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NURSING STUDENTS PERCEPTION, ATTITUDE AND FEAR RELATED TO THE COVID-19 PANDEMIC: A COMPARISON TURKEY AND CROATIA

Percepcija, stav i strah studenata Studija sestrinstva u vezi s pandemijom COVID-19: usporedba Turske i Hrvatske

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Summary

Introduction: The novel coronavirus (SARS-CoV-2) or Covid 19 pandemic has affected people's lives, work, and education around the world, causing fear and anxiety, especially among healthcare professionals. Nursing students are afraid to care for patients, online learning, and infecting their families.
Aim: To determine the perceptions, attitudes, and fears of nursing students studying in Turkey and Croatia regarding Covid 19 and to compare the findings between the two countries.
Method: The research was conducted cross-sectional- descriptively with nursing students. The data was collected using a personal information form and scales measuring perceptions of the Covid-19, fear, and attitudes toward vaccination.
Results: A total of 510 students, 306(60%) Croats and 204(40%) Turks participated in the study. Researchers compared students' total scale and sub-dimension mean scores by country, gender, and grade level. The results are discussed by country. For Croatian and Turkish students, there was no significant difference between the total scores on the fear scale and the contagiousness sub-dimension of the perception scale. Turkish students had higher mean scores on the attitude sub-dimension toward the vaccine and control scale. On the other hand, Croatian students had higher scores on the perception of contagiousness, conspiracy sub-dimension, and cognitive sub-dimension of the avoidance scale.

Conclusion: Data from the pandemic revealed that Turkish students viewed the virus as more dangerous, while Croatian students were more likely to believe conspiracy theories. This suggests a public health risk. While a positive attitude toward vaccination is considered a significant advantage in combating the pandemic, these findings are significant for preparing for future outbreaks.

Sažetak

Uvod: Novi koronavirus (SARS-CoV-2) ili pandemija Covida 19 utjecala je na živote, rad i obrazovanje ljudi diljem svijeta uzrokujući strah i tjeskobu, posebno među zdravstvenim djelatnicima. Studenti sestrinstva susreli su se s online učenjem te bojazni oko skrbi za bolesnike i zdravlja vlastite obitelji.
Cilj: Utvrditi percepcije, stavove i strahove studenata sestrinstva koji studiraju u Turskoj i Hrvatskoj u vezi s Covidom 19 te usporediti rezultate između dvije zemlje.
Metoda: Istraživanje je provedeno presječno-deskriptivnom metodom. Podaci su prikupljeni pomoću obrasca za osobne podatke i skala koje mjere percepciju Covida-19, strah i stavove prema cijepljenju.
Rezultati: U studiji je sudjelovalo ukupno 510 studenata, od toga 306(60%) hrvatskih i 204(40%) turskih. Istraživači su usporedili ukupne rezultate studenata na skali i prosječne rezultate poddimenzija prema zemlji, spolu i godini studiranja. Za hrvatske i turske studente nije bilo značajne razlike između ukupnih rezultata na skali straha i poddimenzije zaraznosti skale percepcije. Turski studenti imali su više prosječne rezultate na poddimenziji stava prema cjepivu i kontroli. S druge strane, hrvatski studenti imali su više rezultate na percepciji zaraznosti, poddimenziji zavjere i kognitivnoj poddimenziji skale izbjegavanja.
Zaključak: Podaci o pandemiji otkrili su da turski studenti virus smatrali opasnijim, dok su hrvatski studenti bili skloniji vjerovati teorijama zavjere. Rezultati mogu poslužiti za pripremu zdravstvenih djelatnika/studenata za buduće epidemije.

