



(RESEARCH ARTICLE)



## Perceived effectiveness of *Curcuma longa* (turmeric) as an adjunct therapy for COVID-19 symptoms based on Leventhal's theory among selected residents in Masbate, Bicol region

Pamela Ivy C Naparan <sup>1,\*</sup>, Patrizia Lynne P Ascaño <sup>2</sup>, Marlon B Manabat <sup>2</sup>, Jalilah T Moctar <sup>2</sup>, Krizza Mae L Nolasco <sup>2</sup>, Ma Lyka Angela S Perez <sup>2</sup>, Mary Ann M Ramirez <sup>2</sup>, Lyka Marie L Ruado <sup>2</sup> and Rachele Joy N Torriana <sup>2</sup>

<sup>1</sup> School of Pharmacy, Centro Escolar University-Manila, 9 Mendiola St., San Miguel, Manila 1008, Metro Manila, Philippines.

<sup>2</sup> The Graduate School, Centro Escolar University-Manila, 9 Mendiola St., San Miguel, Manila 1008, Metro Manila, Philippines.

GSC Biological and Pharmaceutical Sciences, 2022, 21(02), 082–087

Publication history: Received on 27 September 2022; revised on 03 November 2022; accepted on 06 November 2022

Article DOI: <https://doi.org/10.30574/gscbps.2022.21.2.0422>

### Abstract

A patient's immune status plays an essential role in COVID-19 infection. Different alternative medicines arise, along with the increasing number of patients experiencing the symptoms, considering the limited supply of medication against COVID-19. Non-pharmacological and self-care options were actively pursued by the number of people interested in improving and modifying their healthy lifestyle by using medicinal plants such as the *Curcuma longa* (turmeric) as an adjunct therapy and prevention option for the illness. In line with this, Leventhal's theory of Common Sense Self-Regulation proposes that people practice emotional and cognitive representations of illness, which serve as the main factors of health behaviors to prevent and manage the disease. With this, individuals' perceptions about COVID-19 will be pertinent to precluding or adjusting to the ailment. Furthermore, Masbate, Bicol region traditional health knowledge is abundant. The use of medicinal plants as first-aid such as colds, fevers, and flu is widespread in Masbate. This study aims to determine the perceived effectiveness of *Curcuma longa* (Turmeric) as an adjunct therapy for COVID-19 symptoms based on Leventhal's Theory among selected residents in Masbate, Bicol region. The study utilizes a Descriptive-Quantitative approach using the questionnaire made by the researchers with the combination of the Brief-Illness Perception Questionnaire and distributed with the respondents by convenience sampling, snowball sampling, and an actual interview. The pilot test highlighted the reliability of reports as the indicator significantly associated with the respondents' level of satisfaction on the utilization of *Curcuma longa* (Turmeric).

**Keywords:** Adjunct therapy; COVID-19; *Curcuma longa* (Turmeric); Perceived effectiveness

### 1. Introduction

Corona Virus 2019 (COVID-19) is an infectious disease caused by a virus named SARS-CoV-2. Around 200 million cases have been reported worldwide, with those with impaired immune systems, chronic diseases, and the elderly being high-risk populations (World Health Organization-Europe, 2020). Most people infected with the virus will experience symptoms such as shortness of breath, disorientation, and loss of taste or smell. When people experience these symptoms, their perception of illness plays a big role in how they address disease prevention and management. People tend to develop representations of illness experiences through emotional and cognitive effects. Since there are a million cases of COVID-19 in the country, and thousands of new cases have been reported every day, many people are afraid and seek alternative options as preventives and treatments, such as herbal remedies for COVID-19 symptoms.

\* Corresponding author: Pamela Ivy C Naparan

Centro Escolar University-Manila, School of Pharmacy, 9 Mendiola St., San Miguel, Manila 1008, Metro Manila, Philippines.

Furthermore, herbal remedies and alternative therapies have traditionally been used to relieve the symptoms. The global need for COVID-19 vaccines and medications does not assure enough supply to the Philippines. A herbal remedy with immunomodulatory properties such as *Curcuma longa* (Turmeric) could be helpful for preventative and possibly therapeutic treatment. Turmeric, a medicinal plant with curcumin as the primary active ingredient, is commonly used in Asia. It has been long utilized for various treatments. In some studies, *Curcuma longa* (Turmeric) has been shown to lessen the symptoms of COVID-19, such as fever, sore throat, muscle pain, and loss of taste or smell (Nutra, 2022). Turmeric also possesses phytochemicals with possible action against the SARS-CoV-2 virus, as well as beneficial properties in the prevention of COVID-19. This research aims to determine the potential effectiveness of *Curcuma longa* (Turmeric) as a medicinal plant and adjunct therapy for COVID-19 symptoms.

