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Research Article / Araştırma

Attitudes towards traditional and complementary medicine in nursing students experiencing COVID-19

COVID-19 geçiren hemşirelik öğrencilerinde geleneksel ve tamamlayıcı tıp tutumu

Sevim Dolu[1], Kübra Çırak[2], Nazan Taşan[3], Muhammed Canpolat[4], Medet Korkmaz[5]

[1] Res. Asst. Inonu University, Faculty of Nursing, Department of Internal Medicine Nursing, Malatya/Türkiye, sevim_dolu44@hotmail.com, 0000-0002-7513-9774
[2] Lecturer Kahramanmaraş Sütçü İmam University, Vocational School of Health Services, Kahramanmaraş/Türkiye, kubracirak@ksu.edu.tr, 0000-0002-2510-7969
[3] MSc. Nurse Malatya Battalgazi Mücelli Family Health Center, Malatya/Türkiye, nazan.tasan@gmail.com, 0000-0002-4898-0103
[4] Lecturer Muş Alparslan University, Vocational School of Health Services, Muş/ Türkiye, m.canpolat@alparslan.edu.tr, 0000-0001-8046-104X
[5] Prof. Dr. Inonu University, Faculty of Nursing, Department of Internal Medicine Nursing, Malatya/Türkiye, medet.korkmaz@inonu.edu.tr, 0000-0002-9894-9331

Key Words: COVID-19, Tamamlayıcı Tıp, Hemşirelik Öğrencileri, Sağlık Tutumu

Anahtar Kelimeler: COVID-19, Complementary Medicine, Nursing Students, Health Attitude

Corresponding Author/Sorumlu Yazar: Res. Asst. Inonu University, Faculty of Nursing, Department of Internal Medicine Nursing, Malatya/Türkiye, sevim_dolu44@hotmail.com, 0000-0002-7513-9774

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ABSTRACT

Introduction and Aim: It is essential to know the attitudes and approaches of nursing students, who will be future nurses who will assume a critical role in the health system, towards Traditional and Complementary Medicine (TCM) practices. This study examined the relationship between the TCM attitudes of nursing students who had COVID-19 and how they had COVID-19. **Materials and Methods:** The study was conducted as a descriptive cross-sectional study between October 2022 and May 2023 with nursing students at XXX University, YYY University, and ZZZ University. **Results and Conclusion**: Of the 357 nursing students participating in the study, 71.1% were female, 97.5% were single, and the mean age was 20.95±2.30 years. 79.6% of the students thought COVID-19 was dangerous, and 89.9% had received the COVID-19 vaccine. In addition, 74.2% of the students had COVID-19 at home without treatment. The evaluation using the Complementary, Alternative, and Conventional Medicine Attitudes Scale (CACMAS) determined that students generally had a positive attitude toward TCM. The mean total score of the scale was 113.00±15.83. It was found that as the age of the students and the duration of COVID-19 increased, their dissatisfaction with modern medicine increased. It was determined that nursing students who had COVID-19 had positive attitudes towards TCM and how COVID-19 affected their attitudes. Knowing the attitudes of nursing students, who are the nurses of the future, towards TCM practices will contribute to future studies on TCM practices.

ÖZ

Giriş ve Amaç: Sağlık sisteminde önemli rol üstlenecek olan geleceğin hemşireleri olacak hemşirelik öğrencilerinin Geleneksel ve Tamamlayıcı Tıp (GETAT) uygulamalarına yönelik tutum ve yaklaşımlarının bilinmesi önemlidir. Bu araştırma, COVID-19 geçiren hemşirelik öğrencilerinin GETAT tutumları ile COVID-19'u geçirme şekilleri arasındaki ilişkiyi incelemek amacıyla yapılmıştır. **Gereç ve Yöntem:** Araştırma, XXX Üniversitesi, YYY Üniversitesi ve ZZZ Üniversitesi'nde öğrenim gören hemşirelik öğrencileri ile Ekim 2022-Mayıs 2023 tarihleri arasında tanımlayıcı kesitsel tipte bir çalışma olarak gerçekleştirilmiştir. **Bulgular ve Sonuç:** Araştırmaya katılan 357 hemşirelik öğrencisinin %71.1'i kadın, %97.5'i bekâr olup, yaş ortalaması 20.95±2.30'dur. Öğrencilerin %79.6'sı COVID-19'un tehlikeli olduğunu düşünmektedir ve %89.9'u COVID-19 aşısı yaptırmıştır. Ayrıca, öğrencilerin %74.2'si COVID-19'u evde, tedavi almadan geçirmiştir. Geleneksel ve Tamamlayıcı Tıp Tutum Ölçeği (CACMAS) kullanılarak yapılan değerlendirmede, öğrencilerin genel olarak GETAT'a karşı olumlu tutum sergiledikleri belirlenmiştir. Ölçek toplam puan ortalaması 113.00±15.83'tür. Öğrencilerin yaşı ve COVID-19 hastalığını geçirme süreleri arttıkça modern tıptan memnuniyetsizliklerinin arttığı saptanmıştır. COVID-19 geçiren hemşirelik öğrencilerinin GETAT'a karşı olumlu tutum sergiledikleri ve COVID-19'u geçirme şekillerinin GETAT tutumlarını etkilediği tespit edilmiştir. Geleceğin hemşireleri olan hemşirelik öğrencilerinin GETAT uygulamalarına yönelik tutumlarının bilinmesinin, GETAT uygulamaları ile ilgili ileriki çalışmalara katkı sağlayacağı düşünülmektedir.

