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COVID-19 Risk Perceptions, Concerns and Factors Affecting College Students

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ABSTRACT

In this study, we aimed to increase the knowledge, awareness, and normalization adaptation of university students about the disease with the pieces of training given by academicians about COVID-19 and thus contribute to the control of the epidemic. We also aimed at writing education on disease risk perceptions and anxiety levels related to COVID-19 disease. In the study, two weeks of online education were planned for university students on COVID19 disease. A questionnaire was prepared to give knowledge about the anxiety and risk perceptions of the students about COVID-19 disease. Questionnaire training and finally administered. It was analyzed with the SPSS 22.0 program. Whereas the number of students who answered the pre-education questionnaire was 116, 56 students completed the questionnaire at the end of the training. There was no intelligent difference in the risk perceptions of the students about getting sick and losing their lives from illness before and after education. There is no significant difference in the results of the Wilcoxon signed sum of ranks test for the GAD7 scale scores that made the post-test (p = 0.905, z = -0.11). Except for 9 students who did both tests, 107 pre-tests and 47 post-tests did not differ significantly between the groups in terms of disease risk and GAB7 grading (p> 0.05). As a result, the motivation of university students to participate in the struggle against the pandemic is weak. Ensuring that health-related university students, as well as students from different faculties, participate in the fight against COVID-19 with educational studies will be important in controlling the epidemic.

Keywords: College students, COVID 19, pandemics, public health, risk perception.

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I. Introduction

COVID 19 disease is an infectious disease caused by the new SARS CoV 2 virus, which started with the first suspicious cases in China (Hubei-Wuhan) in mid-November 2019 and was identified as a result of research conducted in a group of patients who developed respiratory symptoms such as fever, cough, and shortness of breath at the end of December [1]. With the infection that started in China spreading rapidly to other countries all over the world, the World Health Organization (WHO) declared the coronavirus pandemic on March 11, 2020 [2]. To prevent the spread, countries have taken a series of measures such as travel restriction, social distance, working from home, gymnasiums, cinemas, theaters, and schools that make life difficult.

Although there are very few cases in children and young people, schools and universities were closed in 150 countries on March 25 to prevent contamination. Conferences, workshops, and other activities to be held by universities were canceled. In universities in Turkey as in other countries, schools were closed and switch to online training. Most of the young people returned to their families. International students could not return home for a while due to travel restrictions. Universities have adapted to online education systems using their technological facilities. However, due to the difficulties of accessing computers and the internet, there were problems in participating in the training. Curfews were declared at a certain time [3]. Along with the pandemic, many programs related to COVID 19 were featured in the press and social media.

Whereas the virus, which has affected the whole world for months, caused lifestyle changes in social terms, also its effects on psychological, economic, and vital areas were observed. The growing concern of infectious diseases in society increased some psychological disorders such as anxiety and depression [4], [5]. In addition to the negativity caused by the disease itself and the uncertainty brought about by the process, it affected the emotional states of the people negatively. The effects of protective measures such as quarantine taken in the community to protect against the disease on psychology have also emerged [6]-[10].

Compliance with the measures taken against Covid19 is related to the people perceive this situation as a risk. Risk perception is a psychological term that refers to an individual's perception and understanding of various objective dangers in the external world and their

consequences. Whereas those who see the risk of disease at high risk and takes strict measures, it is difficult to ensure that those who do not care about the risk comply with the preventive measures [11]. As of June 1, the normalization process started in our country. Steps were taken to gradually normalize the protective measures taken against the transmission and spread of the disease. The lifting of the curfews, the opening of hairdressers, and shopping centers followed. In the last stage, many areas of life such as restaurants, marketplaces, nurseries, and schools took their place in the normalization calendar.

In this study, we aimed to increase the knowledge and awareness of university students about the COVID-19 disease with the training provided by academicians. Thus, contribute to the control of the epidemic. In this process, we aimed to evaluate the disease risk perception and anxiety levels of the students related to COVID-19 disease.

