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INVESTIGATION OF THE RELATIONSHIP BETWEEN HEALTH LITERACY AND ATTITUDES TOWARD TRADITIONAL AND COMPLEMENTARY MEDICINE: A CROSS-SECTIONAL STUDY

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Abstract

This study was conducted to determine the relationship between traditional and complementary medicine attitudes and health literacy of nursing students. It is a descriptive cross-sectional study. The sample consisted of 569 nursing students studying at a university in Gaziantep province between May-July 2022. The data obtained from the study were analyzed with SPSS 25.0 package program. Data were collected using the Descriptive Characteristics Form, Traditional and Complementary Medicine Attitude Scale and Health Literacy Scale. Among the students who participated in the study, 27.6% stated that they used a traditional/complementary treatment and 26.9% stated that they benefited from the traditional/complementary treatment they used. It was determined that there was a significant and positive relationship between the traditional and complementary medicine attitude scale scores and health literacy scale scores of the students (p<0.05). As a result of this study, the attitudes of nursing students with high health literacy towards traditional and complementary medicine were also found to be high

Keywords: *Attitude, Health literacy, Nursing students, Traditional and complementary medicine.*

Sağlık Okuryazarlığı ile Geleneksel ve Tamamlayıcı Tıbba Yönelik Tutum Arasındaki İlişkinin İncelenmesi: Kesitsel Çalışma

Öz

Bu araştırma, hemşirelik öğrencilerinin geleneksel ve tamamlayıcı tıp tutumları ile sağlık okuryazarlığı arasındaki ilişkiyi belirlemek amacıyla yapılmıştır. Tanımlayıcı-kesitsel türde bir çalışmadır. Örneklemini Mayıs-Temmuz 2022 tarihleri arasında Gaziantep ilinde bir üniversitede öğrenim gören 569 hemşirelik öğrencisi oluşturdu. Araştırmadan elde edilen veriler SPSS 25.0 paket programı ile analiz edilmiştir. Veriler; Tanıtıcı Özellikler Formu, Geleneksel ve Tamamlayıcı Tıp Tutum Ölçeği ve Sağlık Okuryazarlığı Ölçeği kullanılarak toplanmıştır. Araştırmaya katılan öğrencilerin %27,6'sı geleneksel/tamamlayıcı bir tedavi kullandığını, %26,9'u ise kullandığı geleneksel/tamamlayıcı tedaviden fayda gördüğünü belirtmiştir. Öğrencilerin geleneksel ve tamamlayıcı tıp tutum ölçeği puanları ile sağlık okuryazarlığı ölçeği puanları arasında anlamlı ve pozitif bir ilişki olduğu tespit edilmiştir (p<0.05). Bu çalışma sonucunda, sağlık okuryazarlığı yüksek olan hemşirelik öğrencilerinin geleneksel ve tamamlayıcı tıbba yönelik tutumlarının da yüksek olduğu bulunmuştur.

Anahtar Kelimeler: *Tutum, Sağlık okuryazarlığı, Hemşirelik öğrencileri, Geleneksel ve tamamlayıcı tıp.*

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1. Introduction

The World Health Organization (WHO) differentiated the concepts of complementary and traditional medicine by defining them differently. Traditional medicine is defined as "applications which are used to protect health, prevent, diagnose and treat physical and mental diseases, vary according to cultures, and are based on the beliefs and experiences of societies", while complementary medicine is defined as various health practices that are not part of a country's own tradition or conventional medicine and are not fully integrated into the health system (Kahraman & Kırkan, 2020).

The Department of Traditional and Complementary Medicine Practices in Turkey was established in 2012 under the General Directorate of Health Services of the Ministry of Health (Kahraman & Kırkan, 2020). In addition in the 2013-2017 strategic plan, the authorization and control mechanisms related to practices, practitioners and centers in the legislation of traditional and complementary medicine practices was clarified (Köse et al., 2021). With its legal status, the interest of both healthcare professionals and patients and their relatives in traditional and complementary medicine practices in the healthcare system has increased (Kahraman & Kırkan, 2020).

Health literacy is expressed as accessing services related to the development, protection and improvement of individuals' health, and interpreting and understanding basic information (Peerson and Saunders, 2009). Individuals can be misled on the internet or television channels for commercial purposes and without a scientific basis; however individuals can be informed about traditional and complementary medicine methods and can distinguish the reliability of the information with a high level of health literacy (Köse et al., 2021). In the literature, there are studies investigating the level of knowledge and attitude about health literacy or traditional and complementary medicine practices in nursing students (Akçay & Aktürk, 2010; Bülbül et al., 2009; Kutlu et al., 2009). However there is no study investigating how health literacy affects attitudes towards the use of traditional and complementary medicine in nursing students. For this reason, it is thought that our study will make an important contribution to the literature. This study was conducted to determine the relationship between traditional and complementary medicine attitudes and health literacy of nursing students. The research questions of the study are:

1. What is the intellectual perspective of students towards complementary medicine?
2. What is the level of students' dissatisfaction with modern medicine?
3. What is the level of students' holistic view of health?
4. What are the attitudes of students towards traditional and complementary medicine?
5. What is the functional health literacy level of students?
6. What is the interactive health literacy level of students?
7. What is the critical health literacy level of students?
8. What is the health literacy level of students?
9. What is the relationship between students' health literacy levels and their attitudes toward traditional and complementary medicine?

