ways of coping with stress and the attitude towards e-learning in healthcare students during the pandemic process.

Keywords: COVID-19, e-learning, students, health, stress

Sonuç: Sağlık hizmeti öğrencilerinde pandemi sürecinde stresle başa çıkma yolları ile e-öğrenmeye yönelik tutumlar arasında pozitif bir ilişki vardır.

Anahtar Sözcükler: COVID-19, e-öğrenme, öğrenci, sağlık, stres

Introduction

The World Health Organization declared Coronavirus disease-19 (COVID-19) as an emergency high-risk pandemic on January 30 2020 (1). COVID-19 is a dangerous viral disease that involves a wide range of symptoms from mild to severe, causing pneumonia by affecting the respiratory tract and spreading globally (2). General symptoms include fever, cough, shortness of breath, weakness, muscle and body aches, headache, loss of taste, sore throat, runny nose, nausea, and diarrhea (3). The number of people losing their lives due to the COVID-19 pandemic is increasing day by day, and this number reaches millions (4). In line with the COVID-19 pandemic data, which is updated every day, every hour, countries have to constantly renew themselves in stopping and preventing the pandemic. Although there are uncertainties about the spread of the COVID-19 pandemic, it is known that it passes from person to person by respiration. The Center for Disease Control and Prevention has reported that COVID-19 can be transmitted to a healthy person in close contact with respiratory droplets produced by the coughing, sneezing or speech of infected or asymptomatic carriers (3). Management of the disease includes measures such as using a mask, providing hand hygiene, not traveling to high-risk areas, and avoiding people with suspected COVID-19 and crowded environments (5).

Isolation applied in order to reduce the spread and manage the process in the COVID-19 pandemic has affected social, economic and educational life. This process has led to the creation of new models in education. E-learning, which takes part in the teaching process in the distance education model, has quickly gained a place in the modern education approach (6). E-learning can also be defined as online learning, disorganized learning, web learning, and virtual learning (7). In e-learning, students have a role as well as educators. Students should have a high level of readiness in e-learning. This can be achieved by increasing technical and training support (8).

In this process, the rapid transformation of education and training into an e-learning model negatively affects especially students in associate degree programs who have a large number of applied courses such as first and emergency aid, anesthesia, physiotherapy, elderly care, medical laboratory techniques. Students are experiencing a lot of stress with both the rapidly changing education process and the threat of COVID-19 on health (9). In a research conducted with students studying in the field of health, it was observed that students experienced stress in both clinical and educational settings (10). Stress causes many negative conditions in people such as acute and chronic diseases, depression, exhaustion, anxiety and insomnia, increased smoking and alcohol use and aggressive behavior. Stress is an individual situation and there is no common solution for coping with stress. Each individual must manage his/her own stress, find a method of coping with stress that is appropriate for his/her personality structure and view of life, and cope effectively with stress (11).

Ways of coping with stress can set the stage for positive developments in university students towards learning by mobilizing them (11). Taking necessary precautions to manage stress on time is extremely important for the efficiency of education (12). Based on this information, we aimed to determine the relationship between e-learning and the ways of coping with stress of health services vocational school students during the COVID-19 pandemic process.

Method

Research Type

This research is planned as descriptive and cross-sectional.

Research Sample

The population of this research consisted of 714 students receiving education in emergency and first aid, anesthesia, medical laboratory techniques, aged care and physiotherapy program in the 2019-2020 spring semester at a health services vocational school in Turkey. Sample selection was not made in the research, it was tried to reach the population. The research included students who were educated and trained in the health services vocational school of the relevant institution, who used the e-learning method (to continue their education with technology tools such as telephone, computer, etc.) and who agreed to participate in the research. The data of the research were collected between May 28 and June 28 2020. The research was completed with 425 students. The return rate of students was calculated as 59%.

Ethical Approval

Ethics committee approval was obtained from the Non-Invasive Clinical Research Ethics Committee of the institution where the research was conducted with the decision numbered 40465587-102.01-105.