II. Materials and Methods

A. Study Population

This study is a social responsibility project jointly undertaken by a private university and a health-sector endowment. The target audience for this study was university students. The study was planned as a training program for university students to adapt to the new order for the normalization process of the COVID-19 outbreak. No specific group was selected for this study. Educational announcements were made to 2000 students studying at different faculties via e-mail, text messages, university websites, and social media. Participation in the study was voluntary.

The training was given over the internet for two weeks. In the pieces of training involving educators and subjects from different disciplines; COVID-19 and infectious diseases epidemiology, the development process of the disease, transmission, ways to cope with the disease, the psychological process in coping with the disease, spiritual immunity, epidemic trauma, behavioral patterns in epidemics, positive psychology in pandemia, psychiatric diseases in pandemics, coping with stress on Corona days, After the pandemic, emotion regulation, preventing procrastination, coping with perfectionism, and improving self-confidence were covered. Each training ended with an interactive discussion section consisting of questions and answers.

A questionnaire was prepared to evaluate the situation of students making a difference in their perceptions of COVID-19 disease and anxiety and risk. The questionnaire was piloted in a group of students and the structured final version was given. Before the training, the students were informed about the survey. The announcement for this training was shared on all social media accounts of participating universities and endowments. Students were informed about the nature of the survey and received the links to the survey right before the commencement of the training. Accordingly, training participants received ten minutes to fill the survey before the actual training. Finally, students received reminders about the survey at the end of the survey, and the survey link was shared again.

The survey was filled in by 116 students (Group 1) who agreed to fill in the e-survey after the information was given before the training started. The survey was filled out by 56 students (Group 2) after all the training was completed.

B. Evaluation Method

The questionnaire consists of three parts: the first part with socio-demographic characteristics, the second part, which includes questions to evaluate risk perceptions and behaviors, and the third part where questions of the scale are measured. In the first part of the questionnaire structured in the study; The information applied regarding the age, gender, class, faculty of education, place of residence, regular monthly income, family socioeconomic status, presence of chronic disease, epidemic were included. In the second part, diagnosis of COVID-19 during the epidemic process, hospitalization, family members or relatives diagnosed and hospitalization, suspicions about being infected with COVID-19 even if they are not diagnosed, and what did they do to protect themselves from the disease in the last weeks were asked. Besides, they were asked about the possibility of getting COVID-19 and dying from COVID-19 in the next three months and, tit has required them to evaluate their risk as "very high, high, medium, low, very low, none". In the last part, students answered the Generalized Anxiety Disorder Scale (GAD-7), which consists of 7 items. With GAD-7, which is structured according to seven basic symptoms, the frequency of the participants suffering from these symptoms in the last two weeks is investigated [12].

Participants respond to their symptoms using a 4-item Likert rating scale ranging from 0 (not at all) to 3 (almost every day). Scale total score ranges from 0 to 21. The adaptation, validation, and reliability of the scale to Turkish were carried out by Konkan and friends in 2013 [13]. Whereas the cut-off score of the scale was 10 in the original, it was determined as 8 in the Turkish adaptation. Cronbach's alpha value for the GAD-7 total score was 0.852.

C. Data Analysis

The data were analyzed with SPSS (Statistical Package for the Social Sciences) version 22.0. Descriptive statistics were made for the sociodemographic characteristics, risk perception, and the distribution of information sources (frequency, percentage) they applied for and applied for protection. The difference between the measurement results of the two dependent groups was analyzed using the Wilcoxon Signed Rank Test. Univariate nonparametric tests were applied for each group to investigate the relationship between some sociodemographic characteristics, COVID-19 diagnosis and hospitalization, and anxiety level. For statistical significance, $p < 0.05$ was accepted.

D. Ethics

The study approval was obtained from the ethics committee of Istanbul Medeniyet University School of Medicine. All participants were informed about the purpose of the research before the training started and the volunteers filled out an e-questionnaire.

III. Results

In the study, students were asked to fill out the questionnaire both before and after the planned training. Whereas the number of students who answered the pre-education questionnaire was 116, 56 students were surveyed at the end of the training. Students from 31 different universities and 11 different faculties participated in the training. 28.5% (n = 49) Medeniyet University, 15.7% (n = 27) Istanbul University, 11.6% (n = 20) Marmara University are the universities with the highest participation. The distribution of students according to their faculties is given in Table I.