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INTRODUCTION

Throughout history, people have faced various health problems and tried to find solutions and protect their health by using plants, animals, and metals. In this process of finding solutions, they have sometimes used modern medicine and occasionally various practices known as Traditional and Complementary Medicine (TCM) (Aktas, 2017; Isik and Can, 2021). According to the World Health Organization (WHO), TCM is a treatment approach different from modern and scientific treatments. In addition, WHO has defined traditional medicine as "a set of knowledge, skills, and practices that can be explained or not, based on theories, beliefs, and experiences specific to different cultures, which are used in maintaining good health as well as preventing, diagnosing, curing or treating physical and mental illnesses" (WHO, 2019).

COVID-19, rapidly affecting the world and causing respiratory infections, emerged as a new coronavirus strain in 2019 in Wuhan, China. The official name of the virus was determined by WHO as SARS-CoV-2 (Severe Acute Respiratory Syndrome-Coronavirus-2); the term COVID-19 was used to describe the disease caused by the virus and a global pandemic was declared on March 11, 2020 (T.C. Sağlık Bakanlığı,2020). COVID-19 has affected millions of people in many fields, such as education, economy, psychology, sociology, and sociology, especially health, and caused the death of people (Kong et al, 2021; Unver et al. 2022).

The COVID-19 pandemic has also affected social beliefs and health practices. It is thought that the treatment of COVID-19 has not yet been finalized. The discourses of some experts on TCM during the pandemic period, when drug and vaccine studies are on going, have been practical in people's search for and use of alternative ways/methods to protect themselves from the virus and to find healing when they get sick in our country, as in the whole world (Konakci et al. 2020). Due to the increasing frequency of the use of TCM practices and their embedding in the health care system, nurses should know the usage status of TCM practices, their scientific aspects, in which cases they can and cannot be applied, and guide their patients in this regard; it will help to solve the health problem that arises or prevent negative situations. Therefore, it is essential to know the attitudes and approaches of nursing students, who will be future nurses who will assume a critical role in the health system, towards TCM practices (Aktas, 2017; Isik and Can, 2021).

This descriptive cross-sectional study examined the TCM attitude of nursing students who had COVID-19 and the relationship between their COVID-19 experience and their TCM attitude.

MATERIALS AND METHODS

Design

The research was conducted as a descriptive cross-sectional study between October 2022, and and May 2023.

Population and sample

The population of the study consisted of nursing students studying at XXX University, YYY University and ZZZ University who experienced COVID-19. The sample consisted of all students (n: 357) who accepted to participate in the study and who had experienced COVID-19. No sample selection was made, the aim was to reach the entire population and it was achieved. Nursing students who did not have a verbal communication barrier (hearing and speech), volunteered to participate, and had at least one COVID-19 experience were included in the study. Those who disagreed to participate in the study, had a verbal communication barrier (hearing and speech) and left the questionnaire form incomplete were excluded.

Data collection

The data of the study were collected by the researchers via a Information Form on Personal COVID-19 Survival Status and the Complementary, Alternative, and Conventional Medicine Attitudes Scale (CACMAS) after obtaining the consent of the students through face-to-face interviews.

Data collection tools

The data collection form had 2 parts. In the first part presented a Information Form on Personal COVID-19 Survival Status that addressed the participants' sociodemographic characteristics and details about COVID-19, while the second part was comprised of the Complementary, Alternative, and Conventional Medicine Attitudes Scale.

A Information Form on Personal COVID-19 Survival Status: The researchers prepared it by reviewing the literature (Aktas, 2017; Isik and Can, 2021; Kong et al, 2021; Unver et al. 2022). The form consisted of questions about sociodemographic characteristics (age, gender, education and marital status, income rate, family type, place of residence, chronic disease status, continuous use of medication, current health perception, sources of advice in case of a complaint) and COVID-19 (the person's opinion about the disease and whether the information given was sufficient, compliance with vaccination and isolation rules, where, how, how many times, how long and with which symptoms the disease was experienced).