Research Variables and Data Collection Tools

After obtaining Ethics committee approval we reached the head of health services vocational school through corporate communication network. The research objectives were presented for ethical permission, while assuring that the research was voluntary and all data would be treated confidentially throughout the research phase. And finally, head of the health services vocational school agreed to share the e-mail address of their students. The data were collected electronically with the

form created with Google e-form. In the introduction part of this form, a voluntary consent was received from the students. The form of the students who did not voluntarily accept to participate in the research was terminated after this consent question.

The form consisted of three parts. In the first part, a student information form with 14 questions was used to determine the sociodemographic variables and information about e-learning of students. In the second part, "The Coping with Stress scale", which included 30 questions to determine the ways of coping with stress was used. In the third part, "The Attitude scale Towards E-learning" consisting of 23 questions was used to determine the effect of distance education. In the data; sociodemographic variables constituted the independent variables, and "The Coping with Stress scale" and "Attitude scale Towards E-learning" constituted the dependent variables.

Student Information Form: In this section, there were a total of 14 questions including nine questions about sociodemographic variables (age, program, school year, gender, marital status, place of residence, family type, socioeconomic level and working status in a health institution) and five questions about determining e-learning variables (having android phone, having personal computer, the internet availability in the place of residence, technological device used in education and training, technological device used in education and training, worrying about the COVID-19 pandemic) (7,9,13).

The Coping with Stress Scale: The scale was developed by Folkman and Lazarus (14) with 66 items, and validity and reliability study in Turkey was made by Siva (1991), and then, by making psychometric evaluations by Şahin and Durak (15), the short form with 30 items and 5 sub-dimensions was constituted. The scale is a self-assessment. The items are scored on a 4-point likert-type scale, anchored by 0=never and 3=always. The scale consists of self-confident approach (8,10,14,16,20,23,26), optimistic approach (2,4,6,12,18), helpless approach (3,7,11,19,22,25,27,28), submissive approach (5,13,15,17,21,24), seeking of social support approach sub-dimensions (1,9,29,30). Cronbach alpha values of sub-dimensions; range from 0.49-0.68 in the optimistic approach, 0.62-0.80 in the self-confident approach, 0.64-0.73 in the helpless approach, and 0.47-0.72 in the submissive approach (14,15). In this research, cronbach alpha value for self-confident approach sub-dimension was 0.80, for optimistic approach sub-dimension 0.71, for helpless approach sub-dimension 0.74, for submissive approach sub-dimension 0.61, and for seeking of social support approach sub-dimension 0.47.

Attitude Scale Towards E-Learning: The scale developed by Kisanga (16) to determine under what conditions and in what direction the attitudes of university students towards e-learning differ, consists of 23 items and 4 sub-dimensions. Validity and reliability study of the scale was made by Biçer and Korucu (17) in Turkey. The sub-dimensions of the scale are; tendency to use technology (1-6), satisfaction (7-11), motivation (12-17), usability (18-23) and the total score varies between 23 and 115. The higher score in the scale, the higher attitude towards e-learning. The Cronbach's alpha value of the scale is 0.78 (16,17). In this research, Cronbach's alpha value was found to be 0.69.

Statistical Analysis

The Statistical Package for the Social Sciences (SPSS) 21.0 program was used to evaluate the data of the research. Comparisons were made between independent variables and sociodemographic and e-learning variables, and between dependent variables and the scale coping with stress and attitude scale towards e-learning. Results were at 95% confidence interval and significance level was $p<0.05$. The compliance of the data to normal distribution was evaluated by using Kolmogorov-Smirnov/Shapiro-Wilk tests. Since the variances for post-hoc were homogeneous in the one-way ANOVA test, Tukey test was used. Bonferroni corrected Mann-Whitney U test was used for significant differences between groups in the test of Kruskal-Wallis H-test. Pearson's analysis was used for correlation.

Results

Of the students 90.4% were between the ages of 18-21, 24% were in the first and emergency aid program, 53.2% were first grade students, 82.1% were female, 98.6% were single, 39.8% were residing in the rural-urban, 83.3% of them lived with nuclear family, 89.2% had middle socioeconomic level. According to findings, 96.5% of the students currently did not work in a health institution, 97.6% had an android phone, 61.2% did not have a personal computer, 77.6% used a telephone in education and training, 78.1% had internet access in their place of residence and 72.2% were worrying about COVID-19 pandemic (Table 1).