## 2. Material and methods

Descriptive quantitative research was used in the study as an approach for obtaining quantifiable information for statistical analysis of the population sample used in the present study. This method determines the perceived effectiveness of *Curcuma longa* (Turmeric) as an adjunct therapy for COVID-19 symptoms based on Leventhal's Theory. The study took place at Masbate, Bicol region, mainly the three barangays selected. Masbate is a Philippine province in the Bicol Region that encompasses the Philippines' southeastern peninsula of Luzon as well as the outlying island provinces of Masbate and Catanduanes. Its capital is Masbate City and consists of three major islands: Masbate, Ticao and Burias (Phil Atlas, 2021).

The instrument used in the study was a self-made questionnaire checklist together with the Brief Illness perception Questionnaire composed of a 7 item checklist. The questionnaire consists of six parts that includes the demographic profile of the respondents, symptoms of COVID-19 encountered, illness perception questionnaire, essential information properties in the prevention of COVID-19. This research aims to determine the potential effectiveness of *Curcuma longa* (Turmeric) as a medicinal plant and adjunct therapy for COVID-19 symptoms. The data was gathered from the respondents through questionnaires provided by the members, social media postings, and actual interviews in Masbate's selected barangays. The data from the responders, on the other hand, was collected and assembled automatically using Google forms and then documented. Due to the fact that Covid-19 was still a threat in every human life, whether or not many were vaccinated, some data was collected in the field of study, and some was collected online for safety reasons.

## 3. Results and discussion

This study has a total of 170 respondents which are mostly female (71%), aged 30 and below (75%), college undergraduates (55%), and Roman Catholic (74%) as the religion. Additionally, the majority of the respondents has a monthly income of below 10,000 Php (55%), mostly living in Barangay Ibingay (42%).

**Table 1** Summary of Responses on the Cognitive Response of the Participants to COVID-19 Symptoms

Statement	Weighted Mean	Verbal Interpretation
I think COVID-19 symptoms affect my life	2.82	Moderately affects my life
I think COVID-19 will continue for a long time	2.86	Long time
I think that I have considerable control over COVID-19 symptoms	2.32	Partly controlled
I considerably experience symptoms from COVID-19	2.00	Minimally have symptoms
I am concerned about my COVID-19 symptoms	2.80	Very concerned

Item 1 Legend: "1- No effect at all (1.00-1.75)", "2- Rarely affects my life (1.76-2.50)", "3- Moderately affects my life (2.51-3.25)", "4- Severely affects my life (3.26-4.00)"; Item 2 Legend: "1- A very short time (1.00-1.75)", "2- Short Time (1.76-2.50)", "3- Long Time (2.51-3.25)", "4- Forever (3.26-4.00)"; Item 3 Legend: "1- Absolutely no control (1.00-1.75)", "2- Partly controlled (1.76-2.50)", "3- Well controlled (2.51-3.25)", "4- Extreme amount of control (3.26-4.00)"; Item 4 Legend: "1- No symptoms at all (1.00-1.75)", "2- Minimally have symptoms (1.76-2.50)", "3- Severe symptoms (2.51-3.25)", "4- Many severe symptoms (3.26-4.00)"; Item 5 Legend: "1- Not at all concerned (1.00-1.75)", "2- Slightly concerned (1.76-2.50)", "3- Very concerned (2.51-3.25)", "4- Extremely concerned (3.26-4.00)"

The study participants from a chosen group of residents in Masbate, Bicol were found to be relatively affected by the COVID-19 symptoms, as per the researchers' assessment of the respondents' data on cognitive response. According to Alsukah et al., the pandemic has several effects on human behavior, emotions, and cognition, resulting in a wide range of reactions in response to illness awareness. As a result, Filipinos' cognitive responses to COVID-19 are influenced by

their dispositions, level of attachment, and disease exposure. Their mode of thinking from past experiences, emotions experienced when their loved ones are sick, and the expected behavior for future events are all contributing causes of their respective behaviors.