Complementary, Alternative, and Conventional Medicine Attitudes Scale(CACMAS): McFadden et al. created the CACMAS, which was previously tested on university graduates in 2010, showing that personal health beliefs change their treatment (McFadden et al 2010). Betthauser et al. tested the validity and reliability of the scale (Betthauser et al. 2014). The scale was adapted to Turkish, and a validity and reliability study was conducted by Köse et al. The scale consists of 27 items and has 3 sub-dimensions: Philosophical congruence with complementary and alternative medicine (items 5, 7, 9, 18, 19, 21, 22, 24), Dissatisfaction with Conventional Medicine (items 1, 4, 8, 11, 14, 16, 17, 20, 26, 27), Holistic Balance (items 2, 3, 6, 10, 12, 13, 15, 23, 25). The scale does not have a cut-off value, and as the score increases, people show positive attitudes towards traditional and complementary medicine. Twenty-two of the scale items are positive (items 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27) and 5 are negative (items 1, 4, 8, 9, 26). Items of negative statements are scored in reverse (7-6-5-4-3-2-1) when analyzed (Kose et al. 2018).

Data analysis

The data were analyzed with SPSS 25.0 (Statistical Package for the Social Sciences). In the representation of the distribution of the data obtained as a result of the research, numbers, and percentages, in the representation of continuous variables, mean (± standard deviation) in cases where the data are normally distributed, Kolmogorov Smirnov and Shapiro-Wilk tests in the evaluation of the normal distribution of the data, independent sample t-test and one-way analysis of variance (ANOVA) in cases where the data are normally distributed in the evaluation of the relationship between the students' sociodemographic and COVID-19 related variables and scale scores; In cases where the data were not normally distributed, Mann-Whitney U test and Kruskal-Wallis test were used, Bonferroni test was used to evaluate pairwise comparisons in multiple groups, and Pearson Correlation Analysis was used to assess the relationship between students' continuous variables (age, duration of COVID-19) and scale total scores. The level of statistical significance was accepted as $P < 0.05$.

RESULTS

The mean age of the nursing students included in the study was 20.95±2.30; 71.1% were female, 31.4% were in the 2nd grade, and 97.5% were single. 81.8% of the students had a nuclear family structure, 35.9% of their mothers were primary school graduates, and 44.3% of their fathers were secondary school graduates. It was found that 55.5% of the students lived in dormitories, 57.7% lived in the city center, 66.9% of the students' income was equivalent to their expenses, 79.6% had health insurance, 93.6% did not have chronic diseases, 91.3% did not use any continuous medication, 54.9% had a good perception of current health, 79.0% did not smoke and 70.9% of the students used the internet in case of a complaint (Table 1).

When the responses of the nursing students to the questions about COVID-19 were examined, 79.6% of the students thought that COVID-19 was dangerous, and 63.3% believed that the information given about COVID-19 was insufficient. It was reported that the students had COVID-19 for an average of 10.78±6.37 days, frequently experienced the symptom of weakness (80.1%) during the disease process, 89.9% had COVID-19 vaccination, 85.9% of those vaccinated had BioNTech vaccine and 72.5% had 2 doses of vaccine, 61.6% followed the mask and social distancing rules, 91.6% had people in their family and circle who had COVID-19 before. It was found that 74.2% of the students had COVID-19 without receiving treatment at home, 49.6% had a moderate course, 3 students were hospitalized in intensive care, and 72.0% had COVID-19 1 time (Table 2).

When the total score and sub-dimension mean scores of the students from the CACMAS were examined, it was found that the mean total score of the scale was 113.00±15.83, the mean score of the sub-dimension of Philosophical congruence with complementary and alternative medicine was 33.59±7.82, the mean score of the sub-dimension of Dissatisfaction with Conventional Medicine was 33.25±10.26, and the mean score of the sub-dimension of Holistic Balance was 46.14±8.95 (Table 3).

A statistically significant difference was found between the mean scores of the Holistic Balance subscale according to gender and family type, and it was determined that the scores of women and those with nuclear family structure were higher (Table 4).

It was found that the mean scores of the Dissatisfaction with Conventional Medicine sub-dimension were significantly higher in those with extended family structure than in single-parent and nuclear families, in those whose mothers were illiterate than in those with better education, in those who lived in dormitories than in those who lived with their families, and in those who lived with friends at home than in those who lived with their families. It was also found that the mean score of those with moderate health perception was higher than those with good health perception in this sub-dimension. The scores of those who did not comply with mask and social distancing rules were also significantly higher (Table 4).

Table 1. Socio-Demographic Characteristics of Students (n=357)

Socio-Demographic Characteristics		n	%
Age ($\bar{x}$±SD)	20.95±2.30		
Gender	Male	103	28.9
	Female	254	71.1
Year of study	First	87	24.4
	Second	112	31.4
	Third	75	21
	Fourth	83	23.2
Marital status	Married	9	2.5
	Single	348	97.5
Family type	Nuclear family	292	81.8
	Extended family	61	17.1
	Single parent family	4	1.1
Mother's education level	Illiterate	84	23.5
	Literate	38	10.6
	Primary education	128	35.9
	Secondary education	82	23.0
	University	25	7.0
Father's education level	Illiterate	9	2.5
	Literate	22	6.2
	Primary education	96	26.9
	Secondary education	158	44.3
	University	72	20.2
Place of residence	Dormitory	198	55.5
	With family	150	42.0
	At home with friends	6	1.7
	Alone at home	3	0.8
Longest inhabited settlement	Province	206	57.7
	District	91	25.5
	Village	60	16.8
Income rate	Income more than expenses	44	12.3
	Income equals expenses	239	66.9
	Income less than expenses	74	20.7
Social security	Yes	284	79.6
	No	73	20.4
Chronic disease status	Yes	23	6.4
	No	334	93.6
Continuous use of medication	Yes	31	8.7
	No	326	91.3
Current perception of health	Good	196	54.9
	Middle	154	43.1
	Bad	7	2.0
Smoking	Yes	66	18.5
	No.	282	79.0
	Dropped out	9	2.5
What sources of advice do you turn to when you have a condition?*	Internet	253	70.9
	Health personnel	157	44.0
	Environment (friends, relatives, spouses, buddies)	101	28.3
	Newspapers, magazines, and books	43	12.0
	Radio, television	24	6.7