Self-confident approach sub-dimension score distributions varied significantly according to the socioeconomic levels of the students ($p<0.05$). As a result of Post-hoc binary comparisons made to determine which group caused the difference; it was found that there was a significant difference between groups with low and high socioeconomic levels, and those with high socioeconomic levels had higher self-confident approach sub-dimension score. In the helpless approach sub-dimension, there was a significant difference between low and middle socioeconomic level students ($p<0.05$). Helpless approach sub-dimension scores of students with low socioeconomic status were higher than students with middle socioeconomic status. In the same sub-dimension, there was a significant difference between the students who were worried about the COVID-19 pandemic and the students who were not worried about the COVID-19 pandemic ($p<0.05$). The median score of those who were worried about the pandemic was higher than the students who were not worried (Table 2).

A significant difference was found in the sub-dimension of submissive approach according to family type ($p<0.05$). Submissive approach sub-dimension median score of students living in extended families was higher than students living in nuclear families (Table 2).

A significant difference was found in the optimistic approach sub-dimension according to the school year ($p<0.05$). The median

Table 1. Sociodemographic and e-learning variables of students (n=425)

Sociodemographic variables		n (%)
Age (year)	18-21	384 (90.4)
	22-25	35 (8.2)
	≥26	6 (1.4)
Program	First and emergency aid	102 (24.0)
	Anesthesia	101 (23.8)
	Medical laboratory techniques	87 (20.5)
	Physiotherapy	84 (19.8)
	Elderly care	51 (12.0)
School year	1st year	226 (53.2)
	2nd year	199 (46.8)
Gender	Female	349 (82.1)
	Male	76 (17.9)
Marital status	Single	419 (98.6)
	Married	6 (1.4)
Place of residence	Urban	155 (36.5)
	Rural-urban	169 (39.8)
Family type	Nuclear family	354 (83.3)
	Extended family	71 (16.7)
Socioeconomic level	Low	37 (8.7)
	Middle	379 (89.2)
	High	9 (2.1)
Working status in a health institution	Yes	15 (3.5)
	No	410 (96.5)
E-learning variables		
Having android phone	Yes	415 (97.6)
	No	10 (2.4)
Internet availability in the place of residence	Yes	332 (78.1)
	No	93 (21.9)
Technological device used in education and training	Phone	330 (77.6)
	Personal computer	88 (20.7)
	Tablet etc.	7 (1.6)
Worrying about the COVID-19 pandemic	Yes	307 (72.2)
	No	118(7.8)

COVID-19: Coronavirus disease-19

score of the optimistic approach sub-dimension of the second-year students was higher than the first-year students. There was a significant difference between the socioeconomic level groups of students in the same sub-dimension ($p<0.05$). A significant difference was found between students with low and middle socioeconomic levels, and low and high socioeconomic levels. Students with middle socioeconomic levels had higher optimistic approach scores than students with low socioeconomic level. Students with a high socioeconomic level had a higher optimistic approach score than those with a low socioeconomic level. Again, in the optimistic approach sub-dimension, there was a significant difference between the groups that were worried and that were not worried about the COVID-19 pandemic ($p<0.05$). The optimistic sub-dimension median score of students who were not worried about the pandemic was higher than the students who were worried about the pandemic (Table 2).

There was a statistically significant difference between seeking of social support sub-dimension and students' family type ($p<0.05$). Mean scores of seeking of social support sub-dimension of students living in nuclear families were higher than students living in extended families. There was a significant difference between the socioeconomic level groups of students and the same sub-dimension ($p<0.05$). In post-hoc paired comparisons, it was found that there was a significant difference between students with middle socioeconomic status and those with low socioeconomic level, and the median score of the seeking of social support sub-dimension was higher in students with middle socioeconomic level (Table 2).

There was a significant difference between the total score of the attitude scale towards e-learning and the worry about the pandemic of the students ($p<0.05$). The total median score of the attitude scale towards e-learning of students who were worried about the pandemic was higher than the students who were not worried about the pandemic. There was a significant difference between the groups according to the internet availability in the place of residence in the same sub-dimension ($p<0.05$). The total mean score of towards e-learning scale of students who did not have internet access in their place of residence was higher than students with internet availability (Table 3).

