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# Determining the Beliefs, Use Levels, and Attitudes of Individuals Diagnosed with COVID-19 Concerning Complementary and Alternative Medicine Methods

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## Abstract

**Background:** Stressors during COVID-19, differing views on treatment and vaccination, and the relationship between COVID-19 infection and immune status have led to increased public interest in traditional and complementary medicine practices.
**Objectives:** This study was conducted to determine the beliefs, use levels, and attitudes of individuals diagnosed with COVID-19 (coronavirus disease 2019) concerning complementary and alternative medicine (CAM) methods.
**Methods:** Snowball sampling was employed in this descriptive and cross-sectional study. The sample consisted of 694 people living in Turkey who had COVID-19 and agreed to voluntarily participate. The data were collected with the introductory information form and the Holistic Complementary and Alternative Medicine Questionnaire (HCAMQ). The data were analyzed using descriptive and inferential statistics in SPSS v. 26.
**Results:** In the study, 62.8% of the participants stated that they used CAM after being diagnosed with COVID-19; 85.5% of the participants stated that they used CAM for coughing, 84.2% to relieve breathing, 79.6% for shortness of breath, and 73.6% for strengthening immunity. Women had a more positive attitude towards CAM when compared to men. As the income level elevated, the attitude towards holistic health became more positive.
**Conclusions:** The individuals employed various herbal approaches after they had been diagnosed with COVID-19, and women had a more positive attitude towards CAM than men did.

*Keywords:* Integrative Medicine, COVID-19, Symptom Management, Attitudes

## 1. Background

The coronavirus disease 2019 (COVID-19) pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in Wuhan, China, in December 2019 and spread rapidly all over the world (1, 2). Pneumonia and death may develop in cases that progress with different symptoms such as high fever, shortness of breath, cough, sore throat, nasal obstruction, muscle pain, fatigue, weakness, shivering, nausea, vomiting, diarrhea, and loss of taste and smell due to COVID-19 (1-4).

The lack of a definitive antiviral treatment for COVID-19 has made people anxious and has encouraged them to perform protective behaviors (5, 6). People tend to resort to complementary and alternative treatment (CAM) to reduce the possibility of being infected, strengthen their immunity, alleviate the progression of infection, and better manage the current situation (5-7).

A study determined that traditional Chinese medicine was effective in alleviating the clinical symptoms of COVID-19 patients, reducing their mortality, and decreasing the rate of relapse (8). Another study stated that herbal treatment methods could prevent COVID-19 and reduce the severity of the disease (9, 10). Similarly, citrus fruits such as lemons and oranges have been reported to play a promising role in the prophylaxis and treatment of COVID-19 (11). It has been stated that lemon also strengthens immunity and helps relieve respiratory

symptoms (12, 13). It was reported that polyphenolic compounds found in thyme, dogwood, rosemary, sage, mint, basil, apple peel, black tea, asparagus, buckwheat, onion, green tea, fig, grapefruit, lemon, lime, apple, strawberry, mulberry, and most citrus fruits played a role as an antiviral agent, especially against respiratory tract infections, in the treatment of COVID-19 (14). Including Chinese herbal medicine in standard medical therapy recovered COVID-19 signs and symptoms and facilitated the absorption of lung infection lesions (15).

## 2. Objectives

Despite much information about the potential benefits and harms of CAM and COVID-19 treatment, there are large gaps in the literature on the use of CAM by patients diagnosed with COVID-19. It is unknown which methods they use for which symptoms. In light of this information, this study aimed to determine the beliefs, use levels, and attitudes of individuals diagnosed with COVID-19 toward CAM methods.

## 3. Methods

### 3.1. Study Design

This cross-sectional study was conducted to determine the beliefs, usage levels, and attitudes of individuals living in Turkey diagnosed with COVID-19 regarding CAM methods before and when they were diagnosed with COVID-19.

### 3.2. Setting and Participants

The study was conducted between June and September 2021. The population consisted of patients living in Turkey and diagnosed with COVID-19. The sample size was determined as 266 with G-Power by taking an impact size of 0.2, $\alpha$ = 0.05, power (1-$\beta$) = 0.95, and a confidence level of 95%. The sample consisted of 694 individuals diagnosed with COVID-19 who agreed to voluntarily participate and were recruited using snowball sampling, which is a purposive sampling method.