*More than one option is selected.

Table 2. Distribution of Data on COVID-19 (n=357)

Questions	Answers	n	%
Do you think COVID-19 is dangerous?	Yes	284	79.6
	No	73	20.4
Do you think the information provided about COVID-19 is sufficient?	Yes	131	36.7
	No	226	63.3
Have you been vaccinated against COVID-19?	Yes	321	89.9
	No	36	10.1
Which COVID-19 vaccine did you get?	BioNTech	275	85.9
	Sinovac	45	14.1
How many doses of vaccine did you receive?	1	42	13.1
	2	232	72.5
	3	46	14.4
Do you follow mask and social distancing rules?	Yes	220	61.6
	Occasional	123	34.5
	No	14	3.9
Has anyone in your family or community ever had COVID-19?	Yes	327	91.6
	No	30	8.4
Where did you have COVID-19?	With home treatment	84	23.5
	Without home treatment	265	74.2
	In hospital ward	5	1.4
	In intensive care	3	0.8
How did you overcome Covid-19?	Asymptomatic	12	3.4
	Mild course	115	32.2
	Moderate course	177	49.6
	Severe course	53	14.8
How many times have you had COVID-19?	1	257	72.0
	2	83	23.2
	3 and above	17	4.7
What symptoms have you experienced during the COVID-19 process? *	Weakness	286	80.1
	Fatigue	280	78.4
	Joint-muscle pain	254	71.1
	Decreased sense of taste and smell	227	63.6
	Fever	223	62.5
	Cough	216	60.5
	Shortness of breath	113	31.7
	Change in body weight	78	21.8
	Diarrhea	57	16.0
	Forgetfulness	3	0.8
	Dizziness	2	0.6
	Sweating	1	0.3
Duration of COVID-19(day) ($\bar{x}$±SD)	10.78±6.37		

*More than one option is selected.

Table 3. Distribution of Total and Subscale Scores of Complementary, Alternative, and Conventional Medicine Attitudes Scale

Scale Total and Sub-dimensions	Mean ± Standard Deviation
Scale Total Score	113.00±15.83
Philosophical congruence with complementary and alternative medicine	33.59±7.82
Dissatisfaction with Conventional Medicine	33.25±10.26
Holistic Balance	46.14±8.95

Table 4. Comparison of Total and Subscale Scores of Complementary, Alternative, and Conventional Medicine Attitudes Scale of Students According to Sociodemographic Characteristics

