

# Analysis of Health Care Personnel's Attitudes Toward Complementary and Alternative Medicine and Life Satisfaction due to COVID-19 Pandemic

■ Neslihan Teke, PhD ■ Zülfünaz Özer, PhD ■ Gülcan Bahçecioğlu Turan, PhD

This study was conducted to analyze health care personnel's attitudes toward traditional and complementary medicine (TCM) and life satisfaction due to coronavirus disease-2019 (COVID-19) pandemic. This cross-sectional descriptive study was conducted between April 2 and 9, 2020. The Questionnaire form was sent to health care personnel online. A total of 560 individuals who answered the questionnaires were included in the study. The data were collected by using the Personal Information Form, Holistic Complementary and Alternative Medicine Questionnaire (HCAMQ), and Life Satisfaction Scale (LSS). Average age of the participants was  $30.88 \pm 7.68$  years, 82.5% were male, and 65.5% were working as nurses. It was found that 45.5% of the participants used TCM methods for COVID-19 during the last month; 48.7% of the health care personnel stated that they used TCM methods to strengthen their immune system. The HCAMQ total average score was  $27.96 \pm 5.49$ ; the holistic health subdimension total average score was  $9.59 \pm 3.04$ ; the complementary and alternative medicine subdimension total average score was  $18.37 \pm 3.58$ ; and the LSS total average score was  $20.78 \pm 6.32$ . A positive weak statistically significant association was found between the HCAMQ and complementary and alternative medicine subdimension and the LSS ( $P < .05$ ). Participants had moderately positive attitudes toward TCM and life satisfaction. As the participants' positive attitudes toward TCM increased, their life satisfaction was also found to increase. **KEY WORDS:** COVID-19, health care personnel, life satisfaction, traditional and complementary medicine *Holist Nurs Pract* 2021;35(2):98–107

## INTRODUCTION

Pneumonia cases with unknown causes were reported by the World Health Organization (WHO) in Wuhan City, China, on December 31, 2019. Chinese authorities defined the causes of the cases as a novel

coronavirus.<sup>1</sup> Coronavirus disease-2019 (COVID-19), which spread to the world and caused “pandemic,” became a very urgent health problem.<sup>2</sup> It has been reported that 81% of COVID-19 cases had asymptomatic clinical picture (no pneumonia/mild pneumonia), 14% had severe disease (eg, dyspnea, hypoxia, or >50% lung involvement in images within 24–48 hours), and 5% had critical disease (eg, respiratory failure, shock, or multiorgan dysfunction) picture.<sup>3</sup> It has been reported that, at the onset of the disease, the main symptoms are fatigue, fever, dry cough, myalgia, and dyspnea, while less common symptoms are nasal congestion, headache, runny nose, sore throat, vomiting, and diarrhea. Severe cases generally have dyspnea and/or hypoxemia 1 week after onset and later they have septic shock and acute respiratory distress syndrome.<sup>4</sup> The epidemic was first detected on March 10, 2020, in Turkey and as of May 27, 2020, 1 894 650 individuals were tested (polymerized chain reaction method), COVID-19 was

**Author Affiliations:** Faculty of Health Sciences, Istanbul Sabahattin Zaim University, Istanbul, Turkey (Drs Teke and Özer); and Faculty of Health Sciences, Firat University, Elazığ, Turkey (Dr Bahçecioğlu Turan).

Drs Teke, Bahçecioğlu Turan, and Özer were involved in the initial conception of the study and conducted the interviews. Drs Özer and Teke analyzed the data. All authors interpreted the data. All authors reviewed, revised, and edited the article. All authors read and approved the final manuscript submitted for publication.

The authors are grateful to all participants who agreed to participate voluntarily in this study.

The authors have disclosed that they have no significant relationships with, or financial interest in, any commercial companies pertaining to this article.

**Correspondence:** Neslihan Teke, PhD, Faculty of Health Sciences, Istanbul Sabahattin Zaim University, Halkalı Cad. No 2, PK 34303, Halkalı, Küçükçekmece, Istanbul, Turkey (neslihannteke@gmail.com).

DOI: 10.1097/HNP.0000000000000431

found in 159 797 individuals, and the number of patients who lost their lives was reported as 2.77%.<sup>2</sup>

Health care personnel are at the forefront fighting against COVID-19 infection. While efforts are continuing to treat the existing patients and to prevent the spread of the virus on the one hand; new information is acquired, scientific studies are conducted, and approaches are frequently updated on the other hand. Infectious disease factors are among important factors that can pose a threat to health care personnel. Infectious diseases are the most common occupational death causes among the health care personnel.<sup>5</sup> Health care personnel need to use protective equipment (gloves, mask, apron, gown, and goggles) while providing care to patients diagnosed with COVID-19. It is important to support the immunity of health care personnel in addition to personal protective equipment to protect from the infection.<sup>6</sup> Health care personnel are exposed to both physical and psychological stress as a response to this serious infectious public health event.<sup>7,8</sup> In the fight against this very serious epidemic disease, health care personnel are physically exhausted in addition to suffering psychologically. They experience emotions such as desperation, anxiety, and fear because it is not known when this extraordinary situation will end and they are in the highest risk group for COVID-19 infection.<sup>8</sup> It is thought that this situation has a negative effect on individuals' immune system and life satisfaction.