### 3.3. Variables

Descriptive characteristics (sex, marital status, family type, educational background, occupation, place of residence, income status, etc.) and CAM methods and herbal products constituted the independent variables, while the participants' use of CAM after the diagnosis of COVID-19, the use of herbal approaches after the diagnosis of COVID-19, and the results of the Holistic Complementary and Alternative Medicine Questionnaire (HCAMQ) constituted the dependent variables.

### 3.4. Data Collection

The data were collected by surveying people in Turkey who had COVID-19. The survey forms were developed using Google Forms and collected from 16/06/2021 to 30/09/2021. The participants took 20 - 30 minutes to complete the questionnaire. At the start of the Google survey, the participants were asked to read and agree to Google's privacy policy. A pilot study was conducted with 10 participants to test the comprehensibility of the introductory information form and the applicability of all data collection tools. Those who participated in the pilot study were not included in the study sample (due to restrictions during the COVID-19 period).

### 3.5. Instruments

The data were collected using an introductory information form and the Holistic Complementary and Alternative Medicine Questionnaire.

#### 3.5.1. Introductory Information Form

This questionnaire was developed by the researchers in accordance with the literature and included the participants' age, sex, income level, place of residence, and attitudes towards traditional and complementary medicine. This form asked the individuals whether they knew about CAM methods and examined their beliefs, use levels, and attitudes of individuals diagnosed with COVID-19 regarding herbal products before and when they were diagnosed with COVID-19. In addition, in this form, the reasons for CAM methods were included according to the symptoms of COVID-19 and reasons. Before the administration of this form, the opinions of 3 experts were received. A pilot study was conducted in line with the recommendations of the experts. As a result of these recommendations and the pilot study, corrections were made to the questionnaire, and it was finalized.

#### 3.5.2. Holistic Complementary and Alternative Medicine Questionnaire

The validity and reliability of the questionnaire for Turkey were explored by Erci in 2007. The questionnaire

consists of 11 items and has two subscales: Complementary and Alternative Medicine and Holistic Health. There are 6 items (Items 2, 4, 6, 8, 9, and 11) in the Complementary and Alternative Medicine subscale. There are 5 items (Items 1, 3, 5, 7, and 10) in the Holistic Health subscale. Items in the questionnaire are rated on a 6-point Likert-type scale (1 = strongly agree, 6 = strongly disagree). The lowest and highest scores on the questionnaire are 11 and 66, respectively. Lower scores signify that a positive attitude towards CAM increases. The Cronbach's alpha reliability coefficient for the original version of the questionnaire was 0.72 (16).

### 3.6. Statistical Analysis

The coding and statistical analyses of the data obtained from the research were carried out using SPSS (Statistical Package for Social Science) v. 26 (IBM Corp., Armonk, NY, USA). Descriptive methods (mean, standard deviation, median, frequency, and percentage) were applied to analyze the data. Whether the data showed a normal distribution was determined using the Kolmogorov-Smirnov Test. Student's *t*-tests were used to evaluate the normally distributed data. Pearson's correlation, Spearman's correlation, and *t*-tests were employed in the data analysis. The results are expressed at a confidence interval of 95% and a significance level of $P < 0.05$.

### 3.7. Ethical Considerations

Ethical approval was obtained from the Scientific Research and Publication Ethics Committee of the university where the research was conducted (Date = 09/06/2021, No = 2021/04), and research approval was obtained from the Ministry of Health, General Directorate of Health Services (Date = 15/06/2021). Permission was obtained by e-mail from the author of the HCAMQ, which was used as a data collection instrument in the study. Those who agreed to participate in the study were informed about the study through Google Forms before data collection and provided written informed consent. This study was conducted in accordance with the principles of the Declaration of Helsinki.

## 4. Results

The mean age of the participants was 25.78 ± 7.73 years (min: 18, max: 64), and 52.3% of them were women; 37.5% were married; 75.8% had a nuclear family; and 82.9% were university graduates. Moreover, 23.5% lived in the Black Sea region, 20.0% in the Marmara region, and 15.9% in the Eastern Anatolia region. While 49.1% of the individuals expressed their income status, they preferred the statement, "My income is equal to my expenses." The majority of the participants (81.8%) did not suffer from any chronic disease.