In the research, it was found that a positive significant correlation between the ways of coping with stress and the attitude scale towards e-learning ($r=0.194$, $p<0.01$). As the total score of the scale coping with stress of the students increased, their scores of attitude towards e-learning also increased. When looking at the relationship between the scale coping with stress and the sub-dimensions of attitude scale towards e-learning, a significant positive relationship was found between the scale coping with stress and usability ($r=0.109$, $p<0.05$) and tendency to use technology ($r=0138$, $p<0.01$). As the total score of the scale coping with stres increased, the usability and tendency to use technology for e-learning increased (Table 4).

Discussion

The COVID-19 is a disease that causes anxiety, fear and stress in people due to its rapid transmission through droplets and the lack of effective treatment or vaccine yet. The COVID-19 pandemic process, which affects the health of people in every field, has caused stress in students in academic life (18). Studies conducted during the pandemic period have also determined that students experience problems such as anxiety and worry (19,20). In the current research, a great majority of the students (72.2%), stated that they were worried about the COVID-19 pandemic. In another research conducted with nurse students in Turkey, it was found that students experienced moderate stress

Table 2. Comparison of students' the coping with stress scale sub-dimension scores according to sociodemographic variables

Sociodemographic variables	Self-confident approach	Helpless approach	Submissive approach	Optimistic approach	Seeking of social support approach
	Med (min-max)	Med (min-max)	Med (min-max)	Med (min-max)	Med (min-max)
Age (year)					
18-21	21 (8-28)	19 (8-32)	13 (6-24)	14.5 (5-20)	13 (6-18)
22-25	22 (15-28)	18 (9-29)	13 (6-19)	15 (6-20)	13 (9-18)
≥26	21.5 (19-27)	17(15-20)	13.5 (12-16)	16 (13-16)	13.5 (12-14)
	p=0.696*	p=0.287**	p=0.770*	p=0.470**	p=0.308*
Program					
First and emergency aid	21.5 (8-28)	19 (8-29)	13 (6-17)	14 (6-20)	13 (6-18)
Medical laboratory techniques	21 (11-28)	20 (13-30)	13 (7-22)	14 (5-19)	13 (8-17)
Physiotherapy	21 (13-28)	19 (8-30)	13 (6-20)	15 (5-19)	13 (6-17)
Elderly care	21 (11-28)	19 (11-32)	12 (8-23)	15 (10-20)	13 (9-18)
Anesthesia	21 (15-28)	19 (9-29)	13 (8-24)	15 (6-20)	13 (8-18)
	p=0.061**	p=0.115*	p=0.148**	p=0.325**	p=0.110**
School year					
1st year	21 (8-28)	19 (8-32)	13 (6-24)	14 (5-20)	13 (6-18)
2nd year	21 (14-28)	19 (9-30)	13 (6-24)	15 (5-20)	13 (8-18)
	p=0.374***	p=0.925***	p=0.217***	p=0.007***	p=0.385***
Gender					
Female	21 (8-28)	19 (8-30)	13 (6-24)	15 (6-20)	13 (6-18)
Male	21 (11-28)	19 (10-32)	13 (6-24)	14 (5-20)	13 (8-18)
	p=0.638***	p=0.116***	p=0.265***	p=0.606***	p=0.080***
Marital status					
Married	21.5 (17-28)	17 (9-24)	13.5 (6-15)	15.5 (11-18)	14 (12-17)
Single	21 (8-28)	19 (8-32)	13 (6-24)	15 (5-20)	13 (6-18)
	p=0.723****	p=0.209****	p=0.902****	p=0.490****	p=0.116****
Place of residence					
Urban	21 (8-28)	19 (8-29)	13 (6-24)	15 (5-20)	13 (8-18)
Rural-urban	21 (11-28)	19 (8-32)	13 (7-22)	15 (6-20)	13 (6-18)
Rural	21 (13-28)	19 (11-30)	13 (6-22)	14 (5-19)	13 (6-18)
	p=0.407**	p=0.910*	p=0.082**	p=0.302**	p=0.659**
Family type					
Nuclear family	21 (8-28)	19 (8-32)	13 (6-24)	15 (5-20)	13 (6-18)
Extended family	21 (14-27)	20 (9-30)	14 (8-20)	14 (6-18)	13 (8-15)
	p=0.077***	p=0.382****	p=0.044***	p=0.076***	p=0.009***
Socioeconomic level					
Low[a]	20 (13-28)	22 (8-29)	13 (6-19)	13 (5-20)	12 (6-17)
Middle[b]	21 (8-28)	19 (8-32)	13 (6-24)	15 (6-20)	13 (8-18)
High[c]	24 (20-28)	17 (11-28)	12 (8-20)	16 (13-20)	13 (12-15)
	p=0.002* p^{a-b}=0.126 p^{a-c}=0.002 p^{b-c}=0.018	p=0.027* p^{a-b}=0.012 p^{a-c}=0.145 p^{b-c}=0.348	p=0.870*	p=0.000* p^{a-b}=0.003 p^{a-c}=0.000 p^{b-c}=0.019	p=0.008* p^{a-b}=0.008 p^{a-c}=0.155 p^{b-c}=1.000