Life satisfaction is defined as the situation or result that occurs as a result of the comparison between what individuals want and what they have. Life satisfaction is not satisfaction about a specific situation, but it expresses the state of well-being from different aspects such as satisfaction, happiness, and morale in the life in general.<sup>9</sup>

In Turkey, traditional and complementary medicine (TCM) practices are recommended in media tools such as television and newspapers and also through social media to protect from COVID-19 infection and to strengthen the immune system. According to the WHO, traditional medicine is expressed as the complement of knowledge, skills, and practices that can or cannot be explained based on theories, beliefs, and experiences specific for different cultures used in maintaining health in addition to protecting from physical and mental diseases, diagnosing, healing, or treating these diseases, and it is stated that it has a long history.<sup>10</sup> Complementary medicine is explained

as health care practices which are not a part of the culture of that country's traditional medicine and which are not fully integrated to the dominant health system.<sup>11</sup> Today, most people apply TCM methods to protect and develop human health, to prevent diseases from occurring, and to treat diseases.<sup>12,13</sup> One of the most important reasons for the increase in TCM is the perception that these practices do not harm on the health of individuals using them.<sup>14</sup> Individuals' desire to increase the quality of daily life, their desire to have personal development, and a strong psychological structure by avoiding nervousness and loss of control have been reported as significant factors that affect the use of TCM methods.<sup>15</sup> During the COVID-19 pandemic, taking precautions to support the immune system without getting sick is important in terms of decreasing the existing risks.<sup>16</sup>

In light of this information, TCM practices used by health care personnel during the COVID-19 pandemic, health care personnel's attitudes toward TCM, and their life satisfaction were analyzed.

## METHODS

### Setting and characteristics of the study

This descriptive and cross-sectional study was conducted to examine the attitudes of health care personnel toward TCM and their life satisfaction due to the COVID-19 pandemic.

### Data collation procedure

The study was carried out between April 2 and 9, 2020. Data collection forms, which were prepared with the Google Docs program, were sent online to health personnel working in hospitals in Turkey (nurses, doctors, dentists, medical technicians, midwives, dieticians, and physiotherapists) and they were asked to complete the forms. Health personnel who were Turkish citizens, those who were actively looking after patients in hospitals, and those who volunteered to participate were included in the study. Announcements were made to the participants via social media (WhatsApp and Facebook) designed to share information. A total of 560 individuals who answered the questionnaires were included in the study. Before the study, informed consent was obtained from the participants through electronic mail.

## Data collection instruments

The data were collected online by researchers by using the Personal Information Form, Holistic Complementary and Alternative Medicine Questionnaire (HCAMQ), and Life Satisfaction Scale (LSS).

### *Personal Information Form*

The form, which was created by the researchers, consists of 16 questions about the sociodemographic characteristics of the participants and TCM use.

### *Holistic Complementary and Alternative Medicine Questionnaire*

It was developed by Hyland et al<sup>17</sup> to identify the attitudes of individuals toward TCM.<sup>17</sup> It was tested for Turkish validity and reliability by Erci.<sup>18</sup> The scale consists of 11 items and it is a 6-point Likert-type scale. The scale has 2 subdimensions as complementary and alternative medicine (items 2, 4, 6, 8, 9, and 11) and holistic health (items 1, 3, 5, 7, and 10). The scores taken from each item of the scale range between 1 and 6, while the total score ranges between 11 and 66. Low scores taken from the scale show positive attitude toward TCM. The Cronbach  $\alpha$  coefficient of the scale was found to be 0.72.<sup>18</sup> In this study, the Cronbach  $\alpha$  coefficient of the scale was found to be 0.60.

### *Life Satisfaction Scale*

It is a 7-point Likert-type 5-item scale developed to measure life satisfaction.<sup>19</sup> Turkish validity and reliability study of the scale was conducted by Yetim.<sup>20</sup> In the scale, the scores taken from each item vary between 1 and 7, while the total score ranges between 5 and 35. As the score taken from the scale increases, life satisfaction also increases. The Cronbach  $\alpha$  coefficient of the scale was reported as 0.86.<sup>20</sup> In our study, the Cronbach  $\alpha$  coefficient of the scale was found to be 0.83.

## Data assessment

In the assessment of the data obtained, number, percentage, average, standard deviation, Mann-Whitney *U* test, Kruskal-Wallis, and Pearson correlation coefficient were used. Statistical analyses were performed with the SPSS 25 program and the level of significance was .05 (*P* value).

## Ethical principles of the study

This study was conducted in accordance with the principles of Helsinki Human Rights Declaration. Approval (2020/04 numbered) and was taken from the ethical board of a foundation university for the study. A form, which included the necessary explanation about the aim and application method, was sent online to the health personnel included within the scope of the study and written consent was obtained from all participants.