Besides, 69.6% of the sample stated that they believed in the effectiveness of CAM methods; 30.7% stated that they obtained the related information from media, television, and radio; and 20.9% reported that they obtained the related information from scientific sources. Furthermore, 67.7% of the participants stated that both medical treatment and CAM therapies were effective (Table 1).

The most well-known CAM methods were herbal approaches (81.6%), hypnosis (50.4%), yoga (50.1%), cupping (49.6%), color therapy (49.1%), mesotherapy (49%), leech (47.3%), music therapy (46.7%), meditation (45.8%), religious methods (45.5%), and ozone therapy (45.2%) (Table 2).

The participants' most used products were honey (98.6%), pomegranate (98.4%), garlic (96.7%), rosehip (95.8%), grapefruit (94.1%), mint (92.9%), sage tea (88.9%), green tea (87.9%), carob molasses (86.5%), and black mulberry molasses (81.1%) (Table 3).

In the study, 62.8% of the participants stated that they used CAM after being diagnosed with COVID-19. As for the COVID-19 symptoms, 85.5% of the participants reported that they used CAM for coughing, 84.2% for relieving breathing, and 79.6% for shortness of breath. Moreover, 59.4% of the participants stated that CAM methods used when they had COVID-19 did not have any harm/side effects. As for the reasons for using CAM methods used when they had COVID-19, all of the participants stated that they used these methods to completely regain their health and strengthen their immune systems. The majority of the participants preferred the use of CAM because it supported and assisted the treatment prescribed by their doctor. The rate of those who consulted healthcare personnel for the use of CAM when they were infected with COVID-19 was 35.3% (Table 4).

After being diagnosed with COVID-19, the most commonly used herbal products were lemon (87.8%), linden (85.6%), honey (45.9%), anzer honey (44.7%), thyme (40.6%), chestnut honey (40.1%), mint and lemon tea

**Table 1.** Sociodemographic Characteristics of the Participants (n = 694)

| Variables | No. (%) |
|---|---|
| **Sex** | |
| Female | 363 (52.3) |
| Male | 331 (47.7) |
| **Marital status** | |
| Married | 260 (37.5) |
| Single | 434 (62.5) |
| **Family type** | |
| Nuclear family | 526 (75.8) |
| Extended family | 168 (24.2) |
| **Educational background** | |
| Elementary school | 5 (0.7) |
| Secondary school | 32 (4.6) |
| High school | 77 (11.1) |
| University | 575 (82.9) |
| Postgraduate | 5 (0.7) |
| **Occupation** | |
| Civil servant | 115 (16.6) |
| Teacher | 79 (11.4) |
| Homemaker | 9 (1.3) |
| Student | 311 (44.8) |
| Unemployed | 71 (10.2) |
| Private sector employee | 45 (6.5) |
| Healthcare professional | 37 (5.3) |
| Self-employed | 27 (3.9) |
| **Place of residence** | |
| Black Sea region | 163 (23.5) |
| Central Anatolia | 80 (11.5) |
| Marmara | 139 (20.0) |
| Aegean | 81 (11.7) |
| Mediterranean | 93 (13.4) |
| Eastern Anatolia | 110 (15.9) |
| Southeastern Anatolia | 28 (4.0) |
| **Income status** | |
| Income is less than expenditure | 225 (32.4) |
| Income is equal to expenditure | 341 (49.1) |
| Income is more than expenditure | 128 (18.4) |
| **Having any chronic disease** | |
| Yes | 126 (18.2) |
| No | 568 (81.8) |
| **Do you believe in the effectiveness of CAM methods?** | |
| Yes | 483 (69.6) |
| No | 45 (6.5) |
| I have no idea | 166 (23.9) |
| **Obtaining information about CAM methods** | |
| Books, magazines | 136 (19.6) |
| Media, television, and radio | 213 (30.7) |
| Internet | 79 (11.4) |
| Scientific medical sources | 145 (20.9) |
| Sellers of medicinal herbs | 41 (5.9) |
| Traditional and complementary medicine practitioners | 27 (3.9) |
| Other health practitioners | 53 (7.6) |
| **Which treatment method do you think is effective?** | |
| CAM methods | 51 (7.3) |
| Medical treatment | 173 (24.9) |
| Both | 470 (67.7) |
| **Did you suffer from any side effects of CAM methods?** | |
| Yes | 312 (45.0) |
| No | 125 (18.0) |
| I have no idea | 257 (37.0) |

Abbreviation: CAM, Complementary and Alternative Medicine.