**Table 2** Level of Assessment of Respondents in terms of their Emotional Response

Statement	Weighted mean	Interpretation
I worry about the coronavirus all the time.	3.47	OFTEN
I feel afraid when I think about my COVID-19 symptoms	2.92	SOMETIMES
I feel irritable when I think about my COVID-19 symptoms	2.62	SOMETIMES
I feel sad when I think about my COVID-19 symptoms	2.90	SOMETIMES
I feel preoccupied when I think about my COVID-19 symptoms	2.72	SOMETIMES
I feel stress when I think about my COVID-19 symptoms	2.94	SOMETIMES

Table 2 shows the perception of the respondents to the Effect of *Curcuma longa* based on Emotional Response. Statement 1 has a weighted mean of 3.47 which is verbally interpreted as often. Statement 2 has a weight mean of 2.92 which is verbally interpreted as sometimes. Statement 3 has a weighted mean of 2.62, which is verbally interpreted as sometimes. Statement 4 has a weighted mean of 2.90 which is verbally interpreted as sometimes. Statement 5 has a weighted mean of 2.73 which is verbally interpreted as sometimes. Statement 6 has a weighted mean of 2.94, which is verbally interpreted as sometimes. Among the indicators of Emotional Response, statement 1 got the highest weighted mean, this is due to the fact that people develop Covid-19 anxiety syndrome. This syndrome manifests as the inability to leave the house because of COVID-19 fears, frequent checking for symptoms despite not being in a high-risk scenario, and avoiding social situations or people (MedicalNewsToday, 2021).

These illness representations is a factor that has been linked to emotional and psychological wellness when a person faces a serious health danger. When confronted with a health concern, people construct dynamic and interactive cognitive and emotional representations of their experience, which they use to understand and efficiently manage with the threat, according to the Common-Sense Model (Karademas, E.C., et al, 2021).

**Table 3** Test of Difference: Perceived Effectivity of *Curcuma longa* (Turmeric) Considering the Symptoms Experienced and Age Group of Respondents

Symptoms Experienced	Age Group	Perceived Effectivity Mean Score	P-Value	Remarks
Most Common Symptoms	20 - 30 years old	2.85	0.05	Significant
	31- 40 years old	2.83		
	41 - 50 years old	3.15		
	51- 60 years old	3.28		
	61 years old and above	3.35		
Less Common Symptoms	20 - 30 years old	2.40	0.43	Not Significant
	31- 40 years old	2.02		
	41 - 50 years old	2.48		
	51- 60 years old	2.52		
	61 years old and above	2.40		
Severe Symptoms	20 - 30 years old	2.13	0.09	Not Significant
	31- 40 years old	1.73		
	41 - 50 years old	2.10		
	51- 60 years old	1.69		
	61 years old and above	1.40		

A statistical treatment analysis of variance was used to ascertain the perceived efficacy of *Curcuma longa* (Turmeric) as an adjunct therapy for Covid-19 symptoms considering the age distribution of the respondents. A P-value greater than 0.05 was categorized as non-significant.

Table 3 shows the Perceived Effectivity of *Curcuma longa* (Turmeric) considering the symptoms experienced and age group of respondents. It goes to show that among those who experience the most common symptoms, the effectiveness of *Curcuma longa* significantly varies depending on their age, and respondents belonging to age 61 years old and above perceived *Curcuma longa* to be most effective among other group ages. This is due to the fact that two-thirds of people over age of 65 are using herbal medicines because the contribution of herbal medicines to adverse drug reactions (ADRs), hospitalization, and nonadherence to conventional medications is still unknown (Population Health Learning Network, 2008). Furthermore, several research shows that the elderly consider these herbals can treat ailments, relieve symptoms, and promote overall health. In addition, the elderly held the strongest views on the use of herbal medicines as alternatives to conventional medications. (Sumngern C., 2011).

**Table 4** Test of Difference: Perceived Effectivity of *Curcuma longa* (Turmeric) Considering the Symptoms Experienced and the Frequency of Usage Taken by the Respondents

Symptoms Experienced	Frequency of usage	Perceived Effectivity Mean Score	P-value
Most common symptoms	Daily	2.91	0.18
	Every other day	3.04	
	Once a month	2.69	
	Once a week	2.92	
Less common symptoms	Daily	2.38	0.90
	Every other day	2.44	
	Once a month	2.32	
	Once a week	2.38	
Severe symptoms	Daily	2.13	0.06
	Every other day	1.79	
	Once a month	2.17	
	Once a week	2.20	

A statistical treatment ANOVA was used to ascertain the perceived efficacy of *Curcuma longa* (Turmeric) as an adjunct therapy for Covid-19 symptoms considering the frequency of use taken by the respondents. A P-value greater than 0.05 was categorized as non-significant.