## RESULTS

Table 1 includes the sociodemographic characteristics of the health care personnel and their knowledge about COVID-19. Average age of the participants is  $30.88 \pm 7.68$  years; 82.5% are male; 52.5% are married; 70.7% are university graduates; and 65.5% are working as a nurse—16.2% of the health care personnel have chronic disease and 61.8% state their health condition as good; 94.5% think that COVID-19 is dangerous; 37.3% think that the information given about COVID-19 is sufficient; and it was found that 13% were providing care to patients diagnosed with COVID-19.

It was found that 31.6% of the participants used TCM methods in the last 6 months, and 45.5% used TCM methods for COVID-19 in the last month; 48.7% of the health care personnel stated that they used TCM methods to strengthen their immune system and 17.9% stated that they used vitamin support as the TCM method (Table 2).

The LSS total average score was  $20.78 \pm 6.32$ ; a HCAMQ total average score was  $27.96 \pm 5.49$ ; the holistic health subdimension total average score was  $9.59 \pm 3.04$ ; and the complementary and alternative medicine subdimension total average score was  $18.37 \pm 3.58$  (Table 3).

Table 4 shows the comparison of sociodemographic characteristics, COVID-19 and TCM knowledge of the individuals who agreed to participate in the study, and the comparison of scales and subdimensions used in the study. It was found that male participants, married participants, those who were doctorate graduates when compared with university graduates, those who thought the information given about COVID-19 was sufficient, those who did not provide care to patients diagnosed with COVID-19, and those who evaluated their health status as good had high LSS scores and these results were found to be

**TABLE 1.** Sociodemographic Characteristics and Knowledge About COVID-19 (N = 560)

	Average $\pm$ SD
Age	30.88 $\pm$ 7.68
	<b>n (%)</b>
Gender	
Female	98 (17.5)
Male	462 (82.5)
Marital status	
Married	294 (52.5)
Single	266 (47.5)
Educational status	
Vocational health school	34 (6.1)
University	396 (70.7)
Master	85 (15.2)
Doctorate	45 (8.0)
Profession	
Nurse	367 (65.5)
Doctor	46 (8.2)
Health technician	70 (12.5)
Midwife	61 (10.9)
Nutritionist	3 (0.5)
Physiotherapist	5 (0.9)
Dentist	8 (1.4)
Chronic disease	
Present	91 (16.2)
Absent	469 (83.8)
Chronic disease <sup>a</sup>	
Diabetes	7 (7.5)
Hypertension	19 (20.4)
Hyperlipidemia	8 (8.6)
Peripheral vascular diseases	12 (12.9)
Heart diseases	17 (18.3)
Hepatitis B	3 (3.2)
COPD	2 (2.2)
Asthma	22 (23.7)
Renal disease	3 (3.2)
Thinking that COVID-19 is dangerous	
Yes	529 (94.5)
No	31 (5.5)
Thinking that information given about COVID-19 is sufficient	
Yes	209 (37.3)
No	190 (33.9)
Undecided	161 (28.7)
State of providing care to patients diagnosed with COVID-19	
Yes	73 (13.0)
No	487 (87.0)
Health status	
Good	346 (61.8)
Moderate	209 (37.3)
Bad	5 (0.9)

Abbreviations: COPD, chronic obstructive pulmonary disease; COVID-19, coronavirus disease-2019.

<sup>a</sup>More than 1 option was marked

**TABLE 2.** Information About TCM (N = 560)

	n (%)
The state of using TCM in the last 6 mo	
Yes	177 (31.6)
No	383 (68.4)
The state of using TCM for COVID-19 in the last month	
Yes	255 (45.5)
No	305 (54.5)
Reasons for using these methods	
To protect from illnesses	80 (21.5)
Hearing from people that it is beneficial	14 (3.8)
Strengthening the immune system	181 (48.7)
Psychological relaxation	42 (11.3)
Thinking that TCM methods are safe	55 (14.8)
TCM methods used <sup>a</sup>	
Ginger	137 (17.8)
Turmeric	76 (9.9)
Royal jelly/propolis	43 (5.6)
Wild angelica	1 (0.1)
Echinacea	4 (0.5)
Rosehip	41 (5.3)
Sumac extract	53 (6.9)
Black cumin	43 (5.6)
Sage	34 (4.4)
Vitamin supplement	138 (17.9)
Food supplement	118 (15.3)
Meditation	10 (1.3)
Religious methods	72 (9.4)
Thinking that use of TCM method is fit for purpose	
I have no idea	139 (24.7)
It was not effective	2 (0.4)
It was slightly effective	30 (5.4)
It was effective	84 (15.0)
I did not use	305 (54.5)

Abbreviations: COVID-19, coronavirus disease-2019; TCM, traditional and complementary medicine.

<sup>a</sup>More than 1 option was marked.

**TABLE 3.** Score Averages of the Scales and Subdimensions

	Average $\pm$ SD
LSS	20.78 $\pm$ 6.32
Holistic health subdimension	9.59 $\pm$ 3.04
Complementary and alternative medicine subdimension	18.37 $\pm$ 3.58
HCMQ	27.96 $\pm$ 5.49

Abbreviations: HCMQ, Holistic Complementary and Alternative Medicine Questionnaire; LSS, Life Satisfaction Scale.