2. Methods

2.1. Research Design

The study used descriptive and cross-sectional statistics to determine the relationship between nursing students' attitudes toward traditional and complementary medicine and their health literacy. Descriptive statistics is a statistical approach used to calculate values that describe or summarize the characteristics of a data set (Büyüköztürk, 2019). In cross-sectional studies, patients or events are examined at a single point in time (Özhan-Çaparlar & Dönmez, 2016). Cross-sectional studies are advantageous because they are relatively quick to complete (Akan, 2014).

2.2. Population and Sample of the Research

The research was carried out in a state university in Gaziantep between May-July 2022. The population of the research consisted of 1024 nursing students studying in a state university in Gaziantep. Its sample was calculated with the G-power program (α=0.05, 1-β= 0.95, effect size d=0.5), and the sample size was found to be 278 students. In order to strengthen and generalize the results of the research, 569 students were reached in our study. The students volunteering to participate in the study, studying in the nursing department, and speaking Turkish were included in the study.

2.3. Data Collection Tools

2.3.1. Descriptive Characteristics Form

The descriptive characteristics form prepared by the researchers consists of two sections. There are a total of 19 questions on the form. The first section contains 12 questions inquiring about the participants' socio-demographic characteristics, while the second section contains 7 questions inquiring about their knowledge and use of traditional and complementary medicine.

2.3.2. Traditional and Complementary Medicine Attitude Scale (TCMAS)

The validity and reliability of the scale in Turkey was performed by Köse et al. (2018) (Köse et al., 2018). The scale consists of 27 items and 3 sub-dimensions. Items 5,7,9,18,19,21,22,24 constitute the Intellectual Perspective on Complementary Medicine sub-dimension; items 1,4,8,11,14,16,17,20,26,27 constitute the Dissatisfaction with Modern Medicine sub-dimension; and items 2,3,6,10,12,13,15,23,25 constitute the Holistic Approach to Health sub-dimension. Items 1,4,8,9,26 of the scale are reverse coded. The answers were prepared as a 7-point Likert type, ranging from strongly disagree (1) to strongly agree (7). The scale has no cutoff point. As the score obtained from the scale increases, a positive attitude towards traditional and complementary medicine is displayed. The Cronbach's alpha value of the scale is (α=.80) (Köse et al., 2018). In this study it was determined as (α=.89).

2.3.3. Health Literacy Scale (HLS)

The validity and reliability of the scale in Turkey was performed by Türkoğlu and Kılıç (2021) (Türkoğlu & Kılıc, 2021). The scale consists of 14 questions and 3 sub-dimensions. The answers were prepared as a 5-point Likert type, ranging from Strongly Disagree (1) to Strongly Agree (5). A score between 14 and 70 is taken from the scale. An increase in the total score indicates an increase in the level of health literacy. While the Cronbach's alpha value was α=.81 in the original scale, its validity and reliability was α=.85 in the study. In this study, it was found to be (α=.83).

2.4. Data Collection

The data of the research were collected online between May-July 2022. The data collection tools were transferred to Google form, and the link of the research was created. The prepared link was sent to the nursing students via WhatsApp, and the data collection process was continued until the sample size was reached.

2.5. Evaluation of Data

Data analysis was performed using the SPSS 25.0 software package. Categorical variables were presented as frequency distributions (number and percentage), while numerical variables were summarized using descriptive statistics (mean ± standard deviation). To assess normality, the Kolmogorov–Smirnov test statistics and p-values, as well as skewness and kurtosis coefficients, were examined for both the total scale scores and their subdimensions. Data were considered normally distributed, as the p-values exceeded 0.05 and the skewness and kurtosis coefficients fell within the ±2 range. One-way ANOVA was applied to compare numerical variables across groups, and the Shapiro–Wilk test was used to further assess normality. The Independent Samples t-test was employed to determine differences between the means of two independent groups. Additionally, Pearson correlation analysis was conducted to examine the relationship between two numerical variables. A significance level of $p<0.05$ was considered for all statistical tests.

2.6. Ethical Aspect of the Research

In order to conduct the research, institutional permission was obtained from the Ethics Committee of Tarsus University (Number of Decision: 2022/36) and from the university where the study was conducted (2022/E-41012502-605-851). The purpose of the research was explained to the students participating in the research, and their consent was obtained. The study was carried out in accordance with the principles of the Declaration of Helsinki.

