

# Evaluation of Traditional and Complementary Medicine Applications Used in the COVID-19 Pandemic

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## ABSTRACT

**Objective:** Traditional and complementary medicine practices have been used to protect and treat physical and mental diseases in different cultures and beliefs from past to present. In this study, it was aimed to determine which of the traditional and complementary medicine applications was used and its effectiveness in the pandemic.

**Methods:** 979 people aged 18 and over (between 18 and 73) participated in the study. In the online survey, province, age, gender, occupation, education status, marital status, presence of children, presence of chronic diseases, COVID-19 diagnosis status, whether there is a COVID-19 vaccine, awareness of traditional and complementary medicine practices and nutritional and food supplements, utilization has been questioned.

**Results:** It was observed that no nutritional and food supplements used by the participants before and during the coronavirus pandemic did not reduce the frequency of being diagnosed with COVID-19.

**Conclusions:** In the study, it was observed that no food and nutritional supplement reduced the frequency of receiving COVID-19. However, in order to evaluate the effectiveness of nutritional and food supplements, it was concluded that the sample of the participants should be equal in terms of occupation, age, whether they were infected or not, and that it should be supported by researches by questioning whether the patients diagnosed with COVID-19 had mild symptoms or not.

**Keywords:** Supplement, pandemic, protect, traditional, complementary medicine.

## 1. INTRODUCTION

Traditional and complementary medicine (TCM) is the whole of knowledge, skills and practices that can be explained or not, based on beliefs and experiences, fed from different cultures in different geographies for centuries, used to prevent, diagnose, treat and maintain the continuation of people's physical and mental diseases. Today, many individuals in the society often resort to TCM methods in addition to modern medical practices, both for treatment, preventive purposes, and culturally (1).

COVID-19 (COVID-19 – new coronavirus), a new coronavirus disease known to be of zoonotic origin, accompanied by severe acute respiratory problems and rapidly transmitted from person to person, is an important health problem that has become a global pandemic (2). With the failure of

antibiotics in this viral infection that is not caused by bacteria, it is reported that the most effective method of fighting it today is not to catch the disease at all. Although vaccination studies and initiation of implementation are hopeful, since it will take time to vaccinate a certain percentage of the population, the importance of strengthening the immune system of individuals with symptomatic approaches and supportive treatments is emphasized (3).

Studies reveal that these practices, which are described as traditional and complementary therapies today, take their place as both an academic and a popular curiosity area, which attracts a lot of attention among the public during the coronavirus global epidemic (4).

Therefore, in this study, it was aimed to determine which of the traditional and complementary medicine applications is used most by individuals during the pandemic period.

## 2. METHODS

### 2.1. Research Design and Participants

The study was conducted as a descriptive online survey between March 01 and April 01, 2021. Persons aged 18 and over who agreed to participate in the study were included in the study, persons under the age of 18, those who were mentally incapable and illiterate were excluded. In line with the inclusion criteria of the study, a total of 979 people aged 18 and over (between 18-73 years old) were included in the study. Necessary explanations were given to the participants aged 18 and over who voluntarily agreed to participate in the study, and their "informed consent" was obtained before the study. All rights of the participants were respected and the principles of voluntariness and confidentiality were taken into consideration.

### 2.2. Data Collection

The survey we conducted online has 25 questions (1-3) and it questions; personal information consisting of the province where people live, age, gender, profession, education status, marital status, presence of children, presence of chronic diseases, whether they have been diagnosed with COVID-19, whether there is a vaccine for COVID-19, and awareness of traditional and complementary medicine practices, the latest benefit from these applications in 10 years, awareness of nutritional and food supplements and usage status of nutritional and food supplements in the last 1 year.

### 2.3. Data Analysis

IBM SPSS statistics 22.0 program was used for statistical analysis in the study. While evaluating the study data, in addition to descriptive statistical methods (mean, standard deviation, frequency), Chi-square test was used to evaluate the relationship between variables, Student T test was used to compare data with normal distribution, and Mann-Whitney U test was used for comparison of data that did not show normal distribution. The results were evaluated at the 95% confidence interval and the significance level of  $p < .05$ .

### 2.4. Ethical Considerations

After obtaining permission from the Ministry of Health Scientific Research Platform before starting the study, ethics committee approval was obtained from the Ethics Committee of a university with the decision number 22/421 and dated 29.12.2020.