**TABLE 4.** Comparison of Sociodemographic Characteristics, Information About COVID-19, Information About TCM, and the Scales and Subdimensions

	LSS		Complementary and Alternative Medicine		Holistic Health		HCAMQ	
	Average ± SD	P	Average ± SD	P	Average ± SD	P	Average ± SD	P
Gender								
Female	19.45 ± 6.62	.030	18.65 ± 5.36	.752	10.49 ± 4.15	.026	29.14 ± 8.45	.193
Male	21.06 ± 6.22		18.31 ± 3.08		9.4 ± 2.72		27.71 ± 4.6	
Marital status								
Married	21.29 ± 6.49	.043	18.35 ± 3.59	.910	9.62 ± 3.32	.814	27.97 ± 5.7	.865
Single	20.21 ± 6.09		18.39 ± 3.58		9.56 ± 2.72		27.95 ± 5.26	
Educational status								
Vocational health school	20.5 ± 5.92	.002	17.88 ± 3.76	.084	10.53 ± 4.11	.026	28.41 ± 6.7	.009
University	20.26 ± 6.44		18.16 ± 3.56		9.36 ± 2.91		27.52 ± 5.36	
Master	21.93 ± 5.61		18.96 ± 3.5		10.15 ± 3.39		29.12 ± 5.81	
Doctorate	23.36 ± 6.03		19.47 ± 3.55		9.78 ± 2.27		29.24 ± 4.54	
Profession								
Nurse	20.64 ± 6.18	.077	18.32 ± 3.59	.065	9.63 ± 3.02	.658	27.95 ± 5.44	.077
Doctor	22.54 ± 5.58		19.48 ± 3.56		9.5 ± 2.31		28.98 ± 4.62	
Health technician	19.56 ± 6.72		18.03 ± 3.92		9.37 ± 3.56		27.4 ± 6.58	
Midwife	21.08 ± 7.2		18.26 ± 3.17		9.51 ± 3.11		27.77 ± 5.02	
Nutritionist	19.33 ± 4.16		15.67 ± 4.04		8.33 ± 1.15		24 ± 5.2	
Physiotherapist	22.2 ± 7.73		21 ± 2.92		12.2 ± 4.38		33.2 ± 6.22	
Dentist	24.75 ± 2.76		17.25 ± 1.98		9.5 ± 1.77		26.7 ± 3.33	
Chronic disease								
Present	20.79 ± 6.52	.980	18.9 ± 3.44	.044	10.02 ± 3.56	.168	28.92 ± 5.55	.059
Absent	20.77 ± 6.29		18.27 ± 3.6		9.5 ± 2.93		27.77 ± 5.46	
Thinking that COVID-19 is dangerous								
Yes	20.73 ± 6.33	.583	18.35 ± 3.59	.624	9.54 ± 3.02	.092	27.89 ± 5.47	.216
No	21.55 ± 6.15		18.74 ± 3.55		10.42 ± 3.28		29.16 ± 5.88	
Thinking that information given about COVID-19 is sufficient								
Yes	22.37 ± 6.01	.001	18.15 ± 3.38	.422	9.57 ± 2.81	.308	27.72 ± 5.04	.445
No	19.18 ± 6.35		18.56 ± 4.05		9.85 ± 3.42		28.41 ± 6.43	
Undecided	20.58 ± 6.21		18.42 ± 3.24		9.3 ± 2.85		27.73 ± 4.8	
State of providing care to patients diagnosed with COVID-19								
Yes	18.49 ± 6.23	.001	18.6 ± 3.93	.438	9.58 ± 3	.617	28.18 ± 5.61	.329
No	21.12 ± 6.27		18.33 ± 3.53		9.59 ± 3.05		27.92 ± 5.48	
The state of using TCM in the last 6 mo								
Yes	20.32 ± 6.4	.212	18.92 ± 3.84	.039	9.12 ± 3.43	.001	28.04 ± 6.2	.904
No	20.98 ± 6.28		18.11 ± 3.43		9.8 ± 2.83		27.92 ± 5.14	
The state of using TCM for COVID-19 in the last month								
Yes	20.58 ± 6.26	.492	18.67 ± 3.82	.089	9.39 ± 3.32	.041	28.06 ± 6.1	.772
No	20.93 ± 6.38		18.12 ± 3.36		9.75 ± 2.79		27.87 ± 4.94	

(continues)

Downloaded from http://journals.lww.com/nrpjournal by BnDMf5ePHKav1zEoum1IQJN4a+kLHEZgbsH04XMI0hCy WCX1AMN1YOp/IQIHID3DDOORy7TVSFI4QI3VC1y0abgqZXdinHKZB2Yws= on 12/10/2024

**TABLE 4.** Comparison of Sociodemographic Characteristics, Information About COVID-19, Information About TCM, and the Scales and Subdimensions (*Continued*)