To analyze the students who took the pre and post-tests, they were asked to include their email addresses or a code that could identify them in both the pre and post-test. At the end of the two-week training, only 9 students participated in both preliminary and final evaluation. 77.8% of these students are women and 77.8% do not have a regular monthly income. 88.9% of the students (n = 8) were in fourth grade, another student was in fifth grade and 88.8% were studying at health-related faculties (medicine, pharmacy, health sciences) and one student was studying at the faculty of science and literature. None of the students had a chronic illness. Some socio-demographic variables belonging to students are in Table II.

None of the students were diagnosed with COVID-19 disease and were not hospitalized during this period. At the same time, no family members were diagnosed with COVID-19 and hospitalized. Although 66.7% of the students were not diagnosed, they were not sure about the possibility of infection. The probabilities of having COVID-19 and dying from this disease for the next three months are shown in Table II. There is no statistically significant difference in the risk perceptions of the students about being sick and dying from illness before and after education. (p> 0.05)

The YAB7 scale score averages of nine students who took the pre-test and the post-test after training are shown in Table III. The mean scores of the students in the pretest are 6.78 ± 4.81 (Min. 1; Max: 15) and their post-test mean after education is 6.55 ± 5.45 (Min. 0; Max: 17).

TABLE I: Distribution of Students according to Their Faculties

Faculties	n	%
Medical School	87	50.6
School of Dentistry	3	1.7
Faculty of Health Sciences	33	19.2
Faculty of Education	6	3.5
Faculty of Science and Literature	10	5.8
School of Pharmacy	14	8.1
Departmemt of Humanitites and Social Sciences	3	1.7
Engineering	3	1.7
Economics	5	2.9
Religious Studies	7	4.1
Faculty of Arthitecture	1	0.6
Total	172	1000

To determine whether there is a difference between the pre-test and post-test scores of the students (since their scores are not distributed normally), the Wilcoxon signed ranks test was conducted and the results are given in Table III. According to the Wilcoxon signed sum of ranks test results, there is no statistically significant difference between the pre-test and post-test GAB7 scale scores of the students (p = 0.905, z =-0.119).

TABLE II: Some Sociodemographic Variables of the Students Who Took the Pre-Post Test (N = 9)

Variances		Pre-Testers	Post-testers
		n	%
Gender	Female	7	77.8
	Male	2	22.2
Monthly income	Yes	3	33.3
	No	6	66.7
Socioeconomic status of the family	Average	8	88.9
	High	1	11.1
Accommodation	With family	4	44.4

TABLE III: Distribution of Students Probability of Becoming Covid-19 and to Die From COVID-19 In the Next Three Months and Wilcoxon Signed-Rank Test Results of the Difference between Students' YAB7 Pre-Test and Post-Test Scores

		Pre-test		Post-test	
		n	%	n	%
Possibility of being infected with COVID-19 even if not diagnosed	Yes	1	11.1	2	22.2
	Not sure	6	66.7	5	55.6
	No	2	22.2	2	22.2
Possibility of being infected with COVID-19 in the next three months	Low	2	22.2	2	22.2
	Average	6	66.7	5	55.6
	High	1	11.1	2	22.2
Possibility of dying from COVID-19 within the next three months	Low	5	55.6	8	88.9
	Average	4	44.4	1	11.1
	High	1	11.1	2	22.2
YAB7 pre-post test score	N	Mean Rank	Sum of Rank	Z	P
Negative	6	4.42	26.50		
Positive	3	6.17	18.50	-0.48	0.62
Equal	0				

A. Analysis of İndependent Groups Performing Pre-test and Post-test

In the study, 116 students apply the pre-test before education. These students and the remaining 107 pre-test and 47 post-test students were analyzed after excluding nine students who took the pre-test and the post-test from 56 students who applied the post-test after the training. The average age of the students in the first group (taking the e test) is 22.44±2.78 (Min.19, Max.38) and the average age of the students in the second group (who takes the post-test) is 22.57±2.08 (Min. 19, Max. 28). Some sociodemographic characteristics of the students are shown in Table IV.