Table 2. Continued

Sociodemographic variables	Self-confident approach	Helpless approach	Submissive approach	Optimistic approach	Seeking of social support approach
	Med (min-max)	Med (min-max)	Med (min-max)	Med (min-max)	Med (min-max)
Working status in a health institution					
Yes	21 (16-26)	17 (8-24)	14 (10-18)	14 (7-15)	14 (9-17)
No	21 (8-28)	19 (8-32)	13 (6-24)	15 (5-20)	13 (6-18)
	p=0.985****	p=0.103****	p=0.348****	p=0.091***	p=0.373****
Worrying about the COVID-19 pandemic					
Yes	21 (8-28)	20 (8-30)	13 (7-24)	14 (5-20)	13 (6-18)
No	22 (13-28)	18 (8-32)	13 (6-24)	15 (5-20)	13 (9-17)
	p=0.000***	p=0.000***	p=0.434***	p=0.000***	p=0.424****

*Kruskal-Wallis H test, **One-way ANOVA, ***Independent t- test, ****Mann-Whitney U test, min: Minimum, max: Maximum, Med: Median, COVID-19: Coronavirus disease-19, a-c: There is no difference between similar groups

during the COVID-19 pandemic process (18). Similarly, it was found that students experienced high levels of stress in the severe acute respiratory syndrome epidemic experienced in the past years (21). In another research conducted with undergraduate students at the Lebanese University, the change in the education and training process in the COVID-19 pandemic caused anxiety, depression and stress in students (22). On the other hand, the stress experienced by students during the pandemic process also affected their academic self-efficacy (23).

When the research findings were examined, it was seen that students with a high socioeconomic level and who were not worried about the pandemic used self-confident approach in coping with stress. This research was conducted between May 28 and June 28 2020 when the number of patients with COVID-19 was very high and in the period in which the whole education system in Turkey was transformed into distance education rapidly. In this process, students studying in the field of health, who had a large number of face-to-face applied undergraduate courses, faced both the risk of disease and the change in the form of education. Therefore, high socioeconomic level facilitates easy access to technological devices and internet in the e-learning education process and the sustainability of education. It was also determined that students who were not worried about the COVID-19 pandemic used self-confident approach as their way of coping with stress. Researches show that people who use negative coping with stress styles focus on the emotions triggered by stress, and those who use positive coping with stress styles create structural support for themselves (24,25). In this context, the fact that students who are not worried about the pandemic adopt self-confident approach style is supported by the literature.

In the research, it was determined that students with a high socioeconomic level used self-confident approach to cope with stress, while students with a low socioeconomic level used the helpless approach. Researches conducted during the pandemic process showed that income during the pandemic process played a key role in accessing educational opportunities for students, and students with low income experienced more stress (26,27). This study determined that income level affected the approaches adopted by students, and showed that students with low income used the helpless approach while students with high income used self-confident approach. Another finding that supported this result was that students with a high socioeconomic level adopted optimistic approach as a way of coping with stress. The high socioeconomic level indicates the ease of access to computers and internet for students in the distance education process. Its is thought that students experience less stress or better manage stress during the pandemic period thanks to ease of access to computers and internet, which are the most important components of distance education. Students with medium socioeconomic level adopted the style of seeking social support more than students with low socioeconomic level. In the research of the Savcı and Aysan (28), it was emphasized that students with middle socioeconomic level used avoidance in coping with stress. Students with low socioeconomic level used ineffective coping methods to cope with stress. These results of our research are consistent with each other.