## 3. RESULTS

The research was carried out between 01 March – 01 April 2021 by reaching a total of 979 people using the online survey method. The distribution of the demographic characteristics of the participants is shown in Table-1, 68.23% (n=668) of the participants were female, 29.8% (n=285) had at least one chronic disease, 24.4% (n=239) were infected with the COVID-19 virus and 42.7% (n=418) were vaccinated against COVID-19 (Table-1).

**Table 1.** Distribution of demographic characteristics (N=979)

	n	%
<b>Gender</b>		
Women	668	68.23
Men	311	31.77
<b>Age range</b>		
Between 18-24	98	10.01
Between 25-34	238	24.31
Between 35-44	387	39.53
Between 45-54	206	21.05
Aged 55 and over	41	5.10
<b>Place of residence</b>		
İstanbul	691	70.6
Ankara	39	4
İzmir	19	1.9
Other cities	230	23.5
<b>Occupation</b>		
Nurse/Health Officer/Midwife	284	29.01
Support workers who are health workers	121	12.36
Teacher, Lawyer, Police officer	95	9.7
Health Academicians, Licensees and Technicians	89	9.09
Housewife	63	6.44
Banker/Accountant/Economist	40	4.09
Freelancer	32	3.27
Doctor	31	3.17
Others	224	22.88
<b>Marital status</b>		
Married	647	66.1
Single	332	33.9
<b>Status of Having a Child</b>		
None	384	39.2
1 Child	214	21.9
2 Children	287	29.3
3 Children and over	94	9.6
<b>Presence of Chronic Diseases</b>		
None	694	70.2
Presence of a Chronic Disease	140	14.3
Presence of Multiple Chronic Diseases	145	15.5
<b>COVID-19 Diagnosis Status</b>		
Yes	239	24.4
No	740	75.6
<b>Availability of COVID-19 Vaccine</b>		
Yes	418	42.7
No	561	57.3

Participants marked more than one option for the questions about benefiting from traditional and complementary medicine approaches, using nutritional and food supplements before and during the coronavirus pandemic in the last 10 years and it was determined that phytotherapy method was the most used (15%) among the TCM methods, and vitamin D (49.9%) was the most used nutritional and food supplements before the coronavirus pandemic, and vitamin C (48.1%) was the most used during the coronavirus pandemic (Table-2).

When the relationship between the use of food and food supplements before the coronavirus pandemic and the status of being diagnosed with COVID-19 was examined, it was seen that no food and food supplement decreased the frequency

of being diagnosed with COVID-19. It was determined that individuals using Black Elderberry extract, propolis and vitamin C were diagnosed with COVID-19 at a higher rate ( $p < 0.05$ ) (Table-3). In addition, when the relationship between the use of food and food supplements and the status of being diagnosed with COVID-19 during the coronavirus pandemic period was examined, it was determined that no nutritional and food supplement decreased the frequency of being diagnosed with COVID-19. It was observed that individuals using black cumin oil, propolis, vitamin C, ginger and mixed herbal teas were diagnosed with COVID-19 at a higher rate ( $p < 0.05$ ) (Table-3).

**Table 2.** Utilization of traditional and complementary medicine methods and use of nutritional and food supplements\*

Questions	Which and/or which of the traditional and complementary medicine approaches have you benefited from in the last 10 years?		Nutritional and food supplements	Which and/or which of the following food and nutritional supplements did you use before the coronavirus pandemic?		Which and/or which of the following food and nutritional supplements have you used during the coronavirus pandemic?	
	n	%		n	%	n	%
<b>Approache</b>							
<b>Acupuncture</b>	85	8.7	<b>Beta Glucan</b>	65	6.6	91	9.3
<b>Leech Therapy</b>	41	4.2	<b>Vitamin D</b>	489	49.9	164	16.8
<b>Cup Therapy</b>	120	12.3	<b>Vitamin C</b>	428	43.7	471	48.1
<b>Phytotherapy</b>	147	15	<b>Zinc</b>	191	19.5	218	20.3
<b>Ozone Therapy</b>	56	5.7	<b>Omega 3</b>	243	24.8	184	18.8
<b>Hypnosis</b>	14	1.4	<b>Collagen</b>	78	8	84	8.6
<b>Mesotherapy</b>	23	2.3	<b>Elderberry extract</b>	72	7.4	109	11.1
<b>Reflexology</b>	22	2.2	<b>Propolis</b>	149	15.2	162	16.5
<b>Homeopathy</b>	12	1.2	<b>probiotic</b>	208	21.2	123	12.6
<b>Apitherapy</b>	3	0.3	<b>Black cumin oil</b>	141	14.4	107	10.9
<b>Chiropractic</b>	14	1.4	<b>Ginger</b>	334	34.1	232	23.7
<b>Osteopathy</b>	2	0.2	<b>Mixed herbal teas</b>	359	36.7	182	18.6
<b>Prolotherapy</b>	4	0.4	<b>Combined vitamins (B, C, E vit etc.)</b>	243	24.8	241	24.6