Socio-Demographic Characteristics		Scale Total Score	Philosophical congruence with complementary and alternative medicine	Dissatisfaction with Conventional Medicine	Holistic Balance
Gender	Male (n=103)	112.52±15.88	33.47±8.18	34.47±9.82	44.58±9.12
	Female (n=254)	113.19±15.85	33.65±7.69	32.75±10.41	46.78±8.82
	Test value	t= -0.361	t= -0.201	U=11577.500	U=11104.500
	Significance	p= 0.819	p= 0.771	p= 0.089	**p= 0.025**
Year of study	First (n=87)	113.95±14.89	33.37±8.73	33.43±10.76	47.13±9.12
	Second (n=112)	111.51±16.09	33.38±7.58	32.22±9.74	45.91±8.54
	Third (n=75)	112.85±17.01	33.96±7.98	32.04±11.13	46.85±7.82
	Fourth (n=83)	114.13±15.45	33.78±7.06	35.55±9.34	44.79±10.15
	Test value	F= 0.574	F= 0.119	KW= 7.307	KW= 3.549
	Significance	p= 0.633	p= 0.949	p= 0.063	p= 0.314
Marital status	Married (n=9)	111.44±18.92	34.00±6.89	34.11±10.24	43.33±10.04
	Single (n=348)	113.04±15.77	33.58±7.85	33.23±10.27	46.22±8.92
	Test value	t= -0.298	t= 0.156	U=1390.000	U=1231.000
	Significance	p= 0.823	p= 0.652	p= 0.565	p= 0.273
Family type	Nuclear family (n=292) -(1)	113.29±15.83	33.52±7.85	32.85±10.11	46.92±8.58
	Extended family (n=61) -(2)	111.93±16.37	33.75±7.87	35.78±10.61	42.39±9.91
	Single parent family (n=4) -(3)	107.75±2.06	36.75±4.03	24.00±8.28	47.00±6.97
	Test value	F= 0.407	F= 0.350	KW=8.350	KW=12.955
	Significance	p= 0.666	p= 0.705	**p=0.015**	**p=0.002**
	Bonferroni				**1>2**
Mother's education level	Illiterate (n=84)	115.23±14.88	33.48±6.16	35.41±8.57	46.33±9.02
	Literate (n=38)	112.63±14.15	33.63±8.02	35.34±11.58	43.65±8.77
	Primary education (n=128)	113.28±15.76	34.20±8.43	31.99±9.85	47.09±8.74
	Secondary education (n=82)	110.35±16.84	32.13±7.86	32.07±11.59	46.14±8.48
	University (n=25)	113.24±18.17	35.60±8.85	33.16±9.88	44.48±11.09
	Test value	F= 1.009	F= 1.328	KW=9.806	KW=5.778
	Significance	p= 0.403	p= 0.259	**p= 0.044**	p= 0.216
Father's education level	Illiterate (n=9)	111.77±14.64	31.55±6.16	37.11±9.03	43.11±7.67
	Literate (n=22)	111.81±14.78	34.22±7.31	35.54±10.01	42.04±12.88
	Primary education (n=96)	111.02±14.32	32.44±6.80	33.39±9.07	45.17±8.74
	Secondary education (n=158)	113.20±16.80	33.36±8.00	33.21±10.29	46.63±8.26
	University (n=72)	115.69±16.01	35.70±8.72	31.97±11.81	48.01±9.00
	Test value	F= 0.946	F= 2.079	KW= 4.109	KW= 8.734
	Significance	p= 0.437	p= 0.083	p= 0.391	p= 0.068
Place of residence	Dormitory (n=198) -(1)	114.55±15.88	34.00±7.91	34.29±10.26	46.24±8.78
	With family (n=150) -(2)	110.23±15.22	32.96±7.69	31.32±9.65	45.95±9.16
	At home with friends (n=6) -(3)	123.00±16.00	33.16±7.85	43.16±9.45	46.66±9.30
	Alone at home (n=3)-(4)	129.00±19.69	39.33±8.08	41.33±20.81	48.33±13.61
	Test value	F= 4.080	F= 1.055	KW= 13.807	KW= 0.454
	Significance	**p= 0.007**	p= 0.368	**p= 0.003**	p= 0.929
	Bonferroni			**1>2 3>2**	
Longest inhabited settlement	Province (n=206)	113.40±15.76	33.66±7.82	32.93±10.45	46.80±9.43
	District (n=91)	113.50±17.23	34.02±7.85	34.09±10.01	45.38±7.69
	Village (n=60)	110.85±13.82	32.70±7.81	33.08±10.09	45.06±8.96
	Test value	F= 0.665	F= 0.536	KW= 1.204	KW= 4.169
	Significance	p= 0.515	p= 0.585	p= 0.548	p= 0.124
Income rate	Income more than expenses (n=44)	111.97±16.64	33.20±8.89	31.50±12.18	47.27±9.44
	Income equals expenses (n=239)	112.68±15.95	33.65±7.52	33.02±9.25	46.00±8.82
	Income less than expenses (n=74)	114.63±15.05	33.64±8.18	35.05±11.91	45.93±9.13
	Test value	F= 0.533	F= 0.063	KW= 2.822	KW= 1.192
	Significance	p= 0.587	p= 0.939	p= 0.224	p= 0.551
Social security	Yes (n=284)	113.15±15.54	33.83±7.77	33.00±10.55	46.32±9.13
	No (n=73)	112.39±17.02	32.67±7.98	34.24±9.03	45.47±8.25
	Test value	t= 0.364	t= 1.134	U=9323.500	U=9432.000
	Significance	p= 0.223	p= 0.995	p= 0.185	p= 0.235
Chronic disease status	Yes (n=23)	117.39±17.13	33.86±7.92	36.56±10.27	46.95±9.54
	No (n=334)	112.69±15.72	33.57±7.82	33.02±10.24	46.09±8.92
	Test value	t= 1.377	t= 0.173	U=3140.000	U=3634.500
	Significance	p= 0.335	p= 0.102	p= 0.143	p= 0.666
Continuous use of medication	Yes (n=31)	115.58±16.52	33.80±7.98	33.87±13.21	47.90±8.78
	No (n=326)	112.75±15.77	33.57±7.82	33.19±9.96	45.98±8.96
	Test value	t= 0.949	t= 0.156	U=4953.500	U=4412.500
	Significance	p= 0.845	p= 0.550	p= 0.856	p= 0.243
Current perception of health	Good (n=196) -(1)	111.10±15.30	33.22±8.08	31.41±10.03	46.45±8.57
	Middle (n=154) -(2)	115.03±16.21	33.93±7.45	35.55±10.17	45.54±9.40
	Bad (n=7) -(3)	121.28±16.18	36.42±8.69	34.14±9.45	50.71±8.53
	Test value	F= 3.697	F= 0.818	KW= 16.328	KW= 3.656
	Significance	**p= 0.026**	p= 0.442	**p= 0.000**	p= 0.161
	Bonferroni			**2>1**	
Smoking	Yes (n=66)	112.42±19.07	33.18±8.66	34.25±10.20	44.98±9.59
	No (n=282)	112.87±15.08	33.58±7.54	32.94±10.23	46.34±8.85
	Dropped out (n=9)	121.22±11.37	37.11±10.08	35.55±12.01	48.55±6.72
	Test value	F= 1.268	F= 1.001	KW= 1.191	KW= 1.850
	Significance	p= 0.283	p= 0.368	p= 0.551	p= 0.397