Table 4 shows the Perceived Effectivity of *Curcuma longa* (Turmeric) Considering the Symptoms Experienced and the Frequency of Usage Taken by the Respondents. It goes to show that the effectiveness of *Curcuma longa* does not significantly vary according to symptoms experienced and frequency of usage taken by the respondents.

Below table 5 shows the Perceived Effectivity of *Curcuma longa* (Turmeric) Considering the Symptoms Experienced and the Frequency of Usage Taken by the Respondents. It goes to show that among those who experience the most common symptoms, the effectiveness of *Curcuma longa* significantly varies depending on their frequency of use, and respondents who used *Curcuma longa* for more than 5 months perceive *Curcuma longa* to be most effective among others. According to a study, this is because people utilize herbal medications on a seasonal basis. This prompted people to seek out herbal therapy when a specific therapeutic method was required. It could also reflect the notion that health-oriented conduct is only significant for people when they are facing a serious health hazard, not while they are healthy (BMC, 2018)

Using analysis of variance, the researchers generated a p-value of 0.00 hence, we reject the null hypothesis and conclude that turmeric significantly varies depending on the length of usage who are experiencing the most common symptoms.

**Table 5** Test of Difference: Perceived Effectivity of *Curcuma longa* (Turmeric) Considering the Symptoms Experienced and the Length of Usage Taken by the Respondents

Symptoms Experienced	Length of Usage	Perceived Effectivity Mean Score	P-Value	Remarks
Most Common Symptoms	1 day	2.50	0.00	Significant
	2-3 months	2.77		
	4-5 months	3.18		
	Less than 1 month	2.80		
	More than 5 months	3.27		
	1 yr or more	3.06		
Less Common Symptoms	1 day	1.50	0.12	Not Significant
	2-3 months	2.41		
	4-5 months	2.48		
	Less than 1 month	2.30		
	More than 5 months	2.59		
	1 yr or more	1.88		
Severe Symptoms	1 day	3.00	0.91	Not Significant
	2-3 months	2.04		
	4-5 months	2.03		
	Less than 1 month	2.05		
	More than 5 months	1.98		
	1 yr or more	2.25		

#### 4. Conclusion

Perceived Effectiveness of *Curcuma longa* (Turmeric) as an Adjunct Therapy for COVID-19 Symptoms has no significant link with measurable demographic variables such as age, and frequency of use. However, using analysis of variance, we generated a p-value of 0.05 therefore, we reject the null hypothesis and conclude turmeric significantly varies depending on the formulation, and length of usage of respondents who are experiencing the most common symptoms and severe symptoms.

#### Recommendations

Based on the study conducted, the recommendations to future researchers were as follows:

- Conduct similar studies related to the present research but with a broader scope of respondents that could represent the Philippine population well.
- To include in the study other provinces with high cases of COVID-19 aside from Masbate, Bicol region.
- Evaluate different Complementary and Alternative Medicine (CAM) as adjunct therapy for COVID-19 symptoms.
- Utilize the study to promote awareness to the public concerning the use of *Curcuma longa* (Turmeric) as an adjunct therapy for COVID-19.
- Determine if different formulations affect the efficacy of *Curcuma longa* (Turmeric) as adjunct therapy for COVID-19 symptoms.

- Determine if *Curcuma longa* (Turmeric) is an efficacious and safe option for improving COVID-19 symptoms.
  - Evaluate the efficacy and safety use of *Curcuma longa* (Turmeric) in other types of diseases.
- 

## **Compliance with ethical standards**

### *Acknowledgments*

The authors acknowledged the support of Dr. Cecilia D. Santiago, Mrs. Mylene S. Andal, RPh, MS Pharm, and Centro Escolar University - School of Pharmacy in providing guidance to achieve the study.

### *Disclosure of conflict of interest*

The authors declare no conflict of interest.

### *Statement of ethical approval*

The authors hereby confirm that the study protocol and informed consent underwent review, and were approved by the Centro Escolar University - Institutional Ethics Review Board (CEU-IERB) last April 08, 2022.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

---

## **References**

- [1] Nutra, D. (2022). Turmeric for Colds & Flu Symptoms: Is Curcumin a Good Remedy? <https://divinitynutra.com/health/turmeric-for-colds/>
- [2] PhilAtlas, (2022). Masbate profile. <https://www.philatlas.com/luzon/r05/masbate.html>.  
World Health Organization, (2020). Supporting older people during the COVID-19 pandemic is everyone's business. Retrieved from. <https://www.euro.who.int/en/about-us/regional-director/news/news/2020/04/supporting-older-people-during-the-covid-19-pandemic-is-everyones-business>