\*Multiple options ticked

**Table 3.** The relationship between the use of nutritional and food supplements before and during the coronavirus pandemic and the status of being diagnosed with COVID-19 (N=979)

Nutritional and food supplements	Usage status	Before the coronavirus pandemic			During the coronavirus pandemic		
		People diagnosed with COVID – 19 (n:239)	People who are not diagnosed with COVID – 19 (n:740)	p	People diagnosed with COVID – 19 (n:239)	People who are not diagnosed with COVID – 19 (n:740)	p
Black cummin oil	Using	41	100	0.163	39	68	<b>0.002*</b>
	Not using	198	640		200	672	
Omega-3	Using	64	179	0.420	51	133	0.247
	Not using	175	561		188	607	
Propolis	Using	47	103	<b>0.032*</b>	55	107	<b>0.002*</b>
	Not using	192	637		184	633	
Probiotic	Using	58	150	0.189	29	94	0.818
	Not using	181	590		210	646	
Collagen	Using	21	57	0.591	18	66	0.505
	Not using	218	683		221	674	
Combined vitamins	Using	68	175	0.135	60	181	0.840
	Not using	171	565		179	559	
Black elderberry extract	Using	30	42	<b>0.000**</b>	32	77	0.202
	Not using	209	698		207	663	
Beta glucan	Using	21	44	0.125	22	69	0.956
	Not using	218	696		217	671	
Vitamin D	Using	132	357	0.060	130	352	0.070
	Not using	107	383		109	388	
Vitamin C	Using	125	303	<b>0.002*</b>	130	341	<b>0.025*</b>
	Not using	114	437		109	399	
Ginger	Using	82	252	0.942	76	156	<b>0.001**</b>
	Not using	157	488		163	584	
Zinc	Using	57	134	0.051	55	163	0.750
	Not using	182	606		184	577	
Mixed Herbal Teas	Using	80	279	0.238	63	119	<b>0.000**</b>
	Not using	159	461		176	621	

Mann-Whitney U; \*p<.05; \*\*p<.001

#### 4. DISCUSSION

Although the effect of traditional and complementary medicine practices on modern medicine has not been proven yet, the rate of use by individuals is quite high today. With modern life, the belief that natural products are better and more reliable on individuals instead of pharmacological agents is shown as one of the main reasons for this rise in use (5).

While the use of any of the TCM methods in healthy adult individuals is 40% in the United States (USA), this rate is around 80% in Turkey (6). While the use of TCM in sick individuals with any chronic disease varies between 4 and 79% in various countries of the world; In studies conducted in Turkey on this subject, it has been reported that TCM use is between 12-76% (7). In the study of Güven et al. (8) in 2013, hypertension patients used TCM methods to lower high blood pressure; In the study of Kaynak and Polat (9) in

2017, in order to regulate the blood sugar level of diabetes patients; In the study of Saghatchian et al. (10) in 2014, it was reported that patients with breast cancer resorted to TCM methods to prevent or reduce the side effects of treatment. In this study, it was observed that the majority of individuals (70.2%) did not have any chronic disease, and individuals with one chronic disease (14.3%) and more than one chronic disease (15.5%) were identified. It has been determined that there is no difference in the use of TCM between those with and without chronic disease due to the low number of patients with chronic diseases. When we look at the literature, we see that the elderly population is mostly diagnosed with chronic diseases. The reason for the high rate of those without chronic diseases in the present study was that the age population of the participants was under

55 (94.6%), and we think that this may affect the use of TCM methods.