It was found that the mean total score of the scale was higher in those living alone at home compared to other groups, and the mean score of those with poor health perception was higher than that of those with moderate and good health perception (Table 4).

There was no statistically significant difference between the total and subscale mean scores of the CACMAS according to the year of study, marital status, father's education level, longest inhabited settlement, income rate, social security, chronic disease status, continuous use of medication and smoking status (Table 4).

It was determined that the mean scores of the Philosophical congruence with complementary and alternative medicine sub-dimension of those who did not have anyone in their family and environment who had COVID-19 before were higher than those who did (Table 5).

There was no statistically significant difference between the distributions of the total and subscale mean scores of the CACMAS according to other conditions related to COVID-19 (Table 5).

There was a weak positive correlation between the student's age, the duration of COVID-19, and the sub-dimension of Dissatisfaction with Conventional Medicine. However, no relationship was found between age and duration of COVID-19 and other sub-dimensions and total scale scores (Table 6).

A positive moderate relationship was found between the sub-dimensions of the CACMAS and the scale's total score. There was a moderate positive correlation between the sub-dimensions of Holistic Balance and Philosophical congruence with complementary and alternative medicine. At the same time, there was a weak negative correlation between the sub-dimensions of

Table 5. Comparison of Total and Subscale Scores of Complementary, Alternative, and Conventional Medicine Attitudes Scale of Students According to COVID-19 Data

Questions	Answers	Scale Total Score	Philosophical congruence with complementary and alternative medicine	Dissatisfaction with Conventional Medicine	Holistic Balance
Do you think COVID-19 is dangerous?	Yes (n=284)	113.32±15.51	33.88±7.59	33.04±10.31	46.39±8.95
	No (n=73)	111.73±17.06	32.47±8.60	34.08±10.08	45.17±8.93
	Test value	t= 0.762	t= 1.370	U=9805.500	U=9487.000
	Significance	p= 0.551	p= 0.175	p= 0.476	p= 0.263
Do you think the information provided about COVID-19 is sufficient?	Yes (n=131)	111.72±15.41	34.01±7.63	32.29±10.62	45.41±9.55
	No (n=226)	113.73±16.06	33.35±7.93	33.81±10.02	46.57±8.57
	Test value	t= -1.159	t= 0.769	U=13440.000	U=13542.000
	Significance	p= 0.839	p= 0.566	p= 0.147	p= 0.179
Have you been vaccinated against COVID-19?	Yes (n=321)	112.53±15.75	33.82±7.77	32.85±10.19	45.85±9.20
	No (n=36)	117.16±16.14	31.55±8.07	36.80±10.33	48.80±5.75
	Test value	t= -1.669	t= 1.655	U=4659.500	U=4809.000
	Significance	p= 0.865	p= 0.694	p= 0.057	p= 0.099
Which COVID-19 vaccine did you get?	BioNTech (n=275)	112.48±15.80	33.91±7.75	32.50±10.06	46.06±8.90
	Sinovac (n=45)	113.22±15.58	33.51±7.89	34.86±10.90	44.84±10.81
	Test value	t= -0.291	t= 0.324	U=5471.000	U=6051.000
	Significance	p= 0.586	p= 0.497	p= 0.213	p= 0.812
How many doses of vaccine did you receive?	1 (n=42)	114.09±13.41	33.92±6.19	35.80±8.00	44.35±8.60
	2 (n=132)	111.71±16.64	33.46±7.93	32.52±9.96	45.71±9.29
	3 (n=46)	115.10±12.86	35.47±8.24	31.63±12.60	48.00±9.11
	Test value	F= 1.134	F= 1.285	KW=4.983	KW=3.794
	Significance	p= 0.323	p= 0.278	p= 0.083	p= 0.150
Do you follow mask and social distancing rules?	Yes (n=220)	112.79±16.65	33.82±8.03	32.20±10.74	46.76±9.24
	Occasional (n=123)	113.26±14.00	33.38±7.44	34.49±9.00	45.39±8.36
	No (n=14)	113.85±18.78	31.85±8.04	38.92±10.57	43.07±8.79
	Test value	F= 0.056	F= 0.487	KW= 7.727	KW= 4.637
	Significance	p= 0.945	p= 0.615	**p= 0.021**	p= 0.098
Has anyone in your family or community ever had COVID-19?	Yes (n=327)	112.72±15.55	33.56±7.64	33.13±10.17	46.02±9.03
	No (n=30)	116.00±18.63	33.90±9.69	34.56±11.25	47.53±7.98
	Test value	t= -1.084	t= -0.222	U=4392.000	U=4384.500
	Significance	p= 0.263	**p= 0.038**	p= 0.343	p= 0.336
Where did you have COVID-19?	With home treatment (n=84)	112.75±16.83	33.00±8.26	32.94±10.37	46.80±8.77
	Without home treatment (n=265)	112.96±15.66	33.83±7.73	33.26±10.19	45.87±9.08
	In hospital ward (n=5)	111.60±9.37	34.60±6.06	31.40±11.63	45.60±6.80
	In intensive care (n=3)	125.00±10.14	28.00±3.60	44.66±9.86	52.33±2.30
	Test value	F= 0.592	F= 0.779	KW= 3.122	KW= 2.450
	Significance	p= 0.620	p= 0.506	p= 0.373	p= 0.484
How did you overcome COVID-19?	Asymptomatic (n=12)	117.41±12.87	35.50±7.06	37.08±12.25	44.83±8.86
	Mild course (n=115)	112.95±14.27	34.20±7.99	32.40±10.76	46.35±9.22
	Moderate course (n=177)	112.50±15.71	33.50±7.72	32.80±9.43	46.19±8.70
	Severe course (n=53)	113.75±19.83	32.15±7.92	35.75±11.04	45.84±9.43
	Test value	F= 0.408	F= 1.076	KW= 6.191	KW= 0.501
	Significance	p= 0.748	p= 0.359	p= 0.103	p= 0.919
How many times have you had COVID-19?	1 (n=257)	112.44±15.88	33.45±7.97	32.76±10.05	46.22±9.03
	2 (n=83)	113.49±15.36	33.84±7.10	33.93±11.05	45.71±9.10
	3 (n=17)	118.94±17.01	34.52±9.17	37.29±8.83	47.11±7.03
	Test value	F= 1.396	F= 0.203	KW= 4.022	KW= 0.163
	Significance	p= 0.249	p= 0.816	p= 0.134	p= 0.922

