

## Use of Alternative Medicine During the COVID-19 Pandemic: An International Survey

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### Abstract

**Background:** The COVID-19 pandemic emerged in 2019 as an aggressive respiratory disease. The highly contagious virus spread worldwide and affected millions of people. Due to the novelty of the virus, there was no consensus on effective treatment; consequently, many supportive therapies were commonly used. The primary goal of this study was to determine the use of alternative medicine products (AMP) commonly used during the COVID-19 pandemic and the user's perception of their benefit.

**Methods:** For this cross-sectional study, a 20-question survey was created using Google forms. It was distributed via social media from March to May 2022 to subjects at least 18 years of age from different countries. The survey explored participants' demographics, general health conditions, which alternative medicine products (AMP) were used and why, and COVID-19 infection and immunization history. Data was obtained and analyzed using Google Sheets. Descriptive statistics were used to report results. IRB approval was obtained.

**Results:** A total of 162 responses were obtained. The great majority of participants were from North America (n = 114; 70.4%), followed by Asia (n = 18; 11.11%) and South America (n = 15; 9.25%). The mean age was 35.55 years (+/- 13.6) and 68.5% were female. Most participants hold a BS (41.4%) or MS (21%) degree. More than half (56.7%) had received 3 doses of the vaccine while only 9% had received none. Most participants use AMPs (n = 148; 91.4%) either always or regularly (51.2%) to either prevent or lessen COVID-19 symptoms 116 (71.6%). The most common AMP used were Vitamin C (56.8%), Vitamin D (54.3%), Zinc (42.6%), and antioxidants (27.7%). Over 70% of subjects (n = 107) reported that the use of AMP let them achieve their desired results.

**Conclusion:** Despite the limited scientific data supporting the use of alternative medicine products during the COVID-19 pandemic, the results from the survey indicate that they are often used even by fully vaccinated individuals. This use is due in part to the belief that it would help prevent and/or lessen symptoms associated with the virus.

**Keywords:** COVID-19 Pandemic; Respiratory Disease; Alternative Medicine Products (AMP)

### Introduction

In December of 2019, the first case of respiratory disease attributed to SARS-CoV-2, now commonly known as COVID-19, was reported in the Province of Wuhan, China [1]. By April 9, 2024 the World Health Organization (WHO) reported over 775 million confirmed cases worldwide and more than 7 million deaths [2]. In addition, the WHO acknowledged that a public health emergency was occurring [3].

Though most patients who contracted the virus exhibited mild symptoms and went on to experience good outcomes, some developed severe acute respiratory infection, pneumonia, or acute respiratory distress syndrome. In these more severe cases, supportive interventions included such as oxygen therapy, noninvasive or invasive ventilation, antiviral drugs, and corticosteroid therapy were often required [4].

Despite ongoing global efforts in drug research and vaccine development, there is no effective standard treatment for COVID-19 as of today. Therefore, the general population has been inclined to consider therapies from both modern and alternative medicine [5]. Because the primary concern of conventional medicine is currently directed at appropriately allocating resources and life-saving interventions to those with severe infection, many have turned to self-care practices, including the use of alternative medicine products (AMPs) with the intention of preventing the acquisition of the novel COVID-19 virus or lessening the duration of illness and the intensity of associated physical effects [6,7]. While rationale for considering AMPs varies, the top three most common reasons include: safety of alternative medicine, dissatisfaction with conventional medicine, and perceived benefits such as the alleviation of symptoms, reduction of side effects from conventional medicine, or prevention of disease [7].

Alternative medicines and therapies take on many different faces, varying widely by region and culture. These practices can be spiritual when they involve a ritual, physical when manipulating the body, or medicinal when they include the ingestion of substances such as herbs, vitamins, or minerals [8]. They can be practiced alone or combined with western medicine. In China, for example, herbal medicines including *lianhuaqingwen* and *huoxiang zhengqi* capsules are consumed in hopes of achieving lessened symptoms [9,10]. Other examples of AMPs include the use of medications such as Ivermectin, Hydroxychloroquine, or Azithromycin, and the use of supplements such as antioxidants (Vitamin C, glutathione precursors), or Zinc [11-14]. Use of guided imagery, acupuncture, and yoga has also been documented and may be classified as an alternative therapy [15,16]. Limited evidence is available regarding use and efficacy of these alternative therapies. One of these is the documented anti-inflammatory/immune enhancing actions of Vitamin-D within the lungs. The often-personal nature of these treatments and their infrequent monitoring leads to a lack of knowledge overall regarding alternative therapies and the role they may have as supportive treatments with potential to improve clinical symptoms, reduce hospital stay lengths, and aid in elimination of the disease, reducing mortality [16,17].

### Goal of the Study

The primary goal of this study was to gain insight regarding which alternative medicine products have been more commonly used for the management of COVID-19 in some parts of the world. Secondly, this study aimed to learn about the perceived efficacy and impact on COVID-19 prevention or disease duration and intensity.