	LSS		Complementary and Alternative Medicine		Holistic Health		HCAMQ	
	Average ± SD	P	Average ± SD	P	Average ± SD	P	Average ± SD	P
Thinking that use of TCM method is fit for purpose								
I have no idea	20.14 ± 6.22	.108	18.44 ± 3.43	.216	9.49 ± 2.54	.055	27.93 ± 4.95	.784
It was not effective	9.5 ± 0.71		25 ± 7.07		8 ± 2.83		33 ± 9.9	
It was slightly effective	21.5 ± 5.12		18.7 ± 4.12		10.17 ± 4.69		28.87 ± 8.02	
It was effective	20.8 ± 6.47		18.87 ± 4.31		9.08 ± 3.9		27.95 ± 7.02	
I did not use	21.08 ± 6.39		18.12 ± 3.31		9.73 ± 2.78		27.85 ± 4.91	
Health status assessment								
Good	21.8 ± 6.35	.001	18.49 ± 3.65	.165	9.48 ± 3.05	.209	27.97 ± 5.64	.264
Moderate	19.18 ± 5.94		18.25 ± 3.38		9.8 ± 3.03		28.05 ± 5.13	
Bad	16.4 ± 4.93		14.8 ± 5.72		8.2 ± 3.11		23 ± 8.09	

Abbreviations: COVID-19, coronavirus disease-2019; HCAMQ, Holistic Complementary and Alternative Medicine Questionnaire; LSS, Life Satisfaction Scale; TCM, traditional and complementary medicine.

Statistically significant ( $P < .05$ ; Table 4). It was found that male participants, university graduates when compared with vocational high school graduates, those who used TCM methods in the last 6 months, and those who used TCM methods for COVID-19 in the last month had lower holistic health subdimension scores and they had more positive attitudes toward complementary and alternative medicine ( $P < .05$ ; Table 4). It was found that the group that did not have chronic disease and that did not use TCM methods in the last 6 months had lower complementary and alternative medicine subdimension scores and more positive attitudes toward complementary and alternative medicine ( $P < .05$ ; Table 4). It was found that lower HCAMQ total scores of university graduates when compared with vocational high school graduates were statistically significant and they were found to have more positive attitudes toward complementary and alternative medicine ( $P < .05$ ; Table 4).

A positive and weak statistically significant association was found between the HCAMQ and complementary and alternative medicine subdimension and the LSS ( $P < .05$ ). A positive and high statistically significant association was found between the HCAMQ and complementary and alternative medicine subdimension and holistic health subdimension ( $P < .01$ ). A positive and weak statistically significant association was found between

complementary and alternative medicine subdimension and holistic health subdimension ( $P < .01$ ).

## DISCUSSION

It is thought that due to the COVID-19 pandemic, individuals, especially health care personnel who work actively on site use TCM methods more consciously and cause these methods to become more common since it is important to strengthen the immune system besides personal protection methods in preventing illness. For this reason, the present study examined the attitudes of health care personnel toward complementary and alternative medicine and their life satisfaction during COVID-19 pandemic. In this study, while the TCM use of health care personnel in the last 6 months was 31.6%, the state of using TCM for COVID-19 during the last month was 45.5%. When studies conducted in literature were examined, it was found that TCM use status of health care personnel varied between 25% and 92.4%.<sup>21-23</sup> Although it was found that the use of TCM methods increased significantly during the pandemic, the rates were found to be similar to results in the literature in previous months. In the study, it was found that the leading reason why health care personnel used TCM methods was to strengthen the immune system

(48.7%). Demir<sup>24</sup> reported that 37.2% of health care personnel used TCM methods for relaxation, and Lafçı and Kaşıkçı<sup>22</sup> reported that 75% TCM methods for physical relaxation and 25% used for relieving pain. Hayes and Alexander<sup>21</sup> reported that nurses used TCM methods most frequently for relieving pain, relieving stress, and for general health purposes. In a study conducted on the Internet, Jones et al<sup>25</sup> found that 85.4% of the health personnel (n = 457) used TCM methods, and of these, 88% preferred these methods because they thought they were effective and useful. The results of this study are different from literature. The reason for this difference can be the result of advice that, during COVID-19 pandemic, it is important to take measures to support the immune system without getting sick to decrease the existing risks.<sup>16</sup> In the literature, it is recommended to use supplements such as vitamin, mineral, and omega-3 to strengthen immunity in the prevention of diseases.<sup>26-28</sup> This advice can encourage health care personnel to turn to methods that strengthen the immune system during this process.