Table 6. The Relationship Between Age, Duration of COVID-19 Illness and Complementary, Alternative, and Conventional Medicine Attitudes Scale Total Score and Subscale Score Averages

Characteristics	p-r	Scale Total Score	Philosophical congruence with complementary and alternative medicine	Dissatisfaction with Conventional Medicine	Holistic Balance
Age	p	0.566	0.245	**0.022**	0.158
	r	-0.030	-0.062	0.122	-0.075
Duration of COVID-19	p	0.262	0.928	**0.004**	0.180
	r	0.059	-0.005	0.151	-0.071
Scale Total Score	p		**0.000**	**0.000**	**0.000**
	r		0.693	0.527	0.559
Philosophical congruence with complementary and alternative medicine	p	**0.000**		0.495	**0.000**
	r	0.693		0.036	0.311
Dissatisfaction with Conventional Medicine	p	**0.000**	0.495		**0.000**
	r	0.527	0.036		-0.204
Holistic Balance	p	**0.000**	**0.000**	**0.000**	
	r	0.559	0.311	-0.204	

Holistic Balance and Dissatisfaction with Conventional Medicine (Table 6).

DISCUSSION

In this study, which aimed to examine the TCM attitudes of nursing students who had COVID-19 and the relationship between how they had COVID-19 and their TCM attitudes, the mean score of the CACMAS was 113.00±15.83. It was determined that the attitudes of the students were positive and moderate. In a study conducted by Özer et al.(2020) with patients who had COVID-19, the mean score of the CACMAS was 115.78±18.81. In another study conducted by Köse et al.(2018) with medical faculty students, the mean score on the scale was 104.72±16.46. In a survey by Kahraman and Kırkan (2020) with pediatric nurses, the mean score of the CACMAS was 112.01±20.07. Our study is similar to the literature in this respect.

The scale's total score was higher in students living alone than in those not living alone. Altay and Keles (2024) found that using complementary medicine was higher in students living alone. It is thought that individuals living alone turn to complementary medicine practices to avoid getting sick and to have a mild course when the disease develops due to the fear of not finding support from their environment in case of illness.

Our study observed that students with poor health perception had higher mean scores on the CACMAS. In the study by Dursun et al.(2019), no relationship was found between health perception and attitude towards TCM. Yıldırım et al.(2018) found that students who perceived their mental health as poor had higher mean TCM attitude scores. In this respect, the study shows that nursing students have confidence in complementary medicine practices and think they are a preferable alternative for their health needs.