3. Results

Table 1

Comparison of Descriptive Characteristics

Descriptive Characteristics (n=569)	**n**	**%**
Age		
18	27	4.7
19	104	18.3
20	144	25.3
21 and above	294	51.7
Gender		
Male	109	19.2
Female	460	80.8
Place of Residence		
City Center	235	41.3
District	135	23.7
Metropolitan city	127	22.3
Village	72	12.7
Maternal Education		
Literate	59	10.4
Primary School	298	52.4
High School	88	15.5
Undergraduate and Postgraduate	47	8.3
Illiterate	77	13.5
Paternal Education		
Literate	36	6.3
Primary School	293	51.9
High School	145	25.5
Undergraduate and Postgraduate	82	14.4
Illiterate	13	2.3
Mother's Occupation		
Not Employed	520	91.4
Civil Servant	22	3.9
Worker	27	4.7
Father's **Occupation**		
Not Employed	70	12.3
Civil Servant	123	21.6

Worker	376	66.1
Grade		
1. grade	216	38.0
2. grade	164	28.8
3. grade	113	19.9
4. grade	76	13.4
Chronic Disease		
Yes	44	7.7
No	525	92.3
Regularly Used Medication		
Yes	37	6.5
No	532	93.5
Smoking Status		
Yes	74	13
No	495	87
Benefiting from health services comfortably when needed		
Yes	290	51.0
No	75	13.2
Partially	204	35.8
Knowledge of traditional and complementary medicine		
Yes	173	30.4
No	136	23.9
Partially	260	45.7
Sources for learning information about traditional and complementary medicine**		
Friends	148	26
University	126	22.1
Other***	295	51.8
Knowledge of practices		
Acupuncture	136	23.9
Leech therapy	120	21.1
Music therapy	143	25.1
Other****	170	29.9
Using traditional and complementary medicine practices		
Yes	157	27.6
No	412	72.4
Preference for Complementary and Alternative Medicine		
No	357	62.8
Acupuncture	34	6
Leech therapy	31	5.4
Music therapy	99	17.4
Other****	48	8.4
Preferred Practice for Future Use		

No	273	48
Acupuncture	79	13.9
Leech therapy	22	3.9
Music therapy	112	19.7
Other****	83	14.6
Perceived Benefit from the Practices Used		
Yes	153	26.9
No	250	43.9
Partially	166	29.2

51.7% of the participants were over 21 years old; 80.8% were women; 41.3% lived in the city center; 38.0% were first-year nursing students; and 92.3% had no chronic disease. 51.0% benefitted from health services easily when they needed it; 30.4% had knowledge about traditional and complementary medicine; 45% learned about traditional and complementary medicine from the internet; 23.9% had information about acupuncture; and 27.6% used traditional and complementary medicine practices **(Table 1)**. Moreover 52.4%'s mothers and 51.9%'s fathers were primary school graduates; 91.4%'s mothers were not working; and 66.1%'s fathers were workers. 93.5% of the participants did not use medicine constantly; 87.0% did not smoke; 19.7% wanted to use music therapy in the future; and 29.2% partially benefitted from the traditional and complementary medicine practices they used **(Table 1)**.

Table 2

Comparison of Descriptive Characteristics with the Traditional and Complementary Medicine Attitude Scale and Sub-Dimensions

Descriptive Characteristics (n=569)	**n (%)**	**Traditional and Complementary Medicine Attitude Scale**			
		Intellectual Perspective on Complementary Medicine Mean±SD	**Dissatisfaction with Modern Medicine Mean±SD**	**Holistic Approach to Health Mean±SD**	**Total Mean±SD**
Age					
18	27(4.7)	34.33±9.20	41.22±9.81	43.29±11.11	118.85±27.02
19	104(18.3)	32.96±8.24	39.99±8.76	42.33±8.96	115.28±21.90
20	144(25.3)	32.36±8.61	38.64±8.03	44.21±9.70	115.22±21.10
21 and above	294(51.7)	32.73±8.47	39.62±8.98	44.69±9.62	117.05±22.64
Statistical analysis (F/p)		0.434/0.729	0.934/0.424	1.607/0.187	0.410/0.746
Gender					
Male	109(19.2)	36.12±8.30	43.46±9.71	45.91±9.65	125.51±23.88
Female	460(80.8)	31.95±8.34	38.58±8.24	43.63±9.57	114.18±21.39
Statistical analysis (t/p)		**-4.696/0.000***	**-4.849/0.000***	**2.233/0.026***	**-4.860/0.000***
Place of Residence					
City Center	235(41.3)	32.61±8.22	39.62±8.81	43.48±9.37	115,72±22.07
District	135(23.7)	33.71±8.72	39.49±9.18	44.82±9.70	118,04±23.22
Metropolitan city	127(22.3)	32.77±8.55	39.72±8.56	44.24±9.81	116,74±22.90
Village	72 (12.7)	31.38±8.73	38.87±8.15	44.27±9.99	114,54±20.47
Statistical analysis (F/p)		1.224/0.300	0.164/0.920	0.594/0.619	0.489/0.690
Grade					

