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## **Consumers perception and preference towards ayurvedic medicines post covid-19 in Tamil Nadu**

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**Abstract**---COVID-19 pandemic has ended in massive loss of valuable human lives and their family members. It caused destruction of livelihoods as well as financial crisis of unpredicted and unexpected levels across the globe. Indian Government in association with Ministry of Ayush has formulated many strategies and preventive measures to handle the situation of COVID-19. These strategies and implementation has helped the people to overcome the early stages of infection caused by Corona virus. Thus the researcher intends to analyze the perception and preference towards Ayurvedic medicines after COVID-19 among the general public in Tamil Nadu. The researcher also aimed to find out the preference given by the respondents towards Ayurvedic Medicines frequently taken by them for treating different types of illness. The study was carried among the public throughout Tamil Nadu. Convenience sampling method was used to draw the samples from the study area. The sample size was 390 respondents. Research model was framed with the variables perception, usage, preference and satisfaction. Four hypotheses were

framed for this research. Primary data was collected through Well-structured questionnaire. Variables such as perception, usage, preference and satisfaction were used in the questionnaire. The data collected from the public were analyzed using SPSS version 26 and AMOS 23 for Structural Equation Modelling. The correlation coefficients of Perception towards usage and Preference towards usage are significant at the 0.05 significance level. This indicates that usage as a mediating variable partially mediating the relationship of perception of the consumers and preference of the consumers towards Ayurveda medicines. Perception towards preference are significant at 0.05 significance level. On the other hand, correlation coefficient of usage towards satisfaction is non-significant. The proposed research model and hypotheses were tested and proved.

**Keywords---**Ayurvedic medicines, COVID-19, Perception, Customer and Preference.

## Introduction

The Sanskrit word AYURVEDA has two synonyms: Ayur, which means "life," and Veda, which means "knowledge." Science is the systematic organisation of reasoning and "knowledge" As a result, Ayurveda is also known as the "science of life." It stems from the ancient Vedic literature, which encompasses the body, mind, and spirit. Ayurveda, which has a 5,000-year history (Rajani, 2016), is still widely practised today. It emphasises the concept that prevention is better than therapy, as well as nature's curative properties. Ayurveda has prospered since the Vedic period, when these Vedas first taught and propagated their principles (Girija & Anisha, 2020). (Pednekar & Mayekar, 2021). As a system of healthcare medicine, Ayurveda has its own theory and procedures for treating patients (Sathiyaseelan et al., 2015). During the ancient time, it was practised in the nations of South Asia. After colonisation, Ayurveda fell out of favour and allopathy gained prominence among the populace. Today, Ayurveda has re-entered the healthcare industry as a more effective treatment for a number of disorders, particularly the most prevalent lifestyle conditions such as obesity, hypertension, diabetes, and heart disease. Kerala, an Indian state, offers a complete professional Ayurvedic treatment to both domestic and foreign healthcare consumers with more competence in the housing, food, and travel arrangements (Suhail&Srinivasulu, 2021). Utilization of conventional medicine is on the rise; its safety and efficacy have been established over time. If demand and supply are maintained, this might be used to improve the health of the country. Both domestically and abroad, there is a growing demand for Ayurvedic formulations. Herbal remedies have long been a part of traditional medical practises in India, including Unani and Ayurveda. Ayurveda uses 700 species, Unani uses 700, Siddha uses 600, Amchi uses 600, and modern medicine uses roughly 30 species (Girendra Kumar et al., 2012). In general, people prefer herbal medications for minor illnesses such a cough, cold, small wound, headache, and body soreness. In deadly disorders, they are less frequently employed. Among the herbs that are frequently used at home are cardamom, fenugreek, giloy, ginger, cinnamon, clove, turmeric, and many more. Clove is used for toothaches as well as coughs and

colds, while liquorice is used for mouth ulcers and throat infections (Yashasvi Sharma, 2021). Some treatments, like as massages and rejuvenation therapies, are performed during the monsoon because the cool, dust-free air opens the body's pores to the greatest extent and makes it more responsive to Ayurvedic herbal oils and therapy (Sunitha, 2020). Numerous characteristics combine to make Ayurveda the total health solution. It boosts the immune system's ability to combat illness, which progressively aids patients in achieving better health or Ayurveda maintains equilibrium to repair any imbalances and disorders. Because Ayurveda values natural species and places equal attention on mental wellness, the environment is important in this system of medicine (Ranjan et al., 2020) (Bulsara & Yadav, 2017). Natural remedies, which are general daily health supplements, assist in treating the underlying condition while also calming other bodily systems. The human health can be rejuvenated and revitalized with the aid of holistic treatments. Natural herbal medicines address the underlying problem rather than just the symptoms and hence contributing to the permanent cure of a medical condition (Arya et al., 2012). In developing nations, TMS (Traditional Medical System) operate as a natural blessing and play a crucial role for the rural poor. Additionally, TM is experiencing a worldwide renaissance due to its user-friendliness and the inherent adverse effects of contemporary medications. In fact, India is the home of traditional medicine, which includes Ayurveda, Siddha, Unani, and homoeopathy (Karunamoorthi et al., 2012). The Indian government is aiming to mainstream the indigenous medical system. According to WHO estimates, 70% of Indians use traditional medical systems. Ayurvedic products saw some encouraging trends at the beginning of the twenty-first century. Ayurveda adopts a comprehensive perspective of an individual's physical, mental, spiritual, and social aspects. Ayurvedic recommendations are essential to communal life since they are tried-and-true and can be used regardless of one's socioeconomic situation (Sawant, 2019).