There are three questions in the questionnaire about risk perceptions of Group 1 and Group 2 students with COVID-19 disease. Although they were not diagnosed with the disease, their thoughts about the possibility of being infected were asked. 48.6% of students in group 1 said 46.8% of students in group 2 were not infected. There is no significant difference between the groups in terms of disease risk perceptions (p> 0.05) The distribution of the answers given by the students to the questions about their risk perceptions is in Table IV.

Students were asked what they did to protect from COVID-19 in addition to what they normally do in the last 7 days. To

this question, where they could mark more than one option, 85.0% in the first group and 82.9% in the second group were determined to avoid the public space and meetings and crowd. The website of the Ministry of Health, on the other hand, was 76.6% in the 1st group and 78.7% in the 2nd group. The distribution of the student's application as a source of information is in Table V.

TABLE IV: DISTRIBUTION OF THE GROUPS ACCORDING TO SOME SOCIODEMOGRAPHIC CHARACTERISTICS AND COVID-19 DISEASE RISK PERCEPTION DISTRIBUTION BY GROUPS

		1. Group		2. Group		Total	
		n	%	n	%	n	%
Sociodemographic Features							
Gender	Female	96	89.7	38	80.9	134	87.0
	Male	11	10.3	9	19.1	20	13.0
Monthly Income	Yes	55	51.4	26	55.3	81	52.6
	No	52	48.6	21	44.7	73	47.4
Socioeconomic status of the family	Low	14	13.1	2	4.3	16	10.4
	Average	86	80.4	40	85.1	126	81.8
	High	7	6.5	5	10.6	12	7.8
Presence of chronic disease	Yes	10	9.3	5	10.6	15	9.7
	No	97	90.7	42	89.4	139	90.3
COVID-19 diagnosis	Yes	0	0	1	2.1	1	0.6
	No	107	100	46	97.9	153	99.4
COVID-19 diagnosis in family	Yes	4	3.7	2	4.3	6	3.9
	No	103	96.3	45	95.7	148	96.1
Risk Perception							
Possibility of being infected with COVID-19 even if not diagnosed	Yes	6	5.6	7	14.9	13	8.4
	Not sure	49	45.8	18	38.3	67	43.5
	No	52	48.6	22	46.8	74	48.1
Possibility of being infected with COVID-19 in the next three months	Low	46	43.0	19	40.4	65	42.2
	Average	37	34.6	19	40.4	56	36.4
	High	24	22.4	9	19.1	33	21.4
Possibility of dying from COVID-19 within the next three months	Low	78	72.9	37	78.7	115	74.7
	Average	29	27.1	6	12.8	35	22.7
	High	0	0	4	8.5	4	2.6

*1st group: pre-educaiion. 2nd group post-education students.

TABLE II: DISTRIBUTION OF ANXIETY STATES BY SOME SOCIODEMOGRAPHIC CHARACTERISTICS OF THE GROUPS

		1. Group				2. Group			
		YAB7<8		YAB7>8		YAB7<8		YAB7>8	
		n	%	n	%	n	%	n	%
Gender	Female	74	88.1	22	95.7	27	77.1	11	28.9
	Male	10	11.9	1	4.3	8	22.9	1	11.1
		84	78.5	23	21.5	35	74.5	12	25.5
Monthly Income	Yes	46	54.8	9	39.1	17	48.6	9	75.0
	No	38	45.2	14	60.9	18	51.4	3	25.0
Socio-economic status of the family	Low	10	11.9	4	17.4	1	2.9	1	8.3
	Average	68	81.0	18	78.3	30	85.7	10	83.3
	High	6	7.1	1	4.3	4	11.4	1	8.3
Presence of chronic disease	Yes	7	8.3	3	13.0	3	8.6	2	16.7
	No	7	91.7	20	87.0	32	91.4	10	83.3