1. grade	216 (38.0)	33.23±8.45	40.78±9.70	42.24±9.79	116.26±24.38
2. grade	164(28.8)	33.02±7.67	39.37±7.35	45.22±9.38	117.62±19.53
3. grade	113(19.9)	31.34±8.77	38.18±8.00	45.73±8.20	115.26±19.44
4. grade	76(13.4)	32.93±9.70	38.22±9.38	44.31±10.83	115.47±25.83
Statistical analysis (F/p)		1.334/0.262	**2.985/0.031***	**4.608/0.003***	0.307/0.820
Chronic Disease					
Yes	44(7.7)	32.70±9.30	40.68±10.68	41.95±10.78	14.15±6.60
No	525(92.3)	32.76±8.42	39.42±8.58	44.25±9.50	14.34±6.22
Statistical analysis (t/p)		-0.043/0.966	0.915/0.361	-1.523/0.128	-0.313/0.754
Benefiting from health services comfortably when needed					
Yes	290(51.0)	33.50±8.72	39.94±8.85	45.59±9.31	119.03±21.71
No	75(13.2)	31.74±7.30	38.64±8.37	40.46±10.40	110.85±22.54
Partially	204(35.8)	32.07±8.49	39.24±8.74	43.24±9.34	114.55±22.64
Statistical analysis (F/p)		2.314/0.100	0.821/0.441	**9.956/0.000***	**5.107/0.006***
Knowledge of traditional and complementary medicine					
Yes	173(30.4)	34.64±9.15	40.29±9.60	45.63±9.71	120.56±23.57
No	136(23.9)	31.39±8.11	38.98±8.67	41.72±10.00	112.11±22.72
Partially	260(45.7)	32.21±8.02	39.28±8.18	44.26±9.14	115.76±20.80
Statistical analysis (F/p)		**6.668/0.001***	1.023/0.360	**6.479/0.002***	**5.722/0.003***
Sources for learning information about traditional and complementary medicine**					
Friends	148(26)	31.72±8.20	39.04±8.12	43.70±9.24	114.47±20.62
University	126(22.1)	33.53±8.76	39.84±9.79	45.80±9.39	119.19±23.30
Other***	295(51.8)	32.93±8.48	39.62±8.60	43.51±9.84	116.08±22.66
Statistical analysis (F/p)		1.691/0.185	0.328/0.720	2.669/0.070	1.564/0.210
Knowledge of practices					
Acupuncture	136(23.9)	32.58±9.02	39.10±8.20	46.71±10.22	118.39±21.63
Leech therapy	120(21.1)	31.70±9.17	38.18±8.90	44.42±9.33	114.31±22.85
Music therapy	143(25.1)	34.13±7.85	41.13±8.72	43.37±8.64	118.65±21.36
Other****	170(29.9)	32.47±7.97	39.44±8.95	42.30±9.70	114.22±23.10
Statistical analysis (F/p)		1.967/0.118	**2.682/0.046***	**5.783/0.001***	1.741/0.158
Using traditional and complementary medicine practices					
Yes	157(27.6)	35.74±8.08	40.70±9.12	45.31±10.27	121.76±22.93
No	412(72.4)	31.61±8.37	39.07±8.57	43.59±9.32	114.29±21.75
Statistical analysis (t/p)		**5.305/0.000***	1.988/0.047	1.909/0.057	**3.607/0.000***
X ± SS (Min-Max)		32.75±8.48 (8-56)	39.52±8.75 (10-70)	44.07±9.62 (9-63)	116.35±22.31 (28-189)

***Correlation is significant at the 0.05 level (2-tailed) **More than one option ticked. *** Television/Book/Magazine and Newspapers/Health Staff/University. ****Apitherapy/Phytotherapy/Hypnosis/Homeopathy/Chiropractic/Cupping/larval/Mesotherapy/Prolotherapy/ osteopathy/Ozone/reflexology. p<0,05**