(35.8%), onion (34.9%), and green tea (32.8%) (Table 5).

The total mean score of HCAMQ was 30.93 ± 8.65, the total mean score of the Complementary and Alternative Medicine subscale was 17.99 ± 5.11, and the total mean score of the Holistic Health subscale was 12.93 ± 5.30.

There was a significant difference between sex and the HCAMQ total score and subscale scores. The attitudes of women towards Holistic Health and Complementary and Alternative Medicine increased positively compared to men ($t$ = -3.188; P = 0.001). Women had a more positive attitude towards CAM than men ($t$ = -6.476; P < 0.001).

There was a positive and significant correlation between the total score of HCAMQ and its subscale scores. As the total score of HCAMQ increased, the mean scores of its subscales also increased. There was a significant negative correlation between the perception of income status and the total mean score of the Holistic Health subscale (P = 0.023). As the income level increased, the attitude towards holistic health improved (Table 6).

## 5. Discussion

Some studies have reported that herbal medicines are effective in reducing the risk of being infected with COVID-19, managing the disease, and alleviating the effects of the disease (17). For example, it was reported that turmeric had antiviral, anti-inflammatory, antinociceptive, anti-fatigue, and antipyretic properties to reduce the symptoms of COVID-19 (18).

In this study, 69.6% of the individuals stated that they believed in the effectiveness of CAM methods, and 67.7% of individuals expressed that both medical treatment and CAM were effective. More than half of the individuals stated that they believed in the effectiveness of CAM methods. The majority of the participants noted that both medical treatment and CAM were effective. Sex and income level affected the attitude towards CAM. The three CAM methods that were most well-known to the participants were herbal approaches, hypnosis, and yoga. In a study, 22.4% and 12.8% of the patients who visited the COVID-19 outpatient clinic stated that phytotherapy and cupping were among the most useful CAM methods during the pandemic. In addition, 19.8% of the participants stated that CAM would be beneficial together with routine drugs (19). In a study by Karataş et al. (2021), 39.3% of the participants used at least 1 CAM method during the COVID-19 pandemic; 30.8% used herbal medicines, 23.8% used nutritional supplements/vitamins, and 17.7% used

**Table 2.** Answers to the Question, "Which CAM Methods Do You Know?"

| | I Know, No.[a] (%) | I Don't Know, No.[a] (%) |
|---|---|---|
| **Acupuncture** | 284 (40.9) | 410 (59.1) |
| **Apitherapy** | 297 (42.8) | 397 (57.2) |
| **Aromatherapy** | 277 (39.9) | 417 (60.1) |
| **Biotherapy** | 257 (37.0) | 437 (63.0) |
| **Religious methods (prayer, etc.)** | 316 (45.5) | 378 (54.5) |
| **Nutritional supplement** | 316 (45.5) | 378 (54.5) |
| **Phytotherapy** | 264 (38.0) | 430 (62.0) |
| **Hydrotherapy** | 297 (42.8) | 397 (57.2) |
| **Hypnosis** | 350 (50.4) | 344 (49.6) |
| **Homeopathy** | 237 (34.1) | 457 (65.9) |
| **Cupping** | 344 (49.6) | 350 (50.4) |
| **Larvae** | 269 (38.8) | 425 (61.2) |
| **Massage** | 301 (43.4) | 393 (56.6) |
| **Meditation/relaxation** | 318 (45.8) | 376 (54.2) |
| **Mesotherapy** | 340 (49.0) | 354 (51.0) |
| **Music therapy** | 324 (46.7) | 370 (53.3) |
| **Osteopathy** | 312 (45.0) | 382 (55.0) |
| **Ozone** | 314 (45.2) | 380 (54.8) |
| **Prolotherapy** | 93 (13.4) | 601 (86.6) |
| **Reflexology** | 230 (33.1) | 464 (66.9) |
| **Reiki** | 152 (21.9) | 542 (78.1) |
| **Color therapy** | 341 (49.1) | 353 (50.9) |
| **Leech** | 328 (47.3) | 366 (52.7) |
| **Yoga** | 348 (50.1) | 345 (49.7) |
| **Herbal approach** | 566 (81.6) | 128 (18.4) |

[a] More than one answer

methods of healing with prayer/faith (20). Similar to the present study, they observed that herbal approaches were used more.

