JBACHS
Journal of Basic and Clinical Health Sciences

J Basic Clin Health Sci 2022; 6: 550-559
https://doi.org/10.30621/jbachs.1066123
RESEARCH ARTICLE

THE RELATIONSHIP BETWEEN COVID-19 AWARENESS AND VACCINE HESITANCY AMONG UNIVERSITY STUDENTS

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Received: 01.02.2022; **Accepted:** 08.03.2022; **Available Online Date:** 30.05.2022

Cite this article as: Eren H. The Relationship Between COVID-19 Awareness and Vaccine Hesitancy among University Students. J Basic Clin Health Sci 2022; 6: 550-559.

ABSTRACT

Purpose: The following research was conducted in an effort to determine the factors affecting the COVID-19 awareness and vaccine hesitancy among university students.

Material and Methods: Data was collected from 700 university students between October 2021 and January 2022 through the snowball sampling method for the purposed of this cross-sectional study. A questionnaire form, COVID-19 Awareness Scale and Vaccine Hesitancy Scale in Pandemics were all utilized for the collection of necessary data. The dependent variables of the study were the COVID-19 awareness and vaccine hesitancy. The independent variables of the study were sex, department, education level, socioeconomic level, and COVID-19-related questions. It is used number, mean, percentile distributions, standard deviation, One-Way ANOVA, independent t-test, and the Pearson correlation analysis to evaluate the data.

Results: The participants achieved 89.2±16.2 points on the COVID-19 awareness scale and 23.3±9.6 points on the Vaccine Hesitancy Scale in Pandemics. The scales mean scores differed according to sex, department, education, and socieconomic level, having COVID-19 vaccine ($p<0.05$). A moderately negative correlational relationship was found between the total mean score of the COVID-19 Awareness Scale and the Vaccine Hesitancy Scale in Pandemics total score ($r=-0.496$, $p<0.001$).

Conclusion: University students' COVID-19 awareness was very high, and vaccine hesitancy was below the average. The results of this study determined that as student awareness of COVID-19 increases, hesitations about vaccination decrease. Therefore, it is necessary to organize educational activities that contain reliable information about COVID-19 for students.

Keywords: Awareness of COVID-19, vaccine in pandemic, university student

INTRODUCTION

After the SARS-CoV-2 infection (COVID-19) spread around the world, the World Health Organization (WHO) declared a pandemic on March 11, 2020. After the first case was seen in Turkey, the Ministry of Health published safety procedures and issued a call for the observance of such measures with masking, distance and hygiene rules in order to protect against and reduce the spread of the virus, which spreads rapidly through transmission from person to person (1,2). Studies show that public awareness is important in preventing the spread of infectious diseases (3, 4). In this regard, the WHO emphasizes the importance of breaking the chain of infection

during the course of the pandemic, preventing the spread of COVID-19 and maintaining healthy lifestyle behaviors (1). However, we have seen that these measures alone are not sufficient (5). The development of vaccines thought to reduce severe disease and death and the initiation of vaccination programs are among the most important developments throughout the pandemic (6).

It has been stated that vaccination is a public safety event that contributes to global health, playing a major protective role in the history of the world. By providing immunity through vaccination, individuals can be protected against the disease as well as social immunity can be reached. As the number of vaccinated individuals in society increases, the probability of contact with the disease agent, unvaccinated individuals, and the incidence of the disease in society decrease (7). However, recently, anti-vaccine or vaccine hesitancy movements have arisen in many countries (8, 9). The World Health Organization has cited vaccine hesitancy a top 10 global health threats stating that hesitations about vaccination emerge from a lack of knowledge and confidence, the perception of disease, a lack of access to vaccines, concerns about the efficacy and safety of vaccines, and religious beliefs (10, 11).