While the students living in the extended family adopted the submissive approach as a way of coping with stress during the pandemic period, the students living in the nuclear family adopted the style of seeking social support. In the Turkish family structure, especially in extended families, importance is given to the submission of children to their elders. If children conflict with family values, families take all necessary measures to ensure that their children behave submissively (29). For this reason, it is an expected result that our students living in extended families use a submissive approach to cope with stress. In addition, the concept of family is one of the most important sources of social support in reducing or completely eliminating stress. Therefore, it is thought that students living in nuclear families adopt the approach of seeking social support.

On the other hand, it was determined that 2nd grade students and the students not worrying about the pandemic used optimistic approach in their way of coping with stress. In a research conducted with nurse students, older age was associated with better knowledge and clinical experience. For this reason, it was emphasized that nurse students used coping styles with stress more effectively (30). In another research conducted with medical students, it was found that first-year students adopted

the helpless approach to coping with stress more (31). It was thought that our second-year students used optimistic approach to cope with stress because of the fact that they received longer period education during the face-to-face education process compared to the first-year students, they could reach lecturers more easily when necessary and they were more accustomed to the education system.

Table 3. Comparison of students' sociodemographic and e-learning variables with attitude scale towards e-learning

Sociodemographic variables	Med (min-max)	P
Age (year)		
18-21	56 (34-92)	0.865*
22-25	56 (40-75)	
≥26	56 (52-65)	
Program		
First and emergency aid	55 (40-69)	0.142*
Medical laboratory techniques	57 (34-75)	
Physiotherapy	56 (42-66)	
Elderly care	57 (43-75)	
Anesthesia	56 (43-92)	
School year		
1st year	56 (40-75)	0.804**
2nd year	56 (34-92)	
Gender		
Female	56 (34-92)	0.509**
Male	56 (40-75)	
Marital status		
Single	56 (49-73)	0.753**
Married	56 (34-97)	
Place of residence		
Urban	55 (34-75)	0.685*
Rural-urban	56 (40-92)	
Rural	56 (41-75)	
Family type		
Nuclear family	56(34-92)	0.456**
Extended family	56(42-75)	
Socioeconomic level		
Low	57(34-67)	0.787*
Middle	56(40-92)	
High	55(52-74)	
Working status in a health institution		
Yes	54(40-73)	0.375**
No	56(34-92)	
Worrying about the COVID-19 pandemic		
Yes	56 (34-92)	0.050**
No	55 (40-74)	
Internet availability in the place of residence		
Yes	55 (40-92)	0.011**
No	57 (34-75)	

*Kruskal-Wallis H test, **Mann-Whitney U test, min: Minimum, max: Maximum, Med: Median, COVID-19: Coronavirus disease-19

The average score of the students who were worried about the pandemic on the attitude scale towards e-learning was high. The pandemic caused the transition from formal education to distance education all over the world (32), interestingly, it was observed that students quickly adapted to this change during the pandemic period (33). Similar toour results, there are other studies in which students' attitudes towards e-learning in distance education are positive (34,35). There are also researches revealing that, contrary to our research results, students have a negative view on the distance education process. In a research conducted by Coşkun et al. (36) with students studying in the field of health in Turkey before the pandemic, it was emphasized that 86.2% of the students did not want to use the e-learning system. In another research conducted with medical and nursing students in Uganda, it was found that students' awareness of e-learning was high, but their attitudes were negative (37). However, this pandemic process has increased professional awareness, especially among students studying in the field of health. It was observed that desire of students for vocational education increased and students adapted to this period quickly for providing healthcare and helping people as soon as possible.