TABLE V: DISTRIBUTION OF THE THINGS DONE TO PREVENT THE DISEASE AND THE SOURCES CONSULTED FOR INFORMATION BY GROUP

	1.Group pre-education		2.Grup Post-education	
	n	%	n	%
Washing hands with soap /using hand sanitizer	81	75.7	38	80.8
Avoiding public space/meetings / crowds	91	85.0	39	82.9
Avoiding contact with high risk people	87	81.3	34	72.3
Canceling / Postponing Airplane Travel	57	53.2	26	55.3
T.C. Ministry of Health website	82	76.6	37	78.7
Social media (Facebook, Twitter, Instagram)	73	68.2	31	65.9
TV, Radio Newspaper	69	64.4	26	55.3
WHO and CDC websites	49	45.7	29	61.7
Scientific articles	45	42.0	24	51.0

The mean GAB7 scale score was found to be 6.28 ± 4.2 for the students in the first group and 6.0 ± 4.5 for the students in the second group. Those with a cut-off point greater than 8 in the GAD7 scale score can be considered risky in terms of anxiety. The distribution of the GAB7 scale according to some sociodemographic characteristics of the groups is given in Table VI. There is no statistically significant difference between the groups (p> 0.05).

IV. DISCUSSION

We aimed to make university students contribute to Turkey's normalization process during the COVID-19 pandemic by the training program we presented in this article. During this pandemic, there are studies on the anxiety and mental states of university students, especially students in medical schools in our country and around the world. However, there is no study found for evaluating their contribution to education about COVID-19 as in our study.

In our study, announcements were held by different departments of three universities. 50% of the participating

students were mainly health-related students, with the Faculty of Medicine being 20% of the Faculty of Health Sciences. The participation of students from other faculties was lesser than others.

The number of students who filled both before and after the education questionnaire measuring the knowledge level of students about COVID-19 remained at 9. There was no significant difference in the pre and post-test of these 9 students.

We determined that most of the students who completed the test at the beginning of the training were female students, and they received information about the disease from social and visual media, especially the Ministry of Health website. Anxiety was found in 11.9% of female students. It was determined that the majority of the students who filled out after the training were female students, and they used the foreign resources that they used the Ministry of Health website to get information more than the first group. The anxiety of the group who filled the questionnaire after listening to the training was found to be 28.9%. In a study conducted by [14] among medical faculty students in China, the rates of mild anxiety in 21%, moderate in 27%, and severe anxiety in 0.9% were found to be close to our students. It is stated that students' receiving social support and living with their families reduces anxiety.

It seems that getting accurate information about the disease does not reduce anxiety. We observed that most of the students participating in the training consisted of students studying at health related faculties. This shows that students studying in non-health fields have little interest in the subject despite the epidemic in society. Mostly, there are studies on the mental health of medical students, their educational processes, and their access to technology [3], [14]-[16]. In the survey conducted by [15] the students' awareness of COVID-19 was found to be high (69.4%). In our study, awareness of COVID 19 measures was found to be 74% on average.

As age increases, COVID-19 awareness increases and reduces anxiety and depression rates by affecting health-related behavior patterns.

In a study conducted with medical school students in Iran, it was found that 79.6% of the students had a high level of knowledge about COVID-19, and although the risk perception of female students was lower than men, their awareness was higher [17]. However, no difference was found between male and female students in terms of risk perception in our study. 79.6% in this study, we found that 79.6% of medical students who participated in this survey had a high level of related knowledge which was higher than previous studies conducted on health care workers.

The fact that there was no difference between the two groups of students who completed the questionnaires before and after the education shows that young people benefit from the same sources of information. The fact that the probability of being COVID-19 and dying in the next three months is higher than the first group may indicate that the disease is taken seriously after the education.

The study conducted by [11] shows that college students approximately one-third of the students had limited knowledge about COVID-19 disease, which led to low-risk perception. In our study, we observed that the anxiety of the group received after having more information about the disease.

Although announcements were made to 2000 students studying at different faculties via e-mail, messages, and websites, participation in the training was low with 154 students. The low level of participation can be explained by the fact that it is at the beginning of the normalization process and the conclusion that the epidemic has passed, because of the fatigue caused by the constant presence of Covid 19 during March and May. The low interest in the training by the youth can be considered as one of the reasons why the increase of cases continues in our country during the summer months.

As a result, the motivation of university students to participate in the struggle against the pandemic is weak. We emphasize that working with health-related university students, as well as students from other departments, to ensure that they participate in the COVID-19 struggle with education is important in controlling the epidemic.

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