Ključne riječi:
Covid 19; novi koronavirus (SARS-CoV-2); studenti sestrinstva; strah od Covida 19, percepcija Covida 19, stav prema Covidu 19, pandemija

INTRODUCTION

The novel coronavirus (SARS-CoV-2), which caused the COVID-19 pandemic, has affected social life, work, and educational processes globally.[1] Research conducted during the pandemic consistently indicates that individuals experienced fear, stress, and anxiety related to COVID-19.[2–5] Studies report that health sciences students, including nursing students, also experienced heightened levels of fear and anxiety during this period.[6] Factors associated with fear, anxiety, and stress among students include the transition to distance education, continuation of clinical practice during the first wave of the pandemic, caring for patients with COVID-19, contact with infected individuals, living away from family, low income, limited housing conditions, uncertainty regarding the course of the pandemic, perceived inability to cope, concern for the health of loved ones, and lifestyle changes.[7–10] Elevated stress and anxiety levels have been shown to negatively affect students' academic performance, sleep quality, concentration, and eating behaviors, and to increase symptoms of anxiety and depression.[10–12] However, fear and anxiety have also been associated with greater compliance with protective measures against COVID-19 and improved anxiety management among university students.[12] For example, a study conducted in Spain reported a decrease in perceived stress levels among students as their knowledge about COVID-19 transmission routes, protective measures, and educational processes increased.[12]

Students working in units caring for patients with COVID-19 and who had not contracted the disease were found to comply more strictly with protective measures to avoid infection and to protect those around them.[13,14] The literature indicates that university students generally demonstrate a high level of risk perception and awareness regarding COVID-19.[7,15–18] The ability to rapidly access information about the disease has contributed to this awareness. Increased knowledge about COVID-19 enhances nursing students' awareness and understanding of the disease.[15] Moreover, students who perceive themselves to be at risk tend to describe COVID-19 as more serious than other respiratory epidemics, such as severe acute respiratory syndrome (SARS) and seasonal influenza.[16–18] The effectiveness of vaccines in controlling the COVID-19 pandemic is well documented. Although the general attitude toward vaccination and immunization programs is largely positive, a proportion of individuals remain hesitant or concerned.[13,14,19,20] Concerns regarding potential side effects, insufficient evidence of vaccine efficacy, the rapid development process, and media reports about adverse effects are among the primary reasons for vaccine hesitancy or refusal.[13,17,18,21–23] Access to adequate and reliable information is a key factor in reducing pandemic-related fear and anxiety and in addressing vaccine hesitancy. In a study conducted in Poland, nursing students' anxiety levels decreased as their knowledge about COVID-19 vaccines increased.[24] High risk perception of COVID-19, lower anxiety levels, positive beliefs and attitudes toward vaccination, and higher vaccine literacy have been identified as important determinants of nursing students' intention to be vaccinated.[25] Accordingly, attitudes toward COVID-19 vaccination are influenced by experiences with COVID-19 infection, knowledge level, information disseminated through social media, trust in health authorities, personal or familial exposure to the disease, and perceived personal and familial risk.[19–21] Additionally, nursing students' willingness to participate in clinical training, desire to protect loved ones, motivation to return to normal life, support for national pandemic control strategies, trust in vaccines, access to accurate and reliable information, and the establishment of organized vaccination programs at universities contribute to positive attitudes toward vaccination.[13,14,19]

The aim of this study is to determine and compare the perceptions, attitudes, and fears related to COVID-19 among nursing students in Turkey and Croatia. It is hypothesized that no significant differences will be observed between the two groups, as nursing curricula and educational protocols implemented by universities during the pandemic were similar in both countries.

METHODS

Study Design

This study employed a cross-sectional descriptive design.

Participants

The target population comprised 1,425 nursing students, including 999 students from Turkey and 426 from Croatia. A total of 510 students participated in the study, resulting in a response rate of 35.8%. Participation was higher among Croatian students (306 of 426) compared to Turkish students (204 of 999).

Data Collection

Data were collected through an online survey. In Croatia, data collection occurred between October and December 2021, whereas in Turkey it took place between March and June 2022.

Local Context

The study was conducted at Akdeniz University Faculty of Nursing in Turkey and the Department of Nursing at Bjelovar University of Applied Sciences in Croatia, selected due to their long-standing and successful international research collaboration.