### Materials and Methods

This cross-sectional study was conducted as an international 20-item questionnaire distributed via social media to subjects at least 18 years of age from March to May 2022. The eligibility, demographics, general health condition, type of AMP used, and the responders' COVID-19 infection and immunization history were explored. The institutional IRB approved the research project as an expedited human exempt research.

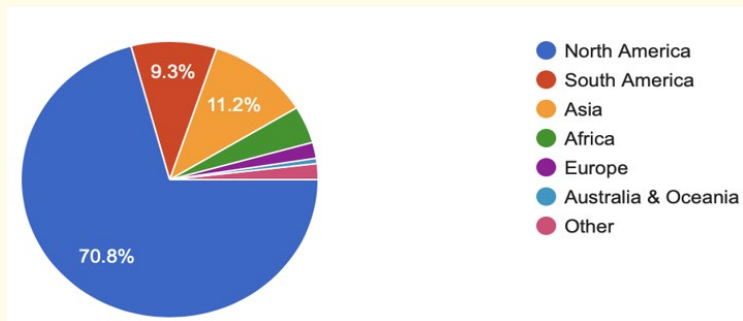
The population surveyed consisted of adults from several countries around the world. Individuals eighteen years or older who could read and understand English were eligible to participate in the study. Individuals under eighteen years of age or those who could not read and understand English were excluded from the study.

Four categories of information were collected from participants: demographics (age, gender, race, region, education level), health status (comorbidities, vaccinations, prescribed medications), COVID-19 history (prior infections, related hospitalizations, COVID-19 vaccination), and alternative medicine product usage (routine use, during COVID-19 infection, or for preventative measure). Raw data

was automatically collected from Google Forms into Google Sheets, where it was also analyzed. Descriptive statistics were used to report the results of this study.

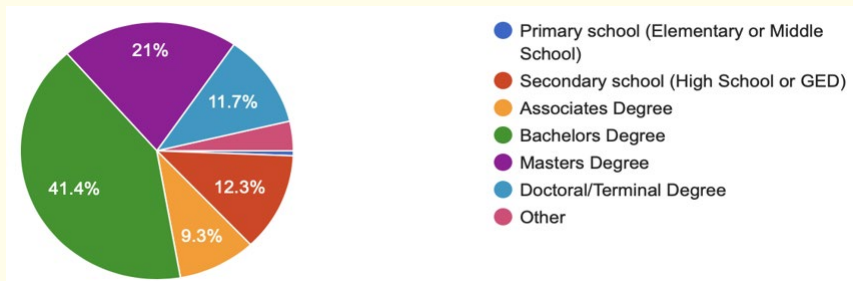
**Results**

A total of 162 survey respondents from several continents including residents mostly from North America (n = 114; 70.8%), followed by Asia (n = 18; 11.2%), and South America (n = 15; 9.3%), completed the survey (Figure 1).



**Figure 1:** Region of residence for survey participants.

Most participants completed their bachelor’s degree (n = 67; 41.4%), followed by master’s degree (n = 34; 21%), and secondary school (n = 20; 12.3%) (Figure 2).



**Figure 2:** Level of education of survey participants.

The participants used a variety and combination of AMPs besides their routinely used alternative medicine during the COVID-19 pandemic. Among the alternative medicines that were used, Vitamin D was the most used as part of a routine (54.3%) followed by Vitamin C with (45.1%), Zinc (33.3%), and antioxidants (21%) (Figure 3). During the pandemic, the most used AMP was Vitamin C (56.8%), followed by Vitamin D (54.3%), Zinc (42.6%), and antioxidants (24.7%). More than half the participants (n = 115;71%) used these products to prevent or lessen the symptoms of COVID19 (Figure 3).

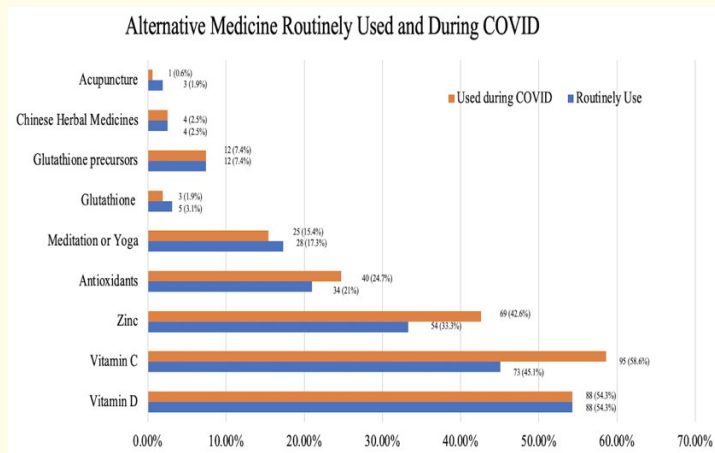


Figure 3: Alternative Medicine Products (AMPs) used routinely and during the pandemic by survey respondents.

Almost two-thirds of the participants (72.3%) claimed achieving their desired results while using alternative medicine.

More than half of survey takers (n = 95; 58.6%) had never tested positive for COVID-19. Most participants (n = 130; 80.2%) followed the recommendations set forth by the CDC to receive the COVID-19 vaccination. Most of the survey takers (95.7%) did not require hospitalization due to COVID-19 infection.