The mean score of the Intellectual Perspective on Complementary Medicine sub-dimension was significantly higher in the male nursing students (36.12±8.30), in those who had knowledge about traditional and complementary medicine (34.64±9.15), in those who learned about traditional and complementary medicine from other sources (36.24±8.55), and in those who used traditional and

complementary medicine (35.74±8.08) (p<0.05) **(Table 2)**. The means score of the Dissatisfaction with Modern Medicine sub-dimension was significantly higher in the male students (43.46±9.71), in the first-year nursing students (40.78±9.70), and in those who learned about music therapy (41.13±8.72) (p<0.05) **(Table 2)**. The mean score of the Holistic Approach to Health sub-dimension was significantly higher in the male students (45.91±9.65), in the third-year nursing students (45.73±8.20), in those who used health services comfortably when they needed it (45.59±9.31), in those who had knowledge about traditional and complementary medicine (45.63±9.71), and in those who had knowledge about acupuncture (46.71±10.22) (p<0.05) **(Table 2)**. The total score of the Traditional and Complementary Medicine Attitude Scale was significantly higher in the male nursing students (125.51±23.88), in those who easily benefitted from health services when they needed it (119.03±21.71), in those who had knowledge about traditional and complementary medicine (120.56±23.57), in those who learned about traditional and complementary medicine from other sources (123.10±25.51), and in those who used traditional and complementary medicine practices (121.76±22.93) (p<0.05) **(Table 2)**. The score of the Intellectual Perspective on Complementary Medicine sub-dimension was32.75±8.48; the score of the Dissatisfaction with Modern Medicine sub-dimension was 39.52±8.75; the score of the Holistic Approach to Health sub-dimension was 44.07±9.62; and the total score of the Traditional and Complementary Medicine Attitude Scale was 116.35±22.31 **(Table 2).**

Table 3

Comparison of Descriptive Characteristics with the Health Literacy Scale and Sub-Dimensions

Descriptive Characteristics (n=569)	**n (%)**	**Health Literacy Scale**			
		Functional Health Literacy Mean±SD	**Interactive Health Literacy Mean±SD**	**Critical Health Literacy Mean±SD**	**Total Mean±SD**
Age					
18	27(4.7)	11.40±4.95	19.59±3.92	15.55±3.38	46.55±6.93
19	104(18.3)	13.77±6.23	19.37±5.04	16.22±3.87	49.37±9.24
20	144(25.3)	14.47±6.09	20.26±4.32	16.35±3.69	51.09±8.52
21 and above	294(51.7)	14.72±6.38	20.34±4.95	16.26±3.98	51.32±9.85
Statistical analysis (F/p)		0.410/0.746	1.204/0.307	0.327/0.806	3.026/0.029
Gender					
Male	109(19.2)	14.46±6.60	19.88±4.79	16.10±4.75	50.44±9.17
Female	460(80.8)	14.30±6.17	20.16±4.77	16.27±3.82	50.74±9.40
Statistical analysis (t/p)		-0.249/0.804	0.554/0.580	0.431/0.667	0.295/0.768
Place of Residence					
City Center	235(41.3)	14.23±6.06	20.19±4.62	16.31±3.69	50.74±9.41
District	135(23.7)	14.04±6.17	19.92±4.89	16.06±3.78	50.03±9.28
Metropolitan city	127(22.3)	14.78±6.59	20.48±4.96	16.59±4.12	51.85±9.40
Village	72 (12.7)	14.40±6.49	19.52±4.73	15.73±4.06	49.66±9.13
Statistical analysis (F/p)		0.341/0.796	0.699/0.553	0.876/0.453	1.171/0.320
Grade					
1. grade	216 (38.0)	12.84±5.74	19.92±4.76	16.22±3.90	48.99±8.19
2. grade	164(28.8)	15.39±6.35	19.93±4.59	15.97±3.72	51.29±9.34
3. grade	113(19.9)	14.90±6.34	20.69±5.06	16.91±3.58	52.50±9.97
4. grade	76(13.4)	15.44±6.57	20.14±4.88	15.89±4.35	51.48±10.80
Statistical analysis (F/p)		**6.982/0.000***	0.738/0.530	1.602/0.188	**4.283/0.005***