This study found that the mean score of the Holistic Balance subscale was higher in women than in men. In the study of Köse et al. (2018) and Özmen et al. (2023), it was also stated that the mean score of the sub-dimension of Holistic Balance was higher in women than in men. Women have benefited from traditional and complementary medicine in cosmetics since ancient times. Again, when the effect of traditional medicine was at the forefront, women tried to treat diseases as healers. For these reasons, women are expected to have a more holistic approach to health than men.

In our study, the sub-dimension of Dissatisfaction with Conventional Medicine was higher in individuals with moderate health perception than those with good health perception. Kol and Mete's (2022) study reported that individuals with moderate health perception were more dissatisfied with modern medicine than those with excellent health perception. In Daştan's (2021) study, no relationship was found between health perception and the CACMAS and its sub-dimensions. Individuals who rate themselves as healthier may be considered to benefit sufficiently from modern medical diagnosis and treatment methods. Individuals whose expectations and needs are not adequately met may perceive that their health is not good and, therefore, modern medicine is inadequate. This may create a feeling of dissatisfaction with modern medicine. In addition, the newness of the disease and the lack of a specific form of treatment in the

early stages of the pandemic may have caused a feeling of distrust towards modern medicine in individuals who do not consider themselves healthy enough.

In our study, it is seen that as the age of the students increases, their dissatisfaction with modern medicine increases. This supports the directly proportional relationship between age and TCM use. Many studies show that TCM use is more common in middle-aged and elderly groups (Onturk Akyuz and Alkan, 2023; Solmaz and Altay, 2019) In Kıskaç's (2024) study, in contrast to our finding, it was determined that the participants' dissatisfaction decreased as their age increased. In parallel with the increase in nursing students' age, the education level increases. Students with an increasing level of education may have higher expectations from modern medicine. When these expectations are not met at the desired level, students may develop distrust towards modern medicine. In Daştan's (2021) study, it was suggested that as the educational level of individuals increases, their expectations from modern medicine and unmet expectations increase dissatisfaction.

In our study, the duration of COVID-19 was found to be 10.78±6.37, and as the duration of the disease increased, their dissatisfaction with modern medicine also increased. There are no similar studies in the literature to support our findings. However, it is thought that the prolonged duration of COVID-19 disease and the uncertainty of the course and treatment of the disease may have directed nursing students to traditional and complementary medicine methods.

Our study concluded that the subscale score of Dissatisfaction with Conventional Medicine was higher in dormitories and those living at home with friends than in those living with their families. The study of Köse et al.(2018) determined that the place where students lived did not affect their dissatisfaction with modern medicine. Students who do not live with their families receive less social support than those who live with their families. Having social support in addition to modern medical treatments positively affects the general condition of people in case of illness. Students who cannot benefit from this effect may have increased dissatisfaction because they cannot regain their health effectively and quickly only with the help of modern medicine.

According to family type, the Dissatisfaction with Conventional Medicine sub-dimension score was higher in students with extended families than in students with nuclear families and single parents. Ergin et al. (2011) found that family type did not affect TCM attitude. Reasons such as the extended family's more traditional structure and the presence of elderly family members may indicate that TCM practices are preferred and the importance attributed to modern medicine has decreased.

A difference was found in the sub-dimension of Dissatisfaction with Conventional Medicine according to the mother's educational level. Our study observed that the scores of students whose mothers were illiterate were higher than those of students whose mothers had a higher level of education. In contrast to our finding, Özmen et al.(2023) study found that the Dissatisfaction with Conventional Medicine sub-dimension score of students whose mothers were university graduates was significantly higher than that of students whose mothers were primary school graduates. It can be expected that illiterate mothers prefer complementary interventions in a more traditional form rather than modern medical interventions. This is due to easier access to complementary therapies and the idea that what is natural is harmless. Considering factors such as the fact that basic and first education is given in the family and that children spend more time with their mothers in our country, it is thought that nursing students adopt their mothers' preferences.

Those who did not comply with the mask use-social distancing rules were found to be more dissatisfied with modern medicine. No study related to this finding was found in the literature. Dissatisfaction with modern medicine may increase the tendency not to follow its rules.

Our study determined that the mean scores of those who had not had COVID-19 in their family and environment were higher than those who had. In Daştan's (2021) study, it was reported that the mean scores of those who had COVID-19 patients in their immediate environment were significantly higher than those who did not. The rapid pandemic may explain this spread and aggressive symptoms. Individuals with the disease and their relatives expect it to be taken under control quickly and recover. The effect of complementary medical treatments may not occur soon at the level patients desire. For this reason, individuals may think that traditional and complementary therapies do not work. Instead of using complementary medical practices, they may turn to modern medical treatments that have a faster effect.

CONCLUSION

Knowing the knowledge and attitudes of nursing students about TCM practices can contribute to their effective and safe use of health services. In this context, it is essential to increase knowledge about TCM in nursing education programs and guide the practices correctly.

In conclusion, global health crises such as COVID-19 once again reveal the importance of TCM practices.

Nursing students' attitudes in this field may pave the way for a more widespread and effective use of TCM in health services in the future. Therefore, it is of great importance to give more attention to TCM in nursing education and to raise students' awareness of this issue.

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