

Use of herbal products and dietary supplements and its perception among people during the COVID-19 pandemic

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Abstract

Background: In Nepal herbal medicines are popular and are used along with or instead of allopathic medicines. Scarcity of efficient and new pharmacological treatment and vaccine for COVID-19 has made people find alternative ways to prevent or treat the disease, including measures like use of herbal products. Evidence-based use of herbal products should be implemented to ensure patient safety.

Objectives: To determine the prevalence of use of herbal products during COVID-19 and to find patients perception regarding their use.

Methods: A descriptive online cross-sectional study was conducted among adult Nepali population from 5th February to 6th June 2021 after ethical clearance at Kathmandu Medical College. Convenience sampling was used to request 292 adults who could be traced through social media, living in Nepal, one member from one household were included. Participants unable to respond to English were excluded. Questionnaires consisting of socio-demographic characteristics, use of herbal products, Likert scale to measure perception was used. Data were transferred into Excel sheet and exported to SPSS v.20 for analysis.

Results: Prevalence of use of herbal products during COVID-19 was 206 (70.5%). Most common used products were Lime, Turmeric, Ginger, Honey, and Garlic. Of all, 95 (32.5%) respondents indicated that they preferred herbal products over prescription medicine for prevention and treatment of COVID-19.

Conclusion: The prevalence of use of herbal products was high during the COVID-19 pandemic and almost half of the participants had perception that compared to prescription medicines herbal products were safer, had less adverse effects and were of better quality.

Key words: Coronavirus disease-2019; Nepal; Perception.

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INTRODUCTION

In South Asia it is a common practice to use medicine from plant source.¹ In Nepal herbal medicines are popular and are used along with or instead of allopathic medicines.² There is a general belief that traditional medicines are safer, cheaper, and more effective than allopathic medicines.³

Coronavirus disease 2019 (COVID-19) has caused socio-economic and health crisis globally.⁴ The shortage of new and efficient pharmacological treatment and vaccine for COVID-19 has made people find alternative ways to prevent or treat the disease, including measures like using herbal products and food supplements.^{5,6} Even though plant sources are chemically diverse and have a notable role in new drug development, evidence-based use of herbal products should be implemented to ensure patient safety.^{7,8}

This study was done with an objective to determine the prevalence of use of herbal products during COVID-19 and to find patients' perception regarding their use.

METHODOLOGY

An online descriptive cross-sectional study was carried out from 5th February to 6th June 2021 among general population at department of Pharmacology, Kathmandu Medical College, Duwakot, Bhaktapur, Nepal. Ethical approval was obtained from the Institutional Review Committee (Ref. 1712202004) before conducting the study. Nepalese Population 18 years and above who could be traced through social media, currently living in Nepal, and only one member from one household, willing to give informed consent were included in this study. Participants unable to read and respond to English language were excluded from the study. Convenience sampling technique was used and the sample size was calculated by the formula:

$n = Z^2P(1-P)/d^2$, where n = sample size; Z = level of confidence according to the standard normal distribution (for a level of confidence of 95%, $Z = 1.96$); P = prevalence = 0.221 (22.1% prevalence of use of herbal product)⁹; d = tolerated margin of error = 0.05 (5%).

$$n = \frac{(1.96)^2 \cdot 0.221 \cdot (1-0.221)}{(0.05)^2} = 264.55 \sim 265$$

Considering 10% non-response rate, the total sample size = 292.

The main instrument to collect data was an online questionnaire. Online questionnaire was prepared using Google forms and was sent to participants through social media (Facebook, Instagram, Viber, and WhatsApp), within Nepal. Pretest was conducted among 20 participants for clarity and content prior to dissemination for others.

There were altogether 20 questions/statements including socio-demographic characteristics, use of herbal products, eight questions on Agreement (five points) Likert scale to evaluate perception adopted from Barry.¹⁰ Herbal products in this study implied herbs, medicinal plants, traditional Chinese medicines, and dietary supplements which were mentioned at the start of the survey. The questionnaires that were submitted were checked for proper filling on daily basis. Up to three reminders were sent for people who did not respond.

The data were transferred into Microsoft Excel spreadsheet and later was exported to IBM SPSS Statistics for Windows, version 20 (IBM Corp., Armonk, N.Y., USA) and coded for analysis. Descriptive statistics were used

and variables were represented in terms of frequency and percent.

RESULTS

A total of 292 participants participated in the survey of which 184 (63%) were from the Kathmandu Valley. The age of the participants ranged from 18 to 79 years. Among them 152 (52.1%) were between 25-39 years of age. All of the participants in present study were literate, and most of them 218 (74.7%) had attended University. There were more female participants 166 (56.8%) than male and 147 (50.3%) were married. Around 68 (23.3%) of the participants were involved in health care related career (Table 1).