Chronic Disease					
Yes	44(7.7)	19.56±5.71	16.27±3.82	50.00±8.55	115.34±27.08
No	525(92.3)	20.15±4.69	16.24±3.87	50.74±9.42	116.43±21.90
Statistical analysis (t/p)		-0.193/0.847	0.781/0.435	0.051/0.960	-0.507/0.612
Benefiting from health services comfortably when needed					
Yes	290(51.0)	15.03±6.50	20.33±4.99	16.22±4.15	51.58±10.01
No	75(13.2)	11.72±6.00	20.26±4.68	15.85±4.40	47.84±8.35
Partially	204(35.8)	14.30±5.73	19.73±4.49	16.41±3.15	50.45±8.50
Statistical analysis (F/p)		**8.578/0.000***	0.978/0.377	0.590/0.555	**4.946/0.007***
Knowledge of traditional and complementary medicine					
Yes	173(30.4)	15.39±6.85	20.17±5.12	16.55±3.92	52.12±10.08
No	136(23.9)	12.22±5.28	20.16±4.35	16.52±3.42	48.90±7.62
Partially	260(45.7)	14.73±6.05	20.03±4.76	15.89±4.01	50.66±9.53
Statistical analysis (F/p)		**11.165/0.000***	0.052/0.949	1.996/0.137	**4.563/0.011***
Sources for learning information about traditional and complementary medicine**					
Friends	148(26)	13.91±6.39	19.62±4.91	16.10±3.83	49.65±9.51
University	126(22.1)	15.02±6.11	20.47±4.65	16.39±3.46	51.89±9.53
Other***	295(51.8)	14.24±6.23	20.19±4.75	16.24±4.04	50.68±9.16
Statistical analysis (F/p)		1.121/0.327	1.167/0.312	0.190/0.827	1.961/0.142
Knowledge of practices					
Acupuncture	136(23.9)	14.91±6.76	20.56±4.97	16.37±4.12	51.85±10.30
Leech therapy	120(21.1)	15.40±6.32	19.65±4.52	16.07±3.71	51.13±8.91
Music therapy	143(25.1)	13.51±5.97	20.20±4.65	16.14±3.86	48.86±8.71
Other****	170(29.9)	13.81±5.92	19.97±4.89	16.34±3.77	50.12±9.34
Statistical analysis (F/p)		**2.797/0.040***	0.835/0.475	0.194/0.901	1.366/0.252
Using traditional and complementary medicine practices					
Yes	157(27.6)	14.20±6.67	20.33±4.89	16.57±3.98	51.10±9.60
No	412(72.4)	14.38±6.09	20.02±4.73	16.13±3.81	50.52±9.25
Statistical analysis (t/p)		-0.294/0.769	0.685/0.494	1.254/0.210	0.663/0.508
X ± SS (Min-Max)		14.33±6.25 (5-25)	20.10±4.77 (5-25)	16.24±3.86 (4-20)	50.68±9.35 (17-70)

Correlation is significant at the 0.05 level (2-tailed)** ****More than one option ticked.** ** **Television/Book/Magazine and Newspapers/Health Staff/University.**

****** **Apitherapy/Phytotherapy/Hypnosis/Homeopathy/Chiropractic/Cupping/larval/Mesotherapy/Prolotherapy/ osteopathy/Ozone/reflexology. p<0,05**

The means score of the Functional Health Literacy sub-dimension was significantly higher in the fourth-year nursing students (15.44±6.57), in those who comfortably benefitted from health services when they needed it (15.03±6.50), in those who had knowledge about traditional and complementary medicine (15.39±6.85), and in those who had knowledge about leech therapy (15.40±6.32) ($p<0.05$) **(Table 3)**. The total score of the Health Literacy Scale was significantly higher in the third-year nursing students (52.50±9.97), in those who comfortably benefitted from health services when they needed it (51.58±10.01), and in those who had knowledge about traditional and complementary medicine (52.12±10.08) ($p<0.05$) **(Table 3)**. The score of the Functional Health Literacy sub-dimension was 14.33±6.25; the score of the Interactive Health Literacy sub-dimension was 20.10±4.77; the score of the

Critical Health Literacy sub-dimension was 16.24±3.86; and the total score of the Health Literacy Scale was 50.68±9.35 **(Table 3)**.

Table 4

Relationship Between Scales and Sub-Dimensions

Scales and Sub-Dimensions	1	2	3	4	5	6	7	8
1.Intellectual Perspective on Complementary Medicine	1.000	0.699	0.505	**0.872***	**0.963***	**0.858***	0.568	**0.767***
2. Dissatisfaction with Modern Medicine		1.000	0.419	**0.839***	0.698	0.246	0.239	0.181
3. Holistic Approach to Health			1.000	**0.787***	0.270	0.655	**0.721***	0.177
4. Traditional and Complementary Medicine Attitude Scale				1.000	0.109	0.562	**0.928***	0.159
5. Functional Health Literacy					1.000	-0.149	-0.141	0.534
6. Interactive Health Literacy						1.000	**0.712***	**0.705***
7. Critical Health Literacy							1.000	0.683
8. Health Literacy Scale								1.000

***Correlation is significant at the 0.05 level (2-tailed)**

There is a positive and high relationship between the Intellectual View of Complementary Medicine sub-dimension score and the Traditional and Complementary Medicine Attitude Scale total score (r=0.872), the Interactive Health Literacy sub-dimension score (r=0.858), and the Health Literacy Scale total score (r=0.767). There is a positive and highly significant relationship between the Functional Health Literacy subscale score (r=0.963) (p<0.05) **(Table 4)**. There was a positive and highly significant correlation between the Dissatisfaction with Modern Medicine sub-dimension score and the Traditional and Complementary Medicine Attitude Scale total score (r=0.839) (p<0.05) **(Table 4)**. There was a positive and highly significant correlation between the Holistic Approach to Health sub-dimension score and the Traditional and Complementary Medicine Attitude Scale total score (r=0.787), and the Critical Health Literacy sub-dimension score (r=0.721) (p<0, 05) **(Table 4)**. There was a positive and highly significant relationship between the Traditional and Complementary Medicine Attitude Scale total score and the Critical Health Literacy sub-dimension score (r=0.928) (p<0.05) **(Table 4)**. There was a positive and highly significant relationship between the Interactive Health Literacy sub-dimension score and the Critical Health Literacy sub-dimension score (r=0.712), and the Health Literacy Scale total score (r=0.705) (p<0.05) **(Table 4)**.