After being diagnosed with COVID-19, over 90% of the participants in the present study used honey, pomegranate, garlic, rosehip, grapefruit, and mint. Most of the participants used CAM methods after being diagnosed with COVID-19 for respiratory system symptoms (cough, etc.). Besides, 59.4% of the sample stated that CAM methods they used when they were diagnosed with COVID-19 did not have any harm/side effects. When the reasons for using these CAM methods during that period were examined, all of the participants stated that they used these methods to completely regain their health and strengthen their immune system. The most important factor in the majority of the participants who preferred to use CAM was "to support and assist the treatment prescribed by their doctor." In a study, 38.8% of the participants stated that CAM was more natural and should be used for the treatment of COVID-19; 33.7% believed that it was effective for COVID-19; and 54.8% stated that CAM had less side effects than modern/traditional drugs and was safer (20). In another study, 29.3% of the participants stated that they used vitamin C because they believed that it played a role in treating or reducing the chance of being infected with COVID-19 (6). Other studies reported that COVID-19 patients used herbal medicines in parallel with modern medicine to strengthen their immunity (21, 22). According to other studies, phytotherapies could prevent COVID-19 and reduce the severity of the disease (9, 10). The

**Table 3.** Herbal Products Used in General

| Herbal Approach | I Used, No.[a] (%) | I Didn't use, No.[a] (%) |
|---|---|---|
| **Nettle** | 309 (44.5) | 309 (44.5) |
| **Black cumin** | 342 (49.3) | 352 (50.7) |
| **Thyme** | 469 (67.6) | 225 (32.4) |
| **Lavandula stoechas** | 129 (18.6) | 565 (81.4) |
| **Equisetum palustre** | 132 (19.0) | 562 (81.0) |
| **Hypericum perforatum** | 197 (28.4) | 497 (71.6) |
| **Yarrow** | 170 (24.5) | 524 (75.5) |
| **Mistletoe** | 160 (23.1) | 534 (76.9) |
| **Daisy** | 219 (31.6) | 475 (68.4) |
| **Juniper** | 211 (30.4) | 483 (69.6) |
| **Mallow** | 202 (29.1) | 492 (70.9) |
| **Ginger** | 256 (36.9) | 438 (63.1) |
| **Sweet almond** | 245 (35.3) | 449 (64.7) |
| **Turmeric** | 279 (40.3) | 414 (59.7) |
| **Blueberry** | 251 (36.2) | 443 (63.8) |
| **Flax seed** | 249 (35.9) | 445 (64.1) |
| **Thistle milk** | 231 (33.3) | 463 (66.7) |
| **Soy** | 235 (33.9) | 459 (66.1) |
| **Green tea** | 610 (87.9) | 84 (12.1) |
| **Sage** | 617 (88.9) | 77 (11.1) |
| **Linden** | 649 (93.5) | 45 (6.5) |
| **Rosehip** | 665 (95.8) | 29 (4.2) |
| **Honey** | 684 (98.6) | 10 (1.4) |
| **Grapefruit** | 653 (94.1) | 41 (5.9) |
| **Panax ginseng** | 2 (0.3) | 692 (99.7) |
| **Royal jelly** | 13 (1.9) | 681 (98.1) |
| **Garlic** | 671 (96.7) | 23 (3.3) |
| **Grape seed crust** | 16 (2.3) | 678 (97.7) |
| **Grape seed extract** | 15 (2.2) | 679 (97.8) |
| **Anzer honey** | 277 (39.9) | 417 (60.1) |
| **Chestnut honey** | 406 (58.5) | 288 (41.5) |
| **Black mulberry molasses** | 563 (81.1) | 131 (18.9) |
| **Carob molasses** | 600 (86.5) | 94 (13.5) |
| **Pomegranate** | 683 (98.4) | 11 (1.6) |
| **Cherry stalk** | 130 (18.7) | 564 (81.3) |
| **Mint** | 645 (92.9) | 49 (7.1) |
| **Thyme oil** | 76 (11.0) | 618 (89.0) |
| **Costus speciosus oil** | 58 (8.4) | 636 (91.6) |
| **Licorice** | 29 (4.2) | 665 (95.8) |
| **Fennel** | 124 (17.9) | 570 (82.1) |
| **Avocado** | 58 (8.4) | 636 (91.6) |
| **Melissa tea** | 302 (43.5) | 392 (56.5) |
| **Mint and lemon** | 490 (70.6) | 204 (29.4) |
| **Aloe vera** | 35 (5.0) | 659 (95.0) |
| **Chia seed** | 48 (6.9) | 646 (93.1) |
| **Hibiscus** | 19 (2.7) | 675 (97.3) |
| **Propolis** | 37 (5.3) | 657 (94.7) |
| **Pine cone** | 18 (2.6) | 676 (97.4) |
| **Lavender** | 55 (7.9) | 639 (92.1) |
| **Olive leaf** | 8 (1.2) | 686 (98.8) |