### Discussion

The online survey reached individuals from many countries, but the majority of participants resided in North America and were of either Caucasian/White or Hispanic/Latino descent. The demographic results revealed a majority of subjects held at least a bachelor’s degree, were up to date on vaccinations including COVID-19 vaccines and did not have chronic diseases.

The results suggested that more than half of people use alternative medicine products. A majority of those respondents used AMPs with the intention of preventing COVID-19 or lessening its symptoms. A large majority of the participants believe supplements and/or alternative medicine should be considered in addition to prescribed medications to improve outcomes of patients with COVID-19. During the height of the pandemic when no standardized practices were established, the importance of maintaining a healthy diet was shared. An optimal nutrient status should contains micronutrients including vitamin A, vitamin D, vitamin C, vitamin E, B vitamins, zinc, selenium, iron, and glutathione precursors to reduce inflammation and oxidative stress; therefore, strengthening the immune system [14].

After living in the COVID-19 pandemic from March of 2020 to May of 2022, more than half of respondents reported they have never tested positive for COVID-19. Given the widespread impact and the highly contagious nature COVID-19, we found that result impressive. Of those that had tested positive, a large majority were not hospitalized and most experienced illness for one week or less. This may be correlated to the survey population’s use of AMP and confirm their belief that the use of AMP has achieved the results they were expecting.

The observed use of vitamin D, vitamin C, zinc, glutathione precursors, and other antioxidants from the current study is reasonable given the available literature on their health benefits. Vitamin D supplementation during the pandemic was recommended to those at risk of Vitamin D deficiency since this vitamin has been shown to reduce the risk in acute viral respiratory tract infections and pneumonia due to its ability to directly inhibit viral replication and its anti-inflammatory and immunomodulating properties [15]. Vitamin C has well documented antioxidant, anti-inflammatory, and antiviral properties that support the recommendation of low dose Vitamin C taken

prophylactically, and in severe COVID-19 cases, taken intravenously at high doses to reduce the amount of IL-6 and other inflammatory mediators responsible for the immune hyper reaction that leads to severe COVID pneumonia [16]. Zinc plays many important roles, including antiviral effects, differentiation of immune cells, modulation of cytokine response, and activation of T lymphocytes [14]. Zinc deficiency may lead to an increased risk of viral infections [14]. When Vitamin D, Vitamin C, Vitamin B12, and iron intake levels are suboptimal, it has been to be correlated with either increased incidence of COVID-19 or mortality [17]. Although health benefits of alternative medicine such as Vitamin D, Vitamin C, and Zinc supplementation have been well documented, there is a lack of scientific data supporting the use of alternative medicine products in addition to prescribed medications as a method of treating COVID-19.

A similar survey study conducted in India found asymptomatic COVID-19 patients that used complementary alternative medicine and home remedies most commonly consumed Ayurvedic Kadha, a drink prepared by the extraction of various herbs [18]. The Ayurvedic method of preparing Kadha most commonly includes the following herbs: Tulsi, Ginger, Clove, Cardamom, Ashwagandha, and Giloy [18]. Ayurvedic Kadha may not have been revealed as a common AMP in the current study given the percentage of Asian participants (12.3%).

Although the current study captured results from 7 participants currently residing in Africa (4.3%), results coincide with a similar survey study conducted in Egypt which found relatively higher use of Vitamin C, Vitamin D, immune system boosting drinks, honey, garlic, turmeric, and ginger during the COVID-19 pandemic compared to other vitamins, medicinal plants, and immune boosters [11]. A study conducted in the United States revealed older adults started taking vitamins and supplements including Zinc and vitamin C during the height of the pandemic [19]. Both studies revealed the common use of Vitamin C, Vitamin D, and antioxidants during the COVID-19 pandemic, supporting the results of the current study [20-24].

There are some limitations to our study. This was a relatively small sample size. We believe that an online sampling approach may have prevented the participation of individuals with no or limited internet access. Given the lack of diversity of subject participants, the results of the survey may lack representation from an international perspective, from individuals with lower levels of education, or those that decided not to receive COVID-19 vaccines. Survey questions with none of the above or other as answer choices did not give the respondents the ability to expand on their answer and may have decreased the number of results to analyze. Another limitation is the lack of research available at the time of our study due to COVID-19 being a recent occurrence.

Despite the limitations, our survey covered a wide range of alternative medicine products representing many of those used by people around the world. The survey was easily accessible through the internet, allowing us to reach participants worldwide. Since Google forms prevents participants from taking the survey multiple times, this feature ensured the sample size was accurate, while maintaining anonymity.

## Conclusion

While there is a big gap of knowledge regarding the use of alternative medicine products during the pandemic, the results from the survey seem to indicate that they are often used, in part due to the belief that it would help prevent and/or lessen symptoms associated with the virus. In addition, 81% of participants followed the recommendation set forth by the CDC to receive the COVID-19 vaccination. It also seems that being vaccinated did not cause a decrease in the use of alternative medicine products.

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