4. Conclusion, Discussion and Suggestions

Traditional and complementary health practices, which have an important place in health care, constitute a situation which should be well known by health professionals and about which their awareness levels should be increased. The knowledge level of health professionals, who play a major role in the treatment and care processes of patients, about traditional and complementary medicine practices is important in terms of providing accurate information to patients. The reason for the use of traditional medicine methods in society is mostly due to the belief that "what is natural will be harmless" (Jaiswal et al., 2015).

In the study, 92.3% of the students stated that they did not have any chronic disease, and 93.5% stated that they did not take medication continuously. In the study of Köktürk-Dalcalı and Taş (2021), the majority of which consisted of students from the faculty of health sciences, it was found that 86.4% of students did not have a health problem and that 89.1% did not have a medication that they used regularly (Köktürk-Dalcalı & Taş, 2021). Individuals who will work in health-related places need to increase their level of knowledge on the subject by obtaining the safety and effectiveness of

complementary medicine practices from reliable information sources (Dehghan & Mahlagha et al., 2023; Trail-Mahan et al., 2013). The training that nursing students receive on complementary medicine practices during their undergraduate education is important in terms of being able to answer patients' questions in patient care (Trail-Mahan et al., 2013). In the study, 51% of the students stated that they benefited from health services when needed, that 30.4% had knowledge about traditional/complementary medicine, that 45% obtained information from the internet, and that 23.9% stated had information about acupuncture. It was determined that the level of knowledge of the students about traditional/complementary medicine was low or moderate, and in studies similar to our study, it was determined that the level of knowledge of individuals who would work in the field of health was low (Çevik et al., 2016).

Our study is similar to studies in which the internet is the first source of information on complementary therapies (Altan et al., 2014; Sarımehmet et al., 2020; Solmaz & Altay, 2019; Sönmez et al., 2018; Şahin et al., 2019). As a result of a study conducted in the USA, it was stated that the first source of information for students studying in the field of health was the internet (Lie & Boker, 2006). In a study conducted with medical school students in Germany, it was determined that students benefited from their own experiences to obtain information and then from media, publications, congresses and information obtained during medical education (Münstedt et al., 2011). In the study conducted by Ilgaz and Gözüm (2016), it was emphasized that increasing the level of health literacy would enable students to use the right application (Ilgaz & Gözüm, 2016). In another study, which gave different results than our research, it was found that 54.4% of students obtained information about complementary therapies from written/visual media, that 71.8% did not use any complementary treatment method, that herbal treatments were the most preferred complementary treatment method, and that yoga was followed by 10.9% (Köktürk-Dalcalı & Taş, 2021). In the study of Köse et al. (2021), it was stated that 74.8% of students had an idea about acupuncture, and in the study of Şenol et al. (2020), 92.1% of students frequently had an idea about the cupping method (Köse et al., 2021; Şenol et al., 2020).

27.6% of the students participating in the study used traditional/complementary therapy, 17.4% used music therapy, 26.9% benefited from the traditional/complementary treatment they used, and 13.9% would like to use the acupuncture treatment in the future. In the study of Baltacı and Koç (2018), it was stated that students had positive attitudes towards traditional/complementary treatments (Baltacı and Koç, 2018). When other studies were examined in terms of the most known methods, it was stated that herbal therapy and massage were known, unlike our study (Altan et al., 2014; Kazanç & Karagözoğlu, 2025; Sarımehmet et al., 2020). In the study conducted on nurses in Iran, 52.2% of them tried herbal treatment and 24.8% of them tried yoga at least once regarding the methods used (Balouchi et al., 2016). In Aktaş (2017)'s study on nursing students, it was determined that 50.2% of students had never used complementary and therapeutic methods before, that 19.5% used it once, and that 30.3% used it more than once (Aktaş, 2017). In the study of Ayraler et al. (2020) on medical students, approximately half of them thought positively about traditional and complementary medicine practices and had the idea that they could complement each other when used together with classical medicine (Ayraler et al., 2020). In the findings of the study, it was determined that the written and visual media were among the primary sources of information about complementary therapies for the students. The reason for this may be that these instruments are easy, fast and cost-effective to reach with the developments in technology. In addition today's generation Z, who actively uses social media and the internet, is expected to consult these resources for information on complementary therapies.