[a] More than one answer

**Table 4.** Characteristics of Using CAM After the Diagnosis of COVID-19

| | No. (%) |
|---|---|
| **Did you use CAM methods when you had COVID-19?** | |
| Yes | 436 (62.8) |
| No | 258 (37.2) |
| **For which COVID-19 symptom did you use CAM methods?** [b] | |
| Relieving breathing | 367 (84.2) |
| Coughing | 373 (85.5) |
| Shortness of breath | 347 (79.6) |
| Sore throat | 220 (50.4) |
| Weakness | 305 (59.9) |
| Fever | 168 (38.5) |
| Loss of smell | 75 (17.2) |
| Strengthening immunity | 321 (73.6) |
| **Were CAM methods helpful for you when you had COVID-19?** | |
| Yes | 241 (55.3) |
| No | 27 (6.2) |
| I have no idea | 168 (38.5) |
| **Did you suffer from any side effects of the CAM methods you used when you had COVID-19?** | |
| Yes | 18 (4.1) |
| No | 259 (59.4) |
| I have no idea | 159 (36.5) |
| **What are your reasons for using CAM methods when you had COVID-19? (n = 436)** [a], [b] | |
| To regain my health completely | 436 (100.0) |
| Because I didn't want to use drugs | 29 (6.7) |
| Due to the effect of my circle | 40 (9.2) |
| Due to hopelessness and despair | 42 (9.6) |
| Because I believe alternative therapy is helpful | 266 (61) |
| Because of the side effects of drugs | 78 (17.9) |
| To strengthen the immune system | 436 (100.0) |
| To assist and support the treatment prescribed by the doctor | 373 (85.6) |
| To prevent the relapse of the disease | 63 (14.5) |
| To reduce stress and anxiety | 171 (39.3) |
| Due to doctors' and nurses' advice | 294 (67.4) |
| Because I am not satisfied with the medical treatment | 248 (56.9) |
| To sleep comfortably | 218 (50.0) |
| **Did you consult any healthcare personnel before applying any CAM methods you used when you had COVID-19?** | |
| Yes | 154 (35.3) |
| No | 282 (64.7) |

Abbreviation: CAM, Complementary and Alternative Medicine.
[a] Participants who used CAM methods when had COVID-19.
[b] More than one answer.

**Table 5.** The Most Used Natural Approaches After the Diagnosis of COVID-19

| | No.[a] (%) |
|---|---|
| **Nettle** | 15 (3.4) |
| **Black cumin** | 81 (18.6) |
| **Thyme** | 177 (40.6) |
| **Lavandula stoechas** | 11 (2.5) |
| **Hypericum perforatum** | 8 (1.8) |
| **Daisy** | 30 (6.9) |
| **Mallow** | 1 (0.2) |
| **Ginger** | 110 (25.2) |
| **Sweet almond** | 11 (2.5) |
| **Turmeric** | 64 (14.7) |
| **Blueberry** | 14 (3.2) |
| **Thistle milk** | 8 (1.8) |
| **Soya** | 9 (2.1) |
| **Green tea** | 143 (32.8) |
| **Sage** | 88 (20.2) |
| **Linden** | 373 (85.6) |
| **Rosehip** | 133 (30.5) |
| **Honey** | 200 (45.9) |
| **Grape seed extract** | 16 (3.7) |
| **Anzer honey** | 195 (44.7) |
| **Chestnut honey** | 175 (40.1) |
| **Black mulberry molasses** | 143 (32.8) |
| **Carob molasses** | 74 (17.0) |
| **Pomegranate** | 30 (6.9) |
| **Cherry stalk** | 9 (2.1) |
| **Mint** | 85 (19.5) |
| **Thyme oil** | 113 (25.9) |
| **Costus speciosus oil** | 12 (2.8) |
| **Fennel** | 55 (12.6) |
| **Melissa tea** | 45 (10.3) |
| **Mint and lemon tea** | 156 (35.8) |
| **Chia seed** | 6 (1.4) |
| **Propolis** | 66 (15.1) |
| **Pine cone** | 28 (6.4) |
| **Lavender** | 40 (9.2) |
| **Lemon** | 383 (87.8) |
| **Onion** | 152 (34.9) |