In this study, when TCM methods used by health personnel were examined, i.e., multivitamin support (17.9%), ginger (17.8%), and food supplements (15.3%) were ranked highest. In Lafçı and Kaşıkçı's study,<sup>22</sup> it was found that the most frequently used TCM methods by health care personnel were herbal therapy (56.3%) and massage (43.7%). Hayes and Alexander<sup>21</sup> reported that the most frequently used 3 methods among nurses were meditation (37.6%), massage (37.1%), and prayer (32.6%). In another study, it was reported that the most frequently used and recommended 3 methods among nurses were vitamin supplement (37.0%), massage (30.0%), and meditation (30.0%).<sup>29</sup> In a study, Bahall and Legall<sup>30</sup> examined the use of complementary and alternative medicine in health care personnel, and they reported that nurses applied herbal, mental, and physical TCM methods the most. The results of this study are different when compared with the literature. This difference results from the fact that health care personnel place more importance on the methods that they consider to strengthen the immune system during the COVID-19 pandemic. However, vitamins have a direct or indirect effect on the immune system, especially some vitamins (A, B<sub>6</sub>, B<sub>9</sub>, C, D<sub>3</sub>, and E) and are reported to strengthen the immune system more.<sup>31</sup> In addition, minerals (Zn, Cu, Se, Mg, Cl, Na, and Fe),  $\beta$ -glucan, and Omega-3 are recommended to strengthen the immune system<sup>27</sup> During the

COVID-19 epidemic, it was found that health personnel used multivitamin support the most to strengthen the immune system.

In this study, the LSS total average score of the health care personnel was found as  $20.78 \pm 6.32$ , a moderate level of life satisfaction. In a study by Tekir et al<sup>32</sup> conducted with health care personnel, the LSS average score was  $22.49 \pm 6.21$ , while the LSS average score was  $25.47 \pm 6.51$  in a study conducted on Iranian nurses by Mirfarhadi et al.<sup>33</sup> The results of the study were found to be similar with the literature in that individuals' life satisfactions were of moderate levels.

It was found in the present study that gender affected the LSS average score and that male participants had the higher LSS average score ( $P < .05$ ; Table 4). Unlike this study, studies in literature have reported that gender does not affect life satisfaction.<sup>32,34,35</sup>

In the present study, it was found that marital status affected the LSS average score and that married health care personnel had the higher LSS average score ( $P < .05$ ; Table 4). Studies conducted have reported that married individuals have high levels of life satisfaction.<sup>36,37</sup> The results of the study were found to be similar with the literature. Considering the fact that marriage meets the needs to love, to be loved, to belong, to share, and to support, it can be said that this result can be interpreted as married individuals support each other and increase their life satisfaction during COVID-19 pandemic.

In the present study, it was found that the health care personnel who thought that the information given about COVID-19 was sufficient and those who did not provide care to patients diagnosed with COVID-19 had higher LSS average scores ( $P < .05$ ; Table 4). These results can be due to the fact that health care personnel feel emotions such as desperation, anxiety, and fear in the struggle with serious epidemics. In addition, the fact that it is unknown when this extraordinary situation will end and the fact that health care personnel are among the higher risk groups for COVID-19 infection can affect their life satisfaction negatively. It was found that the individuals who defined their health status as good had a higher LSS average score ( $P < .05$ ; Table 4). In a study conducted by Benli and Yıldırım<sup>38</sup> on nurses and in another study conducted by Yavuzer and Cıvıldağ<sup>34</sup> on health care personnel, it was found that the individuals who perceived their health status as good had significantly higher life satisfaction. The

results of the study were found to be similar to the results of other studies conducted. This result can be due to the fact that health care personnel who perceive their physical and mental health as good during COVID-19 pandemic work actively, fulfill the responsibilities of their profession, and help humanity.

In this study, the HCAMQ total average score was  $27.96 \pm 5.49$ ; the holistic health subdimension average score was  $9.59 \pm 3.04$ ; and the complementary and alternative medicine subdimension average score was  $18.37 \pm 3.58$ . Thus, individuals in this study expressed positive and moderate attitudes. In a study conducted by Demir<sup>24</sup> on health care personnel, the HCAMQ total average score was  $28.15 \pm 5.43$ ; the holistic health subdimension average score was  $9.04 \pm 2.86$ ; and the complementary and alternative medicine subdimension average score was  $19.11 \pm 4.06$ . The results of the study were found to be similar with results in literature in that they showed individuals had positive and moderate attitudes toward complementary and alternative medicine.

In the study, it was found that, when compared with women, men had lower holistic health subdimension and more positive attitudes toward complementary and alternative medicine ( $P < .05$ ; Table 4). In Demir's study,<sup>24</sup> it was found that gender did not cause a difference in terms of holistic health approach. The results of the study are different from the results in literature. This difference in our study results from

the fact that since it was reported that men are more affected by the pandemic, they resorted more to complementary and alternative medicine during this process.

In this study, it was found that, when compared with vocational health school graduates, university graduates had the lower holistic health subdimension and HCAMQ total score and more positive attitudes toward complementary and alternative medicine ( $P < .05$ ; Table 4). In Demir's study,<sup>24</sup> it was found that level of education did not cause a statistically significant difference between HCAMQ subdimensions and total average scores. The result of the study is different from the results in literature. This result can be due to the fact that individuals do more research during this process and get information that TCM methods are useful.

In this study, it was found that the individuals who used TCM methods in the last 6 months and those who used TCM methods for COVID-19 in the last month had lower holistic health subdimension scores and that they had more positive attitudes toward complementary and alternative medicine ( $P < .05$ ; Table 4). This result can be due to the fact that individuals resorted to TCM methods during the pandemic.