In the study, it was determined that there was a positive and moderate relationship between the gender of the nursing students and the total scores obtained from the Traditional and Complementary Medicine Attitude Scale and all its sub-dimensions (Intellectual Perspective on Complementary

Medicine, Dissatisfaction with Modern Medicine, Holistic Approach to Health). Similarly, in the study conducted by Köse et al. (2021), it was found that the scores of female students from the Traditional and Complementary Medicine Attitude Scale were significantly and highly correlated with the scores of male students (Köse et al., 2021). The difference in this situation may be due to the fact that the rate of use of applications by women is higher than that of men due to environmental effects.

In the study, it was found that there was no statistically significant difference between the gender of the nursing students and the total scores obtained from the Health Literacy Scale and its sub-dimensions (Functional Health Literacy, Interactive Health Literacy and Critical Health Literacy). When different studies were examined, it was determined that the health literacy level of female students was higher than that of male students (Akcilek, 2017; Güven et al., 2018; Değirmenci & Atan, 2025). When the literature was examined, it was seen that there were different results from our study. It is stated that health literacy is affected by the gender factor, and that its effect on women's health behaviors will be significant in terms of public health promotion strategies (Güven et al., 2018). Unlike other studies, the health literacy score of male students was found to be higher in the study conducted with health science students (Dashti et al., 2017).

People with high health awareness and sensitivity are more likely to seek health information, stay away from wrong and unnecessary products or treatments, approach health-related issues more sensitively, be aware of health-promoting behaviors, and include them in their future (Güven et al., 2018; Kökhan & Biçer, 2025) In this study, according to the one-way analysis of variance between the grade levels and the traditional and complementary medicine attitude scale and its sub-dimensions, there was no significant difference between the Intellectual Perspective on Complementary Medicine sub-dimension and the traditional and complementary medicine attitude scale, whereas a significant difference was found between the sub-dimensions of Dissatisfaction with Modern Medicine and Holistic Approach to Health.

According to the one-way analysis of variance performed to compare the grade levels and the health literacy scale, a statistically significant difference was found between the functional health literacy scores and the health literacy total scores. In their study, Çınar et al. (2016) stated that there was a significant difference between grade levels and traditional and complementary medicine approaches (Cınar et al., 2016). Sarımehmet et al. (2020) found that first-year students found complementary therapy practices more effective and beneficial than second-year students. It is thought that this result may be due to the decrease in belief in the effectiveness and benefit of complementary therapy practices as the level of education increases (Sarımehmet et al., 2020). The studies carried out are similar to the results of this research. In a study conducted by Ergün (2017) with students studying in the midwifery field, the health literacy score of fourth grade students was found to be higher (Ergün, 2017). This situation can be explained by the level of education that students receive in undergraduate and the increase in students' awareness levels. A statistically significant difference was found between the students who participated in the study in terms of benefiting from health services when needed it, and their functional health literacy, health literacy scale, traditional and complementary medicine attitude scale, and holistic approach to health scores. In different studies, traditional and complementary medicine was used for treatment and support purposes to reduce the side effects of diseases (Tuna, 2021).

In the study, a statistically significant difference was found between the students' knowledge about traditional and complementary medicine and the total scores of the health literacy scale and its sub-dimension functional health literacy. At the same time, it was determined that there was a significant and positive relationship between the scores of the students in the traditional and complementary medicine attitude scale and the health literacy scale. Similar to our study, there are studies showing that traditional and complementary practices increase as health literacy increases (Buran & Yüksel-Kaçan,

2023; Alır-Derbent et al., 2024). Unlike in the study of Dursun et al. (2019), a weak negative correlation was found between health literacy and traditional and complementary medicine practices. As the health literacy score increases, the score obtained from the traditional and complementary medicine attitude scale decreases (Dursun et al., 2019).

As a result of this study, the traditional and complementary medicine attitudes of the nursing students with high health literacy were also found to be high. In line with this result, increasing the health literacy of students on the subject will have a positive and beneficial effect on traditional and complementary medicine attitudes. Traditional and complementary medicine attitudes differ between men and women. It was determined that the place of residence had no effect on health literacy and traditional and complementary medicine attitudes. Benefiting from health services is affected by the traditional and complementary medicine attitudes and health literacy status of individuals. Increasing the level of health literacy can be a preventive measure in preventing the use of traditional and complementary medicine methods whose effectiveness has not been proven. It is important to organize programs and trainings to inplementarycrease the awareness of nurses who will work in this field in order to improve public health. It was determined that it was due to the high level of health literacy of those who had knowledge about traditional and complementary medicine. The source of information about traditional and com medicine affects the attitudes of individuals. The obtained results emphasize that the importance of traditional and complementary health practices, which have an important place in health care, should be well known by health professionals in order to increase their awareness levels.

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