In the study of Paltiel et al. in Israel in 2001, the types of TCM used in terms of frequency were homeopathy, relaxation therapy and reflexology, respectively; In the USA, it has been reported that there are spiritual treatments (35%), vitamins and herbs (41%), body/mind therapies (10%) (11). In the study conducted by Frass et al. in 2012, it was stated that there was a significant increase in the use of TCM applications in all countries between 1990 and 2006, and the most commonly used TCM methods were herbal treatments, chiropractic applications, massage and homeopathy (12). In the study of Lafci and Kasikci with healthcare professionals, 25% of the individuals used at least one TCM method, along with herbal treatment and massage being the most common TCM methods; It has been reported that the methods with the most information are acupuncture, herbal therapy, dietary support and massage, respectively (13). In this study, it was determined that phytotherapy was used the most (15%) among the TCM methods, vitamin D (49.9%) was the most used nutritional and food supplement before the coronavirus pandemic, and vitamin C (48.1%) was the most used during the coronavirus pandemic. When we look at the differences in the use of TCM methods in the countries and in the present study, the geographical location of the countries, the economic and socio-cultural levels of the countries may be effective in terms of the ease of accessing the TCM methods, the abundance of studies on vitamin D and vitamin C in the literature in recent years, the fact that nutritional and food supplements and medicinal plants are mentioned frequently in social media and news programs, the rate of health workers in this research being high (53.63%) can be said. In the past, herbal medicines have played an important role in the control of infectious diseases. Clinical evidence from a number of studies of herbal medicine in the treatment of SARS coronavirus (SARS-CoV) has shown important results and supported the idea that herbal medicine is effective and beneficial in the treatment/prevention of epidemics (14). In a Cochrane systematic review by Liu et al., it was reported that herbal treatments combined with Western medicine can reduce symptoms and improve quality of life in SARS-CoV patients (15). In the meta-analysis by Luo et al., it was also reported that herbal treatments reduced the rate of H1N1 influenza infection (16). According to the results of Kalayci et al.'s studies; It has been emphasized that the process has been successfully overcome in COVID-19 disease in China by evaluating the mechanisms that affect the immune system in general, phytotherapy and acupuncture, which are TCM methods, together with modern western medicine applications (17). Similarly, in the study of Ucar et al., it is reported that "it would be beneficial to use phytotherapy as an integrative treatment method, alongside conventional treatment" in the treatment of COVID-19 (18). In the review made by Liu et al., it was stated that herbal medicines used in the COVID-19 pandemic in China were effective in the mild course of the disease, but were not effective due to insufficient clinical studies of some drugs (19). In the study

conducted by Ma et al., herbal medicines used in Chinese medicine were examined in the laboratory environment, which component was good for which symptom, and determinations were made. The result of this study suggests us to choose the appropriate drug for our symptom and use it (20). In this case, it is necessary to question the clinical study of the drug well before starting to use herbal medicines. In this study, it was determined that none of the nutritional and food supplements reduced the frequency of COVID-19 diagnosis before the pandemic, and individuals using black elderberry extract, propolis and vitamin C were diagnosed with COVID-19 at a higher rate ( $p < 0.05$ ). In the pandemic period, it was observed that again none of the nutritional and food supplements reduced the frequency of being diagnosed with COVID-19, and individuals using black cummin oil, propolis, vitamin C, ginger and mixed herbal teas were diagnosed with COVID-19 at a higher rate ( $p < 0.05$ ). In this research, 24.4% (n:239) of the participants were infected with the COVID-19 virus, the risk of catching the COVID-19 virus of the healthcare worker was high and the participation rate was high (53.63%), again due to the high percentage of healthcare workers considering that 42.7% (n:418) were vaccinated against COVID-19, it was not possible to evaluate the effectiveness of nutritional and food supplements on individuals. In addition, in the present study, it was not questioned whether the patients diagnosed with COVID-19 had mild symptoms, whether they were hospitalized or not, and it was not possible to obtain information about whether the nutritional and food supplements had mild symptoms. In order to evaluate the effectiveness of nutritional and food supplements, it is thought that there is a need for studies by questioning whether the study sample is equal or close to equal numbers in terms of occupation, age, whether they are infected or not, and whether the patients diagnosed with COVID-19 have mild symptoms.

## 5. CONCLUSION

The use of traditional and complementary medicine practices has increased rapidly from past to present. In this study, which aims to determine which traditional and complementary medicine applications are used and its effectiveness in the pandemic, it has been observed that no food and nutritional supplement reduces the frequency of receiving COVID-19. In order to evaluate the effectiveness of nutritional and food supplements, it is recommended that the sample of the participants be equal in terms of occupation, age and whether they are infected and whether they are questioned and supported by research. Those diagnosed with COVID-19 have mild symptoms.

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**Ethics Committee Approval:** This study was approved by Ethics Committee of Ministry of Health

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