## **COVID-19**

The World Health Organization classified the COVID-19 outbreak a global pandemic in March of 2020. The new coronavirus has wreaked devastation around the globe, severely impacting public health systems and human health, as well as wreaking havoc on global economies. The majority of nations implemented preventative measures to slow the spread of disease, such as multi-sector emergency responses, the installation of quarantine or isolation centres, the construction of diagnostic and treatment centres, and the provision of necessary intensive care services (Donia et al., 2021). Due to the pandemic, many people died all across the world. Although the loss of livelihoods due to trade and financial collapse has continued to be negative, especially in nations with little resources, the loss of irreplaceable human lives has touched both the wealthy and the impoverished (Nicola et al., 2020). (Rasul et al., 2021). The federal (central) and provincial (state) governments have coordinated efforts to expedite the vaccination push, along with active management of all positive cases and coordinated preventative and mitigation initiatives, and it is anticipated that a third wave will occur (Joseph et al., 2021). Traditional medical systems around the world have developed guidelines for the prevention and treatment of early COVID-19 based on existing practises and understanding (Hussain et al., 2020) (Tillu et al., 2020) (Zhao et al., 2021). (Paudyal et al., 2022). The Government of

India's Ministry of Ayush (which governs Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy) advocated a variety of Ayurveda-based pandemic prevention measures as early as March 20, 2020. In November 2020, the Ministry will publish the National Clinical Management Protocol for Ayurveda and Yoga based on Ayurveda treatise knowledge, empirical data, clinical practise experience, and preliminary findings from ongoing clinical investigations (Ministry of Ayush, 2022). Ayurvedic medicine has first assisted in the treatment of the COVID 19 epidemic. Thus, the researcher seeks to examine the public's attitude and preference regarding Ayurvedic medications in Tamil Nadu following the COVID 19 epidemic.

## **Review of literature**

Ayurveda has a bright future in India due to the enormous rise in demand for natural therapies including stress, a lack of a healthy work-life balance, an unorganized lifestyle, and a lack of mental serenity. The state of affairs is getting worse, which is allowing India's Ayurvedic business to grow significantly (Deshpande, 2015).

AYUSH is quite active in the health tourism industry, but there is still a lot of untapped potential. Ayurveda, being herbal, natural, and preventive medicine, may offer a lot as the world moves toward a healthy, natural lifestyle (Verma et al., 2022). By 2022, it is anticipated that the Indian healthcare market will be worth about Rs 8.6 trillion (US\$ 133.44 billion). By 2018, the market for medical tourism in India was projected to reach US\$ 6 billion, up from a growth rate of 22–25% in 2017. The government of India intends to expand public health expenditures to 2.5% of GDP by 2025.

As a percentage of Gross Domestic Product (GDP), healthcare expenditures are increasing (Rai Menon, 2019). Customer buying behaviour is the aggregate of consumer attitudes, preferences, intentions, and decisions around how they will behave in the marketplace while making a purchase (Mubarak & Mufeeth, 2020). Anthropology, psychology, sociology, and economics are social science fields that are all relevant to the study of consumer behaviour (Joshi, 2017). Customer perception of a brand is mostly based on the user's satisfaction with the value they obtain after purchasing the product and the benefits they want (Sharma, 2020) (Rajeswari & Aruna, 2017). The public's perception as a whole is shifting in favor of using herbal medications. Due to negative effects and excessive costs, customers are switching from allopathic to Ayurvedic medications, as seen by the global market for herbal medications' steady growth (Jawla et al., 2009). Many businesses have opposed the use of marketing initiatives for their Ayurvedic product.

They emphasize that a significant factor in the successful marketing of Ayurvedic items is the product's excellent attributes. Additionally, promotion is secondary to pricing and distribution (Mahesh, et al., 2011). In North and West India, Ayurveda has been shown to be most effective for treating both major and minor disorders. Respondents in the North and West region concurred that Ayurvedic goods are affordable, that they regularly consume health supplements, and that they have no negative side effects (Ahuja et al., 2020).

Patient satisfaction is the optimal method for a healthcare service provider to make consumers happy and retain them as future clients. The greatest obstacle for healthcare organisations is competing with other hospitals on the basis of superior service quality components and cost-effective service delivery. People today perceive the services provided by healthcare institutions from both a holistic social approach and a medical one. Customers are satisfied when goods and services meet or surpass their expectations. Consumer satisfaction is