Nursing education at Bjelovar University of Applied Sciences is delivered through a three-year program. Although clinical training initially continued during the pandemic, it was later suspended due to increased morbidity rates. COVID-19 vaccination

was not mandatory; however, unvaccinated students were required to submit weekly PCR test results.

Nursing education at Akdeniz University Faculty of Nursing is provided through a four-year program. During the 2020–2021 academic year, education was conducted online, and clinical training resumed using hybrid methods. While vaccination was not compulsory, students were required to be vaccinated to participate in in-person education; those who were unvaccinated were required to submit PCR test results.

In both countries, data collection took place during the third phase of the gradual normalization period. During this phase, hybrid education was implemented, mask mandates remained in place in both indoor and outdoor settings, and social activities were permitted under social distancing regulations. Additionally, COVID-19 vaccination programs had progressed, and the administration of the third vaccine dose had begun.[26]

Data Collection Tools

Research data were collected through the Personal Information Form, scales of fear and perception related to Covid-19, perception of the causes and control of Covid-19, attitudes to avoid Covid-19, and attitudes towards the Covid- 19 vaccine. Geniş et al.[27] conducted validity and reliability studies of the Turkish versions of other scales other than the Covid 19 Fear Scale. All scales used a 5-point Likert scale, with responses ranging from "Strongly disagree (1)" to "Strongly agree (5)".

Personal Information Form: The form consisted of questions regarding the socio-demographic characteristics of the students.

Covid 19 Fear Scale: Developed by Ahorsu et al.[27] The scale's Turkish validity and reliability was carried out by Bakioğlu, Korkmaz, and Ercan.[29] It has a single-factor structure and consists of seven items in a 5-point Likert type (1= Strongly disagree; 5= Strongly agree). The scale's lowest score is 7 and the highest is 35. A high score indicates a high level of fear.

Covid 19 Perception Scale: The scale has two sub-dimensions, "Dangerousness" and "Contagiousness," and a total of seven items. The dangerousness sub-dimension (questions 1, 2, and 3) covers perceptions about the danger posed by the disease. The contagiousness sub-dimension (questions 4, 5, 6, and 7) consists of items related to perceptions about the contagiousness of the disease. Questions 1 and 2 in the dangerousness sub-dimension are scored reversely. A value between 1 and 5 is obtained by dividing the total score by the number of items in that sub-dimension. High scores in the dangerousness sub-dimension indicate a high perception of the danger of the disease, and high scores in the contagiousness sub-dimension indicate a perception that the virus is highly contagious.

Causes of Covid 19 Perception Scale: The scale has three sub-dimensions: "Conspiracy," "Environment," and "Belief" with 14 items. The "Conspiracy" sub-dimension includes conspiracy theories about the causes of the disease. The "Environment" sub-dimension includes possible causes such as unhealthy nutrition, global warming, and pollution of natural resources. The "Belief" sub-dimension includes items that associate the cause of Covit-19 with religious and spiritual reasons. There are no reverse items in the scale. A value between 1 and 5 is obtained by dividing the total score by the number of items in that sub-dimension. The height of this value indicates the height of the perception in that sub-dimension.

Covid 19 Control Perception Scale: The text contains 12 items from three sub-dimensions: macro control (items 1-4), personal (micro) control (items 5-8), and controllability (items 9-12).

"Macro control" concerns beliefs about the effectiveness of measures taken at the institutional, national, or global level. "Personal control" is related to the effectiveness of personal measures taken to avoid contracting the disease. "Controllability" is the dimension that evaluates the perception of the controllability of the disease. All items in the controllability subscale (items 9, 10, 11, and 12) are scored reversely. A value between 1 and 5 is obtained by dividing the total score by the number of items in the sub-dimension. High scores in the macro control sub-dimension reflect the belief that the measures taken are sufficient. High scores in the personal control dimension reflect the belief that the disease can be controlled at a good level with personal measures. High scores in the controllability sub-dimension reflect the belief that the disease can be controlled.