A positive significant association was found between age and LSS average scores ( $P < .05$ ; Table 5). Unlike the present study, it was found in

**TABLE 5.** Correlation Analysis of Age and the Scales Used<sup>a</sup>

	Age	LSS	Complementary and Alternative Medicine	Holistic Health	HCAMQ
Age					
<i>r</i>	1				
<i>P</i>	...				
LSS					
<i>r</i>	0.044	1			
<i>P</i>	.302	...			
Complementary and alternative medicine					
<i>r</i>	-0.007	0.104	1		
<i>P</i>	.87	.014	...		
Holistic health					
<i>r</i>	0.02	0.03	0.269	1	
<i>P</i>	.641	.474	.001	...	
HCAMQ					
<i>r</i>	0.006	0.085	0.841	0.716	1
<i>P</i>	.894	.045	.001	.001	...

Abbreviations: HCAMQ, Holistic Complementary and Alternative Medicine Questionnaire; LSS, Life Satisfaction Scale.

<sup>a</sup>Spearman's correlation.

some studies reported in literature that age did not affect the LSS average score.<sup>32,38</sup>

A positive association was found between the HCAMQ total score and the complementary and alternative medicine subdimension score and the LSS ( $P < .05$ ; Table 5). This result shows that as a positive attitude toward TCM increases, life satisfaction will also increase positively. By thinking positively, eating healthily, and keeping morale high, health care personnel protect their holistic health and they strengthen their immune system with TCM methods such as, vitamins, ginger, and food supplements. This situation affects their life satisfaction positively.<sup>24</sup>

## CONCLUSION

It was found that health care personnel had moderately positive attitudes toward TCM and life satisfaction. Gender, marital status, level of education, finding the information given about COVID-19 sufficient, not providing care to patients diagnosed with COVID-19, and having a good health status affect life satisfaction. Gender, level of education, using TCM methods in the last 6 months, and using TCM methods for COVID-19 in the last month affect attitudes toward TCM. As health care personnel's positive attitudes toward TCM increase, their life satisfaction also increases. Future studies should examine the effects of parameters such as clinical areas of health personnel and COVID-19 anxiety levels on the use of TCM methods. It is also recommended to conduct studies for patients and the society about the use of TCM methods.

## REFERENCE

1. WHO Regional Office for Europe. Coronavirus Disease Outbreak. <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/novel-coronavirus-2019-ncov>. Accessed April 9, 2020.
2. T.C. Sağlık Bakanlığı. Covid19.saglik.gov.tr. <https://covid19.saglik.gov.tr/> Accessed April 9, 2020.
3. Wu Z, McGoogan J. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *JAMA*. 2020;323(13):1239-1242.
4. Çöl M, Güneş G. COVID-19 pandemic an overview. In: Memikoglu O, Genç V, eds, *COVID-19*. 1st ed. Turkey: Ankara University Press; 2020:1-8.
5. Sepkowitz KA, Eisenberg L. Occupational deaths among healthcare workers. *Emerg Infect Dis*. 2005;11(7):1003-1008.
6. Ahcılar HE, Meltem Ç. The New Coronavirus Outbreak: Effective Approaches to Prevention. <https://korona.hasuder.org.tr/wp-content/uploads/Yeni-Koronavir%C3%BCs-Salg%C4%B1n%C4%B1-Korunmada-Etkili-Yakla%C5%9F%C4%B1mlar.pdf>. Accessed April 20, 2020.