It has become extremely important to determine the factors affecting the awareness of individuals and vaccine hesitations during the pandemic process. The vaccination status of university students, especially important during in-person education, is among the issues that need to be addressed because university students constitute a large part of the country's population and typically live together within the scope of education and training activities. In addition, many students' study at a university in a different city different than they live in and mobility is an important element for the spread of the virus. Therefore, students are expected to have sufficient knowledge about COVID-19 transmission measures. In this context, this research aims to determine the factors affecting the COVID-19 awareness and vaccine hesitancy among university students. It is important that this research is conducted in a period when the country is transitioning from online education to in-person education for the first time, so that the research findings can provide recommendations for policies to be carried out regarding the pandemic.

MATERIALS AND METHODS

Design

The study is cross-sectional.

Participants

The study group of this study consisted of 700 undergrade students at universities, determined snowball sampling method. In the 2020-2021 academic year, 7.541,890 students were enrolled in all programs (12).The sample size was calculated by using the G Power 3.1.9.2 program. Based on the significance level (α=.05), test power (1-β=.95), effect size (0.35), the minimum number of sample required for this study was 700. The inclusion criteria for students included willingness to volunteer to the study.

Variables

The dependent variables of the study were the COVID-19 awareness and vaccine hesitancy. The independent variables of the study were sex, department, class level, socioeconomic level, and COVID-19-related questions.

Data Collection Tools

The questionnaire form was created after a review of available literature. The data for the study were collected with this specifications form, the COVID-19 Awareness Scale (CAS) and the Vaccine Hesitancy Scale in Pandemics (13,14,15,16).

Questionnaire form

This form requests information such as student gender, department and grade, socioeconomic level, COVID-19 diagnosis, and status of vaccination against COVID-19.

COVID-19 Awareness Scale

This is a scale developed by Büyükbeşe and Dikbaş (2021) to measure university students' awareness of mask, distance, and hygiene rules during the COVID-19 outbreak. The scale is a 5-point Likert type consisting of 3 sub-dimensions: hygiene (12 items), distance (6 items) and mask (3 items). Answers given were scored as strongly disagree (1), partially disagree (2), undecided (3), partially agree (4) and strongly agree (5). Interpreting the scores, 21-37.8 was considered as very low awareness, 37.81-54.81 low awareness, 54.82-71.4 moderate awareness,

Table 1. Descriptive characteristics of the students (N=700)

Variables	n	%
Sex		
Female	491	70.1
Male	209	29.9
Department		
Health sciences	563	80.4
Educational sciences	37	5.3
Social sciences	57	8.1
Science	43	6.1
Education level		
1st	242	34.6
2nd	294	42.0
3rd	54	7.7
4th and above	110	15.7
Socioeconomic level		
Low	130	18.6
Medium	528	75.4
High	42	6.0
Diagnosed with COVID-19		
Yes	174	24.9
No	526	75.1
Having COVID-19 vaccine		
Yes	602	86
No	98	14

71.41-88.2 high level of awareness and 88.21-105 very high level of awareness. The result of the reliability analysis of the scale shows that the alpha coefficient is 0.90. In the sub-dimensions, alpha values were calculated as 0.73 for the mask, 0.84 for the distance, and 0.85 for the hygiene. The Cronbach alpha coefficient was found to be 0.953 in the study.

Vaccine Hesitancy Scale in Pandemics

Larson et al. (2015) developed the Vaccine Hesitancy Scale in Pandemics, and Çapar and Çınar (2021) conducted its Turkish validity and reliability. It is a 5-point Likert type measurement tool, scored as follows: strongly disagree (1), disagree (2), neither agree, nor disagree (3), agree (4), strongly agree (5). Larger scores from the scale indicate that vaccine hesitancy is high in pandemics. The “Vaccination Hesitance Scale in Pandemics” tool consists of 10 items and two sub-dimensions. High scores from the first sub-dimension, "Lack of Confidence", show that vaccine mistrust increases in pandemics. High scores from the second sub-dimension "Risk" indicate that the risk of vaccination is high in pandemics. The Cronbach

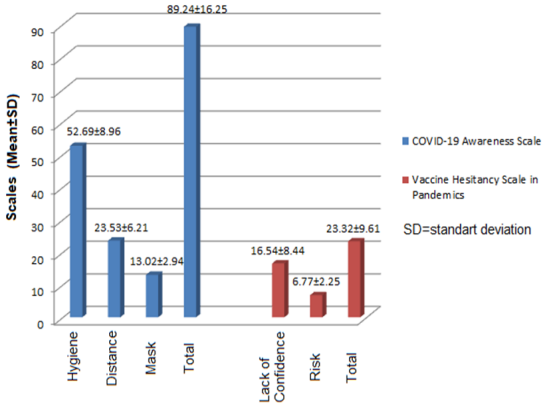

Figure 1. Mean scores of the scales

Alpha coefficient of the scale was 0.901, and the Cronbach alpha coefficient in the study was 0.915.

Data Collection

Data for the study was collected online between October 2021 and January 2022 through the snowball sampling method, which is one of the purposeful sampling methods. The online data collection forms were first sent to university students who agreed to participate in the study via e-mail, who were then asked to forward the research link to other university students.

Data Analysis

The Statistical Package for Social Sciences (SPSS) version 27 (SPSS Inc. Chicago, IL, USA, 2020) was used to perform all statistical tests. Initially, a Shapiro–Wilk test was carried out to check the normality of data with a significance level of ≤0.05. We used number, mean, percentile distributions, standard deviation, One-Way ANOVA, independent t-test, and the Pearson correlation analysis to evaluate the data.

Ethical Regulations

For implementation of the research, ethical approval was obtained from Yalova University Ethics Committee (Approval date: 13.10.2021, Decision No: 2021/98). After clicking the survey link, participants were directed to a section providing brief information about the research and confirming their willingness to participate voluntarily in the study. After participants approved participation, they answered all questions in the data collection form. The answers were available on Google forms only via an e-mail address

Table 2. Difference between the specifications of the students and the COVID-19 Awareness Scale mean scores

Variables	COVID-19 Awareness Scale (COVFÖ)			
	Hygiene	**Distance**	**Mask**	**Total**
	Mean±SD	**Mean±SD**	**Mean±SD**	**Mean±SD**
Sex				
Female	54.33±6.95	24.38±5.62	13.42±2.52	92.14±13.1
Male	48.88±11.6	21.52±7.03	12.06±3.59	82.43±20.3
Test/p	t=7.711	t=5.706	t=5.732	t=7.521
	p=0.000	**p=0.000**	**p=0.000**	**p=0.000**
Department				
Health sciences	53.15±8.51	23.83±6.06	13.21±2.84	90.20±15.60
Educational sciences	52.56±9.16	23.43±6.63	13.13±3.07	89.13±16.80
Social sciences	51.75±9.20	22.64±6.13	11.82±2.96	86.22±15.90
Science	48.02±12.40	20.76±7.30	12.0±3.61	80.79±21.30
Test/p	F=4.669	F=3.720	F=5.761	F=5.284
	p=0.003†	**p=0.011**†	**p=0.001**†	**p=0.001**†
Education level				
1st	53.76±6.21	24.49±5.46	13.45±2.27	91.7±12.10
2nd	52.42±9.84	23.11 ±6.55	12.76±3.27	88.29±17.60
3rd	50.53±11.9	21.27±6.46	12.70±3.39	84.51±20.10
4th and above	52.13±9.75	23.64±6.39	12.90±3.02	88.68±17.50
Test/p	F=2.658	F=4.221	F=2.797	F=3.762
	p=0.064	**p=0.002**†	**p=0.025**†	**p=0.005**†
Socioeconomic level				
Low	21.53±7.54	11.79±3.97	11.79±3.97	80.93±24.60
Mediujm	23.98±5.77	13.31±2.58	13.31±2.58	91.19±12.70
High	24.02±5.94	13.11±2.58	13.11±2.58	90.45±15.30
Test/p	F=27.837	F=8.380	F=14.454	F=22.209
	p=0.000†	**p=0.000**†	**p=0.000**†	**p=0.000**†
Diagnosed with COVID-19				
Yes	52.89±9.21	23.59±6.25	13.02±3.01	89.51±16.6
No	52.08±8.16	23.34±6.09	12.99±2.73	88.42±14.9
Test/p	t=1.099	t=0.463	t=0.139	t=0.814
	p=0.273	p=0.644	p=0.889	p=0.417
Having COVID-19 vaccine				
Yes	53.89±6.37	24.09±5.59	13.40±2.45	91.39±12.35
No	45.35±16.20	20.04±8.36	10.67±4.32	76.07±27.47
Test/p	t=9.247	t=6.150	t=8.962	t=9.151
	p=0.000	**p=0.000**	**p=0.000**	**p=0.000**

t=independent t test, F=One way Anova test * (when an overall significance was observed, post-hoc tests were performed using Tukey HSD†); p value of less than .05 was considered to show a statistically significant result.

defined on behalf of the researchers to ensure the confidentiality of the answers of the students participating in the research.

RESULTS

The majority of the students were female (70.1%), studying in health sciences (80.4%), and 2nd year (42%). Table 1 shows the information of some descriptive characteristics of the students.

It was found that students scored higher in the COVID-19 Awareness Scale total and all its sub-dimensions, below average in the Vaccine Hesitancy Scale in Pandemics and the lack of confidence sub-dimension, and above the average in the risk sub-dimension (Figure 1).

In examining the factors affecting the COVID-19 Awareness Scale, we see that female students scored statistically significantly higher than male students and those who were vaccinated than unvaccinated in all scale sub-dimensions and total score averages ($p<0.05$). A statistically significant difference was found between department and the mean score of the scale ($p<0.05$). In the advanced analysis, there was a statistically significant difference found between students studying in health sciences and students studying in science in terms of distance ($p=0.009$) and hygiene ($p=0.002$) sub-

Table 3. Difference between the specifications of the students and the Vaccine Hesitancy Scale in Pandemics mean scores

Variables	Vaccine Hesitancy Scale in Pandemics		
	Lack of confidence	**Risk**	**Total**
	Mean±SD	**Mean±SD**	**Mean±SD**
Sex			
Female	16.00±7.99	6.67±2.29	22.68±9.20
Male	17.81±9.30	7.01±2.15	24.83±10.3
Test/p	t=-2.609	t=-1.898	t=-2.729
	p=0.009	p=0.058	**p=0.007**
Department			
Health sciences	15.59±7.98	6.67±2.25	22.26±9.16
Educational sciences	19.29±9.30	7.24±2.21	26.54±10.7
Social sciences	20.89±8.76	7.61±1.98	28.50±9.70
Science	20.93±9.59	6.65±2.48	27.58±10.5
Test/p	F=3.627	F=13.276	F=12.596
	p=0.013†	**p=0.000**†	**p=0.000**†
Education level			
1st	15.18±7.44	6.70±2.30	21.89±8.55
2nd	16.93±8.81	6.81±2.17	23.74±10.0
3rd	18.25±9.53	6.64±2.37	24.90±10.7
4th and above	18.04±8.82	7.11±2.24	25.10±9.92
Test/p	F=1.265	F=3.017	F=2.756
	p=0.282	**p=0.017**†	**p=0.027**†
Socioeconomic level			
Low	19.90±10.3	7.46±2.16	27.30±11.5
Medium	15.80±7.85	6.68±2.22	22.50±8.97
High	14.90±6.47	5.85±2.52	20.70±7.60
Test/p	F=13.390	F=10.173	F=15.429
	p=0.000†	**p=0.000**†	**p=0.000**†
Diagnosed with COVID-19			
Yes	17.00±8.24	6.95±2.12	23.90±9.19
No	16.30±8.51	6.71±2.30	23.10±9.75
Test/p	t=-0.829	t=-1.241	t=-1.027
	p=0.408	p=0.216	p=0.305
Having COVID-19 vaccine			
Yes	14.60±6.62	6.54±2.18	21.40±7.70
No	28.50±8.62	8.22±2.15	36.70±9.37
Test/p	t=-18.402	t=-7.073	t=-17.982
	p=0.000	**p=0.000**	**p=0.000**

t=independent t test, F=One way Anova test (when an overall significance was observed, post-hoc tests were performed using Tukey HSD†); p value of less than .05 was considered to show a statistically significant result.

dimensions, and total scale averages (p=0.001). Looking at education levels, we see that students in the first grade achieved higher scores in all sub-dimensions, and total scale. There was a statistically significant difference between first and third grades in the distance sub-dimension (p=0.005) and total scale score averages (p=0.026). A statistically significant difference was determined between the first and second grades in the mask sub-dimension (p<0.001). We see that the total scale score and all sub-dimensions mean scores of the students decreased towards the 4th grade. In terms of the socioeconomic levels of the individuals with whom the students live, there was a statistically significant difference between low to medium (p<0.001) and low to high socioeconomic levels (p=0.001) in the awareness sub-dimension, and between low to medium (p<0.001) and low to high socioeconomic levels (p=0.027) in the distance sub-dimension. In the total score, there was a statistically significant difference between low and medium (p<0.001) and low and high (p=0.002) socioeconomic levels. Although the mean scores of the COVID-19 awareness scale sub-dimensions and total scores of the students diagnosed with COVID-19 were higher than those who did not receive the diagnosis, this difference was not found to be statistically significant (p<0.05) (Table 2).

When we examine the difference between the specifications of the students and the Vaccine

Table 3. Difference between the specifications of the students and the Vaccine Hesitancy Scale in Pandemics mean scores

Variables	Vaccine Hesitancy Scale in Pandemics		
	Lack of confidence	**Risk**	**Total**
	Mean±SD	**Mean±SD**	**Mean±SD**
Sex			
Female	16.00±7.99	6.67±2.29	22.68±9.20
Male	17.81±9.30	7.01±2.15	24.83±10.3
Test/p	t=-2.609	t=-1.898	t=-2.729
	p=0.009	p=0.058	**p=0.007**
Department			
Health sciences	15.59±7.98	6.67±2.25	22.26±9.16
Educational sciences	19.29±9.30	7.24±2.21	26.54±10.7
Social sciences	20.89±8.76	7.61±1.98	28.50±9.70
Science	20.93±9.59	6.65±2.48	27.58±10.5
Test/p	F=3.627	F=13.276	F=12.596
	p=0.013†	**p=0.000**†	**p=0.000**†
Education level			
1st	15.18±7.44	6.70±2.30	21.89±8.55
2nd	16.93±8.81	6.81±2.17	23.74±10.0
3rd	18.25±9.53	6.64±2.37	24.90±10.7
4th and above	18.04±8.82	7.11±2.24	25.10±9.92
Test/p	F=1.265	F=3.017	F=2.756
	p=0.282	**p=0.017**†	**p=0.027**†
Socioeconomic level			
Low	19.90±10.3	7.46±2.16	27.30±11.5
Medium	15.80±7.85	6.68±2.22	22.50±8.97
High	14.90±6.47	5.85±2.52	20.70±7.60
Test/p	F=13.390	F=10.173	F=15.429
	p=0.000†	**p=0.000**†	**p=0.000**†
Diagnosed with COVID-19			
Yes	17.00±8.24	6.95±2.12	23.90±9.19
No	16.30±8.51	6.71±2.30	23.10±9.75
Test/p	t=-0.829	t=-1.241	t=-1.027
	p=0.408	p=0.216	p=0.305
Having COVID-19 vaccine			
Yes	14.60±6.62	6.54±2.18	21.40±7.70
No	28.50±8.62	8.22±2.15	36.70±9.37
Test/p	t=-18.402	t=-7.073	t=-17.982
	p=0.000	**p=0.000**	**p=0.000**

t=independent t test, F=One way Anova test (when an overall significance was observed, post-hoc tests were performed using Tukey HSD†); p value of less than .05 was considered to show a statistically significant result.

Hesitancy Scale in Pandemics mean scores, we see that men scored statistically significantly higher than women in the lack of confidence sub-dimension and the total scale score (p<0.05). The department in which students studied created a statistically significant difference in the scale total score and sub-dimension mean scores. This difference occurred between health sciences and social sciences (p=0.014) in the lack of confidence sub-dimension, between students studying health sciences and educational sciences (p=0.041), and between students studying social sciences (p<0.001) and science (p=0.002) in the scale total score. In terms of the risk sub-dimension (p=0.050) and total scale score averages (p=0.049), it was found that those attending the 4th and above grade scored statistically significantly higher than those in the 1st grade. Students with a low socioeconomic level attained higher scores from all sub-dimensions and total scale scores than those with a high socioeconomic level. Those who were not vaccinated had statistically significantly higher scores in all sub-dimensions and total scores of the scale compared to those who had received the COVID-19 vaccine (p<0.05).

A moderately negative correlation was found between the COVID-19 Awareness Scale and the Vaccine Hesitancy Scale in Pandemics. Looking at the sub-dimensions of the scale, we see a moderately

Table 4. The correlation between mean scores of the scales

Scales		Vaccine Hesitancy Scale in Pandemics		
		Lack of confidence	Risk	Total
COVID-19 Awareness Scale (COVFÖ)	Hygiene	r=-0.484 **p<0.001**	r=-0.071 p=0.050	r=-0.442 **p<0.001**
	Distance	r=-0.441 **p<0.001**	r=-0.074 p=0.050	r=-0.405 p=0.000
	Mask	r=-0.562 **p<0.001**	r=-0.188 p<0.01	r=-0.537 p<0.01
	Total	r=-0.538 **p<0.001**	r=-0.102 **p<0.001**	r=-0.496 **p<0.001**

r= Pearson correlation coefficient

negative correlation between the lack of confidence sub-dimension of the Vaccine Hesitancy Scale in Pandemics and all sub-dimensions of CAS. There was a weak, statistically significant correlation in the negative direction between the mask sub-dimension of CAS and the risk sub-dimension of the Vaccine Hesitancy Scale in Pandemics (Table 4).

DISCUSSION

This study examined the factors affecting the COVID-19 awareness and vaccination hesitation of university students, who maintain an important positon with regard to social mobility, which showed that student awareness of COVID-19 was at a very high level, vaccine hesitancy was below the average. It is also determined that as student awareness of COVID-19 increases, hesitations about vaccination decrease. The research findings were discussed in the light of the relevant literature.

Considering that 9.77% of Turkey's population is composed of university students, the high awareness of students about COVID-19 is important information in the management of COVID-19 transmission. As part of the normalization process during the pandemic, the transition of education from online to in-person poses the biggest risk of contamination due to social mobility. Therefore, the importance of managing COVID-19 increases in this time. Studies available in published literature state that student awareness of COVID-19 varies (16, 17, 18). This difference may be related to the location where the studies were carried out and the individual characteristics of the students. Gender, the department, the grade and the socioeconomic level of students affected the awareness about COVID-19. Also, we notice that students studying in health sciences have a higher awareness of COVID-19. This result is expected because their education curricula contain information on infectious diseases that affect general health and prevention. Many studies in the literature support this result (19, 20, 21). We see that the grade of students is also an effective determiner in the awareness of COVID-19. The high level of awareness of the students in the first year may be related to the fact that the in-person learning was started while the data were collected. With the end of distance education, first-year students entering the university environment for the first time were more careful about masks, distance and hygiene.

An additional variable affecting student awareness of COVID-19 is socioeconomic level. A high socioeconomic level offers individuals many physiologically, psychologically and socially positive life options, allowing individuals to enrich their living space. In the study, students with medium and high socioeconomic statuses had higher awareness than those with a low socioeconomic status, which may be related to the fact that they have better access to information resources or protective equipment. Studies available in the literature support this finding (22, 23, 24).

Experience is another major factor affecting the thoughts and behaviors of individuals (25). In this study, although the status of students being diagnosed with COVID-19 did not make a significant difference in the awareness of COVID-19, the awareness of students who have had the disease was higher. This condition is also expected. In addition, the fact that the awareness of those who have had the COVID-19 vaccine was higher than those who were not vaccinated supports this finding, as individuals may have chosen vaccination in order to not repeat the course of the disease learned through experience. As a matter of fact, the study shows that 86% were vaccinated and their hesitations about vaccination were below average. However, students found the vaccine risky in pandemics. It has been stated that this situation may be related to the

uncertainty about possible side effects of the vaccine (26). This study shows that the specifics of the students also affected their vaccination hesitations. Students studying in departments related to health had lower hesitations about the vaccine. Considering prior studies conducted, it can be seen that the opinions of health students about the vaccine differ (15, 27, 28, 29). This difference may be related to social policies and the individual characteristics of the sample group. Students with a higher socioeconomic status were less hesitant about the vaccine. This may also be related to the availability of information about the vaccine and access to medical support. However, access to information sources about the vaccine may not always result in positive results as speculative information sharing about vaccines can take place on social communication platforms. Students who receive this information may change their ideas about the vaccine, especially senior students, who are older than others in age and experience, can access this information more easily, which is a possible reason why, in the study, students attending the 4th grade think that the risk of vaccination is high. However, students who are above the 4th grade are less hesitant than the others. This may be due to the fact that institutions providing education for more than 4 years are departments related to health. This study shows that being diagnosed with COVID-19 did not affect hesitation about the vaccine, but students who had contracted the disease found the vaccine to be riskier in pandemics. This result may be related to knowledge about the vaccine. A study conducted by Salali and Uysal (2020) with participants from Turkey and the United Kingdom shows that those who are concerned about COVID-19 are more willing to get vaccinated (30). Another study shows that the status of students being diagnosed with COVID-19 did not affect opinions about vaccination (26). These studies support our research findings.

It has been stated that people with an awareness of COVID-19 pay attention to preventative measures such as social distancing, isolation, cleaning, hygiene and mask wearing, and also investigate medical methods to stop the spread of the disease (31, 32). One of the methods to stop the spread is vaccination. Our study shows that as students' awareness of COVID-19 increased, their hesitations about vaccination decreased. This result can be explained by the effectiveness of the activities carried out regarding the positive results of vaccination in COVID-19. There are different findings on the subject in the literature. A study conducted by Sallam et al., found that there was a high correlation between student knowledge and beliefs about COVID-19 and their opposition to vaccination (33). However, a study involving healthcare professionals and students shows that individuals did not want to be vaccinated despite their high awareness (34). These differences in the results may be related to the fact that studies were conducted in different geographic locations.

Limitations

Limitation of this study ise that the data were gathered from a non-probability sampling method and the findings are limited in terms of their generalization. Other limitation is that respondents may also have been predominantly influenced by exposure to COVID-19 vaccine related topics in the media.

CONCLUSION

Individuals are becoming increasingly aware of measures to protect against COVID-19 but it is not known how this affects opinions about the vaccine. Our study shows that university students, who make up a significant part of the population, have a very high awareness of COVID-19. They find vaccines in pandemics risky, but their hesitation is below average. These results show that gender, department, grade, socioeconomic level and the status of being vaccinated against COVID-19 were effective. In addition, we found that hesitancy regarding the vaccine decreased with the increase of awareness about COVID-19. The fact that awareness of COVID-19 decreases, and vaccination hesitancy in pandemics increases as education level increases have made us think that activities should be organized so that students can access reliable information about COVID-19 in education programs.

Acknowledgements: We would like to thank students who participated and supported our work.
Author contributions: Conception, design, literature review, data collection, data processing, writing, critical review made by HE.
Conflict of interest: None.
Ethical approval: For implementation of the research, ethical approval was obtained from Yalova University Ethics Committee (Approval date: 13.10.2021, Decision No: 2021/98).
Funding: No external funding was received for the preparation or writing of this manuscript.
Peer-review: Externally peer-reviewed.

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