About 30 (10.3%) of the participants reported that they had been or were currently infected with COVID-19. Similarly, the participants were suffering from comorbidities like Hypertension (12, 4.1%), Thyroid issues (18, 6.2%), and Diabetes (2, 0.7%) (Table 2).

A total of 206 (70.5%) participants used herbal products during the pandemic, to protect themselves from the disease. Friends and family (113, 52.6%) were the main source who suggested the participants to try herbal products and 93 (52.2%) of the participants reported that they obtained the herbal products from their own home (Table 3).

The most consumed products were Lime (153, 16%), Turmeric (149, 15.5%), Ginger (141, 14.7%), Honey (138, 14.4%), and Garlic (99, 10.3%) followed by Giloy (76, 7.9%), Salt water (73, 7.6%), and fenugreek (69, 7.2%) (Table 4).

Regarding perception, 143 (48.9%) of participants agreed or strongly agreed that herbal products are safer than prescription (allopathic) medications. One hundred and fifty-one (51.7%) participants agreed or strongly agreed that prescription medications (allopathic medicines) are more effective than herbal products. One hundred and forty-nine (51%) participants agreed or strongly agreed that herbal products were of good quality. One twenty-eight (43.9%) participants agreed or strongly agreed that herbal products do not have any side-effects. One thirty-three (45.6%) of the participants agreed or strongly agreed that health care providers should recommend herbal products more often. One hundred and seven (36.6%) of the participants remained neutral when asked whether they preferred herbal products over prescription medicine (allopathic medicines) for prevention and treatment of COVID-19. One fifty six (53.4%) participants disagreed or strongly disagreed that they would prefer

herbal products over prescription medicine (allopathic medicine) for chronic medical conditions. For minor ailments 216 (74%) participants agreed or strongly

agreed that they would prefer herbal products rather than prescription (allopathic) medication (Table 5).

Table 1: Participants' socio-demographic characteristics (N =292)

Characteristics	n (%)
Age (in years)	
18-24	115 (39.4)
25-39	152 (52.1)
40-59	23 (7.9)
60-79	2 (0.7)
Sex	
Female	166 (56.8)
Male	126 (43.2)
Marital status	
Single	143 (49)
Married	147 (50.3)
Divorced	2 (0.7)
Residence	
Kathmandu valley	184 (63)
Outside Kathmandu valley	108 (37)
Highest level of education	
Primary or middle school	1 (0.3)
High school	34 (11.6)
Diploma	39 (13.4)
University or college	218 (74.7)
Employment status	
Student	127 (43.5)
Health care related career	68 (23.3)
Employee	60 (20.5)
Business	29 (9.9)
Unemployed/retired/homemaker	8 (2.7)

Table 2: History of medical condition (N=292)

Infected with COVID-19	n (%)
Yes	30 (10.3)
No	262 (89.7)
Chronic disease	
Yes	37 (12.7)
No	255 (87.3)
Chronic medical condition	
Hypertension	12 (4.1)
Thyroid condition	18 (6.2)
Diabetes	2 (0.7)
Others	6 (1.7)

Table 3: Use of herbal products (N=292)

Have used herbal products	n (%)
Yes	206 (70.5)
No	86 (29.5)
Suggestion for taking herbal products	
Pharmacist	5 (2.3)
Doctor	23 (10.7)
Naturopath	4 (1.9)
The internet	40 (18.6)
Books, magazine or newspapers	27 (12.6)
Friends and family	113 (52.6)
Others	3 (1.4)
Source of herbal products	
Herbal product shop	56 (31.5)
Pharmacy	22 (12.4)
Home	93 (52.2)
Internet	7 (3.9)

Table 4: List of herbal products used by respondents (Multiple response)

Products	n (%)
Ginseng	7 (0.7)
Giloy	76 (7.9)
Honey	138 (14.4)
Lemon/Lime	153 (16)
Fish oil	24 (2.5)
Garlic	99 (10.3)
Ginger	141 (14.7)
Turmeric	149 (15.5)
Fenugreek	69 (7.2)
Vinegar	19 (2)
Salt Water	73 (7.6)
Probiotic	8 (0.8)
Others*	3 (0.3)

*Silajeet, Liquorice, Basil

Table 5: Perceptions towards use of herbal products (N=292)