[a] More than one answer

results of these studies support the findings of the present study.

Alyami et al. (2020) reported that 14.9% of the participants used herbal products/nutritional supplements to prevent the disease during the COVID-19 pandemic, and 94.4% of the users took vitamin C (6). The most common herbal products used by the participants in this study were lemon and linden. In a previous study, 34.4% of participants stated that they consumed garlic because they believed that eating garlic helped strengthen their immunity and reduced the chance of being infected with COVID-19 (6). Based on another study, when the participants had COVID-19, the use of lemon, orange, honey, ginger, vitamin C, and black cumin increased significantly (23). Al-Hatamleh et al. reported that the direct and indirect medicinal properties of honey and its phenolic compounds strengthened the immune system against the antiviral effects of COVID-19 and reduced the severity of COVID-19 infection (24). In another study, it was stated that the anti-inflammatory, antithrombotic, and antiviral properties of onion may help treat patients with COVID-19 (25). It was also reported that garlic's cytokine secretion, immunoglobulin production, phagocytosis, and macrophage activation properties may be a possible treatment method for COVID-19 patients (26).

### 5.1. Limitations

The strength of the study is that it provides data on the beliefs, use levels, and attitudes regarding CAM methods in individuals who lived in Turkey and were diagnosed with COVID-19 before and when they were diagnosed with COVID-19. The limitations of this study were that it was conducted online, and the vital signs of the participants (fever, etc.) were not evaluated.

### 5.2. Conclusions

It was determined that 85.5% of the participants used CAM methods for cough, and 84.2% used them for relieving breathing as COVID-19 symptoms. Women had a more positive attitude towards CAM than men did. As the income level increased, the attitude towards holistic health improved. The participants stated that they used CAM methods to regain their health and strengthen their immune systems during the COVID-19 pandemic. However, they often obtained information about CAM methods from media, television, and radio. Considering the role of the media in influencing health awareness, information in the media should be monitored. The awareness of the public should also be increased to access correct information. Doctors and nurses should inform individuals diagnosed with COVID-19 about CAM methods, their effects, and side effects. It should be examined whether CAM methods are used, which methods have increased during COVID-19, and which ones were consciously practiced.

**Table 6.** The Correlation Between the Total Score of the Holistic Complementary and Alternative Medicine Questionnaire and Some Variables

| | HCAMQ Total Score | | CAM Subscale Total Score | | Holistic Health Subscale Total Score | |
|---|---|---|---|---|---|---|
| | r | P | r | P | r | P |
| **HCAMQ total score** | 1 | - | 0.824 | < 0.001 | 0.838 | < 0.001 |
| **CAM subscale total score** | 0.824 | < 0.001 | 1 | - | 0.381 | < 0.001 |
| **Holistic Health subscale total score** | 0.838 | < 0.001 | 0.381 | < 0.001 | 1 | - |
| **Perception of income status** | -0.065 | 0.086 | -0.005 | 0.896 | -0.086 | 0.023 |

Abbreviations: HCAMQ, Holistic Complementary and Alternative Medicine Questionnaire; CAM, Complementary and Alternative Medicine.

## Footnotes

**Authors' Contribution:** MDD: Definition, conceptualization, methodology, formal analysis, visualization, writing - original draft, writing - review & editing. BA: Definition, conceptualization, formal analysis, methodology, supervision, visualization, writing - original draft, writing - review & editing.

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