In current research students who did not have internet access at their place of residence had higher desire for e-learning. In the research conducted by Duraku and Hoxha (38), which supported our research results, it was observed that the stress experienced by the students during the pandemic process positively affected their learning. In addition, it was determined that students' attention distracted from the pandemic process with participation in e-learning. It is thought that this situation may be due to the motivation of the students by the educators, the fact that the pandemic process is closely related to the healthcare professionals and therefore the professional awareness of the students has increased.

As the total score of the scale coping with stress of students during the pandemic period, the mean score of the attitude scale towards e-learning also increased. In the studies conducted during the COVID-19 pandemic process, it was determined that students were afraid of losing their social lives and part-time jobs as well as their academic career dreams and they felt financial and

Table 4. Relationship between the scale coping with stress and attitude scale towards e-learning

	The coping with stress scale	
	r	p
Attitude scale towards e-learning	0.194*	0.000
Satisfaction	0.008	0.867
Motivation	0.068	0.160
Usability	0.109**	0.002
Tendency to use technology	0.138*	0.004

*Correlation is significant at 0.01 level, **Correlation is significant at 0.05 level

economic anxiety and were worried about the risk of infection (39,40). Also another research showed that the experienced academic stress directed students to creative activities and e-learning types, thus they could manage the pandemic process more effectively by getting away from depressive thoughts (41). Due to the threat of human health, during the pandemic process, professional sensitivity and dynamics have increased even more, especially among students who receive health services education. Ways of coping with stress regulate negative emotions, offer alternative solutions to individuals and add positive functions. In the current research, it was determined that the e-learning requests of the students increased, and this situation was thought to be due to the increase of awareness in students because the pandemic process greatly affected the health field.

A positive significant relationship was found between usability and tendency to use technology, which were sub-dimensions of the scale of attitude towards e-learning, and the scale coping with stress. It is evident that in recent years, young people use web-based applications in all areas of life (42). In addition, it has been reported that stress, which is effective in students during the pandemic period, has positive reflections on learning (38). Further, e-learning in health education is among the current issues in recent years (13,43,44). In a research, it was determined that 50.5% of the students were willing to continue the lessons with distance education during the pandemic process (45). In another research conducted with students studying in the field of health, it was found that students wanted to continue formal education in the post-pandemic period. In the same research, it was stated that applied undergraduate courses were inefficient with e-learning (46). Although different studies conducted with students before and during the pandemic process showed that there was variability in attitudes towards e-learning, this research showed that the coping with stress scale during the pandemic process increased the use of technology in students and e-learning was a useful method in this process (40,45,46).

Study Limitations

The most important limitation of the research was the fact that the research was conducted with only the students studying at the health services vocational school. For this reason, the results of the research could not be generalized to students studying in different departments. Another limitation of the research was that the research was conducted electronically due to the pandemic and that students with limitations on mobile phones, computers and internet could not be reached.

Conclusion

Since the day it was defined, the COVID-19 pandemic became a major public health problem for the whole world. Millions of people are still trying to keep themselves safe by applying full or partial quarantine. For this reason, thousands of educational institutions have replaced from formal education to distance education, which is an alternative solution, in order to continue education during the pandemic period. In the current research, it was found that students experienced worry during the pandemic process and their way of coping with stress positively affected their attitudes towards e-learning. One of the aims of coping with stress is to increase the success of students in education. This research is the basis for showing the positive effects of effective stress coping ways on education.

Note: On March 16, 2020 in the Republic of Turkey education was suspended temporarily due to the COVID-19 pandemic and it began again with distance education on March 23, 2020. Data were collected till the first wave of the lockdown, that was, 28 June 2020.

Ethics

Ethics Committee Approval: Ethics committee approval was obtained from the Non-Invasive Clinical Research Ethics Committee of the institution where the research was conducted with the decision numbered 40465587-102.01-105.

Informed Consent: In the introduction part of this form, a voluntary consent was received from the students.

Peer-review: Externally peer reviewed.

Authorship Contributions

Concept: Y.A., H.P., B.Ç., Design: Y.A., H.P., B.Ç., Data Collection or Processing: Y.A., H.P., B.Ç., Analysis or Interpretation: Y.A., H.P., B.Ç., Literature Search: Y.A., H.P., B.Ç., Writing: Y.A., H.P., B.Ç.

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