Statements	Strongly agree, n (%)	Agree, n (%)	Neither agree nor disagree, n (%)	Disagree, n (%)	Strongly disagree, n (%)
Herbal products are safer than prescription medications	29 (9.9)	114 (39)	111 (38)	30 (10.3)	8 (2.7)
Prescription medications are more effective than herbal products	30 (10.3)	121 (41.4)	109 (37.3)	31 (10.6)	1 (0.3)
In general, herbal products are of good quality	15 (5.1)	134 (45.9)	111 (38)	20 (6.8)	12 (4.1)
Herbal products generally do not have side effects	23 (7.9)	105 (36)	76 (26)	71 (24.3)	17 (5.8)
Doctors, nurses, and pharmacists should recommend herbal products more often	16 (5.5)	117 (40.1)	106 (36.3)	45 (15.4)	8 (2.7)
For the prevention or treatment of COVID-19, I would prefer to take a herbal product rather than a prescription medication	17 (5.8)	78 (26.7)	107 (36.6)	68 (23.3)	22 (7.5)
For a chronic medical condition (e.g., high blood pressure, diabetes, high cholesterol, etc.), I would prefer to take a herbal product rather than a prescription medication	14 (4.8)	56 (19.2)	66 (22.6)	116 (39.7)	40 (13.7)
For a minor ailment (e.g., cough due to a cold, indigestion, aches and pains), I would prefer to take a herbal product rather than a prescription medication	47 (16.1)	169 (57.9)	43 (14.7)	25 (8.6)	8 (2.7)

DISCUSSION

This study researched the prevalence of use of herbal products and participants' perception of the efficacy, safety and quality of herbal products during COVID-19. In current study, 206 (70.5%) participants reported that they have taken one or more herbal products during the COVID-19 pandemic to protect themselves from the disease. Two studies in Saudi Arabia by Alyami et al.⁸ and Alotiby and Al-Harbi⁹ have reported the use of herbal products during COVID-19 pandemic to be 22% and 92.70 % respectively. The vast difference in percentage in the two studies may be due to the increase in use of herbal products as the pandemic progressed. The study by Alotiby and Al-Harbi⁹ stated that the trend of using these products increased during the pandemic among the Saudi population. Study done by Ang et al.¹¹ and done in Korea¹² during MERS breakout had indicated that people use herbs and dietary supplements to increase their immunity and decrease chance of contracting an infection.

Herbal and natural products most commonly used in this study were Lime, Turmeric, Ginger, Honey, and Garlic. The study by Alotiby and Al-Harbi⁹ reported honey, black seed, lemons, ginger, garlic, and turmeric as some of the top products used. Another study in Morocco¹³ reported garlic, olives, onions, and ginger as the most frequently

used natural products. While "friends and family" was the main source who suggested the participants to try herbal products in present study. Other studies cited internet/social media as the most common source of information related to use of natural health products.^{9,11} In current study, most of the participants reported that they obtained the herbal products from their own home. One study done in Nepal by Khadka et al.² on use of medicinal plants during COVID-19 reported that most people got medicinal plants from home garden. In this study, most of the participants agreed or strongly agreed that herbal products were safer and of good quality than prescription medicines, herbal products do not have side effects, and doctors and health care providers should recommend herbal products more often. Few pre-COVID-19 studies have also stated that there is a general belief that natural health products are safe, of good quality and health care providers should recommend these products more often.^{10,14} Majority of participants in present study agreed or strongly agreed that they would prefer herbal products over prescription medicine for treating minor ailments like cold and flu but would not prefer herbal products over prescription medicines for chronic medical conditions. Regarding preference for herbal products over prescription medicines for the prevention and/or treatment of COVID-19, 107 (36.6%) participants in this study remained neutral

in their response but 95 (32.5%) agreed or strongly agreed that they would prefer herbal products over prescription medicine for prevention and/or treatment of COVID-19. However, World Health Organisation has not confirmed any studies that herbal or natural products can provide immunity against contracting the COVID-19 infection.¹⁵ With regards to effectiveness, most of the participants believed prescription medicine was more effective than herbal products. This is in contrast to the study by Barry, where respondent's had belief that natural products were more effective than prescription medicines.¹⁰

There are many studies that have reported the uncontrolled use of herbs and natural products can result in adverse effects like hepatotoxicity and chances of herb-drug interactions.¹⁶⁻¹⁹

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CONCLUSION

The prevalence of herbal product used during COVID-19 pandemic was high. Participants used more than one herbal product with the intention of protecting them from COVID-19. Almost half of the respondents have perception that compared to prescription medicines, herbal products are safer, have less adverse effects, and are of good quality. Proper patient education is needed regarding their belief and use of these products.

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