7. Lu W, Wang H, Lin Y, Li L. Psychological status of medical workforce during the COVID-19 pandemic: a cross-sectional study. *Psychiatry Res*. 2020;288:112936.
8. Zeng Y, Zhen Y. Retracted: Chinese medical staff request international medical assistance in fighting against COVID-19 [published online ahead of print February 24, 2020]. *Lancet Glob Health*. doi: 10.1016/S2214-109X(20)30065-6.
9. Altay B, Avcı İA. The relationship between self-care agency and life satisfaction in the elderly living in the nursing home. *Dicle Med J*. 2009;36(4).
10. World Health Organization. *WHO Global Report on Traditional and Complementary Medicine*. Geneva, Switzerland: World Health Organization. <https://www.who.int/traditional-complementary-integrative-medicine/WhoGlobalReportOnTraditionalAndComplementaryMedicine2019.pdf?ua=1>. Accessed February 20, 2020.
11. Kocabaş D, Erdal E, Demir M. Evaluation of individuals' attitudes towards traditional and alternative methods in healthcare use. *J Bolu Abant İzzet Baysal Univ Inst Soc Sci*. 2019;19(1):63-80.
12. Turan N, Öztürk A, Kaya N. A new area of responsibility in nursing: complementary therapy. *J Nurs Sci Art Maltepe Univ*. 2010;3(1):93-98.
13. Oral B, Öztürk A, Balcı E, N S. Opinions of the family health center applicants about traditional/alternative medicine and their use. *TAF Prev Med Bull*. 2016;15(2):75.
14. Idung A, Okokon I, Udoh S, Inem V. Clinical and socio demographic profiles of complementary and alternative medicine users among outpatient clinic attendees in UYO, South-South Nigeria. *Fam Med Med Sci Res*. 2014;3(117):2.
15. Güngörmüş Z, Kıyak E. Evaluation of the knowledge, attitudes and behaviors of the individuals experiencing pain related to complementary and alternative treatment. *Clin Trials*. 2012;24(3):13-19.
16. World Health Organization. Food and nutrition tips during self-quarantine. <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/novel-coronavirus-2019-ncov-technical-guidance/food-and-nutrition-tips-during-self-quarantine>. Accessed April 9, 2020.
17. Hyland M, Lewith G, Westoby C. Developing a measure of attitudes: the Holistic Complementary and Alternative Medicine Questionnaire. *Complement Ther Med*. 2003;11(1):33-38.
18. Erci B. Attitudes towards holistic complementary and alternative medicine: a sample of healthy people in Turkey. *J Clin Nurs*. 2007; 16(4):761-768.
19. Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *J Pers Assess*. 1985;49(1):71-75.
20. Yetim U. The impacts of individualism/collectivism, self-esteem, and feeling of mastery on life satisfaction among the Turkish university students and academicians. *Soc Indicators Res*. 2003;61(3): 297-317.
21. Hayes KM, Alexander IM. Alternative therapies and nurse practitioners: knowledge, professional experience, and personal use. *Holist Nurs Pract*. 2000;14(3):49-58.
22. Lafçı D, Kaşıkçı MK. Knowing and using complementary and alternative treatment methods of healthcare professionals working in the inpatient health institution. *Gümüşhane Univ J Health Sci*. 2014;3(4): 1114-1131.
23. Thandar Y, Botha J, Sartorius B, Mosam A. Knowledge, attitude and practices of South African healthcare professionals towards complementary and alternative medicine use for atopic eczema—a descriptive survey. *South African Family Practice*. 2017;59(1):22-28.
24. Demir E. *Knowledge, Attitudes and Behaviors of Healthcare Professionals Towards Traditional and Complementary Treatment Methods*. İstanbul, Turkey: Biruni University; 2019.
25. Jones J, Rayner S, Logue S, Imray E, Stewart DC, Leslie SJ. National Health Service healthcare staff experience and practices regarding complementary and alternative medicine: an online survey. *Int J Complement Altern Med*. 2017;5(4).

26. Çakmakçı S, Tahmas-Kahyaoglu D. An overview of the effects of fatty acids on health and nutrition. *Acad Food J*. 2012;10(1):103-113.
27. Çetin F. Food-drug interaction of immune system supports. *J Istanbul Sabahattin Zaim Univ Inst Sci*. 2020;2(1):14-19.
28. Sánchez B, Delgado S, Blanco-Míguez A, Lourenço A, Gueimonde M, Margolles A. Probiotics, gut microbiota, and their influence on host health and disease. *Mol Nutr Food Res*. 2017;61(1):1600240.
29. Brolinson PG, Price JH, Ditmyer M, Reis D. Nurses' perceptions of complementary and alternative medical therapies. *J Community Health*. 2001;26(3):175-189.
30. Bahall M, Legall G. Knowledge, attitudes, and practices among health care providers regarding complementary and alternative medicine in Trinidad and Tobago. *BMC Complement Altern Med*. 2017;17(1):144.
31. Yaşar H, Melek S. *Nutrition and Foods*. Ankara, Turkey: Hatipoğlu Publishing; 2014.
32. Tekir Ö, Çevik C, Selma A, ÇETİN G. Examining health workers' burnout, job satisfaction levels and life satisfaction. *Kırkkale Üniversitesi Tıp Fakültesi Dergisi*. 2016;18(2):51-63.
33. Mirfarhadi N, Moosavi S, Tabari R. Life satisfaction and its determinants: a survey on Iranian nurses population. *J Paramedical Sci*. 2013;4(4):11-15.
34. Yavuzer Y, Çivilidağ A. Mediating role of depression in the relationship between mobbing and life satisfaction at work. *Düşünen Adam*. 2014;27(2):115-125.
35. Uysal N, Sözeri E, Selen F, Bostanoğlu H. Hemşirelik bölümü öğrencilerinin zaman yönetimi becerileri ve yaşam doyumlarının belirlenmesi. *J Acad Res Nurs*. 2017;3(1):30-36.
36. Ünal S, Karlıdağ R, Yoloğlu S. Hekimlerde tükenmişlik ve iş doyum düzeylerinin yaşam doyum düzeyleri ile ilişkisi. *Klinik Psikiyatri*. 2001;4(2):113-118.
37. Uslan YU. Public employee'job satisfaction, life satisfaction and burnout levels' assessment by some socia-demographic factors Kamu çalışanlarının iş doyumunu, yaşam doyumunu ve tükenmişlik düzeylerinin bazı sosyo-demografik unsurlara göre değerlendirilmesi. *J Human Sci*. 2016;13(2):3354-3372.
38. Benli SS, Yıldırım A. The relationship between life satisfaction and attitude towards death in nurses. *Gümüşhane Univ J Health Sci*. 2017;6(4):167-179.