Covid 19 Avoidance Attitudes Scale: The scale has two subscales: cognitive avoidance (items 1-5) and behavioral avoidance (items 6-10), for a total of 10 items. The "Cognitive avoidance" subscale includes avoiding news about the virus. The "Behavioral avoidance" subscale includes avoiding crowds. There are no reverse items. A value between 1 and 5 is obtained by dividing the total score by the number of items in that subscale. High scores on the subscales indicate a high tendency to avoid the relevant area.

Attitudes Scale Towards Covid 19 Vaccine: The scale has two sub-dimensions: positive and negative attitudes. It has a total of nine items. Items in the negative attitude subscales (items 5, 6, 7, 8, and 9) are scored reversely. A value between 1 and 5 is obtained by dividing the total score by the number of items in that sub-dimension. High scores on the positive attitude subscale (items 1, 2, 3, and 4) indicate a positive attitude towards the vaccine. Higher scores on the negative attitude subscale indicate a negative attitude towards the vaccine.

The scales were preferred because it is up-to-date, sufficient, clear, and understandable in assessing fear, perception, and attitude about COVID-19. For all scales, permission was obtained via e-mail from the authors who conducted the validity and reliability of the scale. The scales were administered in Croatian and in Turkish for students from both countries. The language validity of the scale has been ensured for both countries.

Analysis of Data

Statistical data analyses were made in the SPSS (Statistical Package for Social Science-23.0) program. The demographic data of the students and

Table 1 Alpha Values of Scale Total and Sub-Dimensions (n=510)
Tablica 1. *Alfa vrijednosti ukupnih skala i poddimenzija (n=510)*

SCALES/items count *Skale/ broj predmeta*	**Scale Total** *Sveukupno skale* **α**	**Sub-dimensions** **Poddimenzije**	**α**
Covid 19 Perception *Percepcija Covid 19*	0.668	Dangerousness *Opasnost*	0.655
		Contagiousness *Zaraznost*	0.643
Attitude Towards Covid 19 Vaccine *Stav prema Covid 19 cjepivo*	0.902	Positive *Pozitivna*	0.922
		Negative *Negativna*	0.847
Covid 19 Avoidance *Izbjegavanje Covid 19*	0.805	Cognitive Kognitivno	0.896
		Behavioral *Ponašanje*	0.884
Perception of Covid 19 Causes *Percepcija uzroka Covid 19*	0.873	Macro *Makro*	0.939
		Personal *Osobna*	0.867
		Controllability *Kontrola*	0.873
Control /*Kontrola*		Macro *Makro*	0.865
		Personal *Osobna*	0.634
		Controllability *Kontrola*	0.732
Fear /*Strah*	0.87		

their participation rates are given in numbers, frequencies, and percentages. The Shapiro-Wilk normality test was conducted to determine the data's distributional characteristics. Skewness and kurtosis values were examined to support this assessment. The values were found to lie outside the ±1 range. The results of the normality analyses showed that the data did not meet the assumption of normal distribution. Non-parametric statistical methods were used. The Mann-Whitney U test was used for comparisons between two independent groups, while the Chi-square test was applied to assess relationships between categorical variables. The results were evaluated at the 95% confidence interval and the significance level was $p<0.05$. Cronbach's alpha coefficients were computed to evaluate the internal consistency of the scales employed in the study. The reliability coefficients of the scales used in the study are presented in Table 1.

The Alpha values of the scales show that the scales used in the study are reliable.

RESULTS

60% of the participants were students from Croatia, and 75.1% were female. The majority of the students were in their first year of study (Table 2).

Table 2 Nursing students' characteristics (n=510)
Tablica 2. *Karakteristike studenata sestrinstva (n=510)*

Demographic Characteristics ***Demografske karakteristike***		
Age (min-max / x̄±SS) ***Starost***	**23.91±6.227 (min.18, max.46)**	
	N	**%**
Country/*Zemlja*		
Croatia /*Hrvatska*	306	60
Türkiye /*Turska*	204	40
Gender / *Spol*		
Female /*žensko*	383	75.1
Male/ *muško*	127	24.9
Class		
1	209	40.4
2	119	23.3
3	110	21.6
4	75	14.7

The students' total scale scores and subscale mean scores were compared according to country, gender, and year of study (Table 3). When comparisons by country were examined, no statistically significant differences were found between Turkish and Croatian students in terms of the total fear scale scores or the contagiousness subscale of the COVID-19 perception scale. However, statistically significant differences were observed in the remaining subscales. Turkish students reported higher mean scores on the attitude toward the COVID-19 vaccine and the COVID-19 control scale. In contrast, Croatian students had higher mean scores on the contagiousness subscale of the COVID-19 perception scale, the conspiracy subscale of the COVID-19 reasons scale, and the cognitive subscale of the COVID-19 avoidance scale (Table 3).

Gender-based comparisons showed no statistically significant differences in mean scores for attitudes toward the COVID-19 vaccine, COVID-19 avoidance, or the subscales of the COVID-19 reasons scale. However, statistically significant differences were found between genders in terms of total fear scale scores, the perceived dangerousness subscale of the COVID-19 perception scale, and the macro subscale of the COVID-19 control scale (Table 3).

When analyzed by year of study, no significant differences were observed in total fear scale scores. Fourth-year students demonstrated higher mean scores in the negative attitude subscale toward the COVID-19 vaccine and the perceived dangerousness subscale of the COVID-19 perception scale compared with students in other years. Comparisons of the COVID-19 reasons scale across academic years revealed statistically significant differences in all subscales. Third-year students had the highest mean score in the cognitive subscale of the COVID-19 avoidance scale, and this difference was statistically significant. Additionally, fourth-year students exhibited the highest mean scores in the personal and controllability subscales of the COVID-19 control scale, with statistically significant differences observed among year groups (Table 3).

Table 3 Comparison of students' demographic characteristics and scale total and sub-dimension score averages
Tablica 3. *Usporedba demografskih karakteristika studenata i prosječnih rezultata ukupne skale i poddimenzija*

Scales *Skale*	Features/Karakteristike										
	Country/*Zemlja*			Gender/*Spol*			Class/*Klasa*				
	Croatia *Hrvatska* x̄±SS	Türkiye Turska x̄±SS	Statistics *statistika**	Female *Žensko* x̄±SS	Male *Muško* x̄±SS	Statistics* *Statistika*	1 x̄±SS	2 x̄±SS	3 x̄±SS	4 x̄±SS	Statistics** *Statistika*
Fear /*Strah*											
	2.02±0.81	2.20±0.89	Z=-2.231 p=0.26	2.16±0.83	1.88±0.87	Z=-3.975 **p=0.000**	2.11±0.86	2.15±0.68	2.02±0.85	2.05±0.85	X^2= 2.112 p=0.549
Attitude Towards Covid 19 Vaccine/*Stav prema COVID 19 cjepivo*											
Positive *Pozitivan*	3.28±1.35	3.57±1.07	Z= -2.021 p=0.432	3.41±1.28	3.36±1.16	Z= -0.591 p=0.554	3.57±1.18	3.24±1.33	3.20±1.40	3.44±1.04	X^2= 7.037 p=0.071
Negative *Negativan*	2.90±1.02	3.36±0.94	Z= -5.396 **p=0.000**	3.07±1.02	3.11±0.96	Z= -0.286 p=0.775	3.16±0.94	2.91±1.00	2.87±1.09	3.47±0.95	X^2= 20.982 **p=0.000**
Covid 19 Perception /*Covid 19 percepcija*											
Dangerousness *Opasnost*	3.08±0.95	3.46±0.89	Z= -4.732 **p=0.000**	3.29±0.94	3.06±0.93	Z= -2.479 **p=0.013**	3.25±0.93	3.24±1.00	3.03±0.90	3.46±0.91	X^2= 9.917 **p=0.019**
Contagiousness *Zaraznost*	4.04±0.66	3.91±0.85	Z= -1.320 p=0.187	3.99±0.76	3.97±0.72	Z= -0.578 p=0.564	3.93±0.75	4.05±0.69	4.10±0.66	3.86±0.91	X^2= 5.192 p=0.158
Perception of Covid 19Causes/ *Covid 19 percepcija uzroka*											
Conspiracy *Zavjera*	3.06±1.19	2.75±1.05	Z= -3.065 **p=0.002**	2.95±1.13	2.90±1.18	Z= -0.571 p=0.568	2.84±1.08	2.98±1.13	3.34±1.27	2.50±0.95	X^2= 25.247 **p=0.000**
Environment *Okolina*	2.45±0.97	3.13±0.90	Z= -7.720	2.73±1.02	2.70±0.96	Z= -0.104 p=0.917	2.78±0.99	2.53±1.06	2.65±1.04	2.96±0.83	X^2= 12.067 **p=0.007**
Belief *Vjerovanje*	1.67±0.93	2.30±1.15	Z= -6.720 **p=0.000**	1.87±1.03	2.08±1.17	Z= -1.381 p=0.167	2.05±1.13	1.79±1.00	1.67±1.02	2.17±0.99	X^2= 19.881 **p=0.000**
Covid 19Avoidance /*Izbjegavanje Covid 19*											
Cognitive *Kognitivno*	3.15±1.14	2.60±1.04	Z= -5.398 **p=0.000**	2.96±1.13	2.84±1.14	Z= -0.891 p=0.373	2.86±1.11	3.12±1.16	3.15±1.11	2.49±1.05	X^2= 18.515 **p=0.000**
Behavioral *Bihevijoralno*	2.39±1.15	2.84±0.98	Z= -4.703 **p=0.000**	2.62±1.12	2.43±1.05	Z= -1.509 p=0.131	2.54±1.09	2.47±1.12	2.64±1.16	2.70±1.01	X^2= 2.497 p=0.476
Control / *Kontrola*											
Macro *Makro*	2.73±1.02	2.84±0.92	Z= -1.512 p=0.131	2.71±0.97	2.97+1.02	Z= -2.081 **p=0.037**	2.76±0.97	2.80±1.03	2.77±1.02	2.76±0.93	X^2= 0.295 p=0.961
Personal *Osobna*	2.50±0.76	3.17±1.01	Z= -8.429 **p=0.000**	2.76±0.81	2.81+1.20	Z= -0.085 p=0.932	2.86±0.83	2.65±0.83	2.53±0.80	3.08±1.30	X^2= 17.959 **p=0.000**
Controllability *Upravljivost*	2.63±0.85	3.15±0.89	Z= -6.155 **p=0.000**	2.82±0.89	2.90+0.92	Z= -0.816 p=0.415	2.90±0.84	2.68±0.94	2.63±0.90	3.22±0.86	X^2= 20.241 **p=0.000**

Z= The Mann-Whitney U test Mann Whitney U Testi; X^2= Chi-square test, p<0.05 / *Mann-Whitneyjev U test Mann-Whitneyjev U test; X^2 = hi-kvadrat test, p < 0,05*

DISCUSSION

The comparative analysis revealed that both Croatian and Turkish nursing students exhibited relatively low levels of fear regarding the COVID-19 pandemic. Despite the minimal fear, students from both countries perceived the virus as highly contagious. Turkish students, in particular, reported a higher perception of the danger associated with the pandemic compared to Croatian students. This pattern suggests that while fear levels were generally low, Turkish students maintained a heightened belief in the severity of COVID-19. Similar findings have been reported in studies conducted in Poland and Spain, where decreased anxiety and stress levels among health students were attributed to access to accurate vaccine information, heightened awareness of the virus, and streamlined academic processes.[12,24] The decline in perceived fear in both countries may also reflect the gradual return to normalcy during the data collection period, including the resumption of social activities, absence of curfews, and increased public awareness. Nevertheless, the overall perception of danger remained significant, likely due to the continued virulence and lethality of SARS-CoV-2 during this period, despite increased vaccination and treatment options.

Regarding beliefs about the origins of COVID-19, Croatian students were more likely to attribute the pandemic to conspiracy theories, whereas Turkish students were more likely to cite religious or spiritual explanations. These attributions, which lack scientific basis, can have significant societal consequences. Previous studies have shown that individuals who endorse conspiracy theories exhibit reduced institutional trust, lower compliance with government directives, and diminished adherence to preventive measures.[30,31] In Croatia, belief in conspiracy theories has been linked to lower adherence to official guidelines and public health recommendations.[31] This highlights the importance of providing students with accurate and reliable information at both national and institutional levels, as well as mitigating the spread of misinformation. Nursing education institutions play a critical role in ensuring students have access to scientifically grounded knowledge.

Behavioral responses to the pandemic also differed between the two groups. Turkish students demonstrated a strong belief in the efficacy of personal preventive measures and were more likely to adhere to recommended practices, including avoiding social events, limiting physical contact, and using public transportation cautiously. In contrast, Croatian students were more likely to engage in cognitive avoidance strategies, such as diverting attention from pandemic-related information. This finding aligns with previous research indicating that heightened risk perception and awareness foster adherence to protective measures among nursing students.[32] The high compliance observed among Turkish students may be attributed to their perception of the effectiveness of preventive measures and the severity of the pandemic, whereas Croatian students' cognitive avoidance behaviors may contribute to psychological well-being by reducing stress associated with pandemic-related uncertainty.[33]

Attitudes toward the COVID-19 vaccine were generally positive in both countries, with no statistically significant differences observed. Turkish students demonstrated slightly lower tendencies to hold negative attitudes toward vaccination. Positive attitudes toward vaccination have been linked to trust in authorities, knowledge about the vaccine, and a high perception of COVID-19 risk.[14,34] Despite some misconceptions regarding the etiology of the disease, students in both countries expressed confidence in preventive measures and displayed favorable vaccine attitudes. Such attitudes are likely to support individual participation in pandemic control efforts and contribute positively to public health outcomes.

In summary, this study highlights the complex interplay between fear, risk perception, beliefs, and preventive behaviors among nursing students in Turkey and Croatia. While fear levels were low, perceptions of virus severity and preventive efficacy were high, particularly among Turkish students. Differences in beliefs about the causes of COVID-19 influenced behavioral responses, with conspiracy theory adherence correlating with cognitive avoidance and lower compliance. The findings

underscore the importance of providing accurate information, addressing misinformation, and promoting positive attitudes toward preventive measures and vaccination to ensure effective pandemic management.

Limitation of the study

The most significant limitation of the study is the insufficient sample size of Turkish students. The inadequate sample size was due to students' reluctance to fill out the questionnaire. Another limitation is that the relationship between the perception of Covid-19 control (Micro and Macro Control) subscales and the perception of conspiracy theories and religious reasons regarding the causes of Covid-19 were not examined. Furthermore, not having been investigated the relationship between the Covid-19 vaccine, the perception of Covid-19 causes, and the perception of control subscales is another limitation.

CONCLUSION

Data obtained during the course of the ongoing COVID-19 pandemic indicate that both Croatian and Turkish students reported generally low levels of fear. However, Turkish students exhibited a heightened perception of the severity of the threat posed by the novel strain of the virus. Croatian students often used conspiracy theories to explain the pandemic, while Turkish students relied on religion and spirituality. As expected, a strong link was found between the belief in conspiracy theories and avoiding thinking in Croatian students.

The lack of a scientific basis for students' beliefs about the causes of the disease in both countries poses a risk to public health. Consequently, the provision of accurate and reliable information during future outbreaks of a similar nature, and in particular the development of preventative strategies against conspiracy theories and religiously based explanations, is of critical importance.

Moreover, the positive attitudes of students toward the vaccine are encouraging in the context of efforts to control the pandemic. Despite having been collected during the active pandemic, the data provides significant retrospective insights into students' attitudes and perceptions during a potential pandemic. The findings are valuable in revealing differences in perception and attitudes across countries; they also highlight the importance of interventions targeting conspiracy theories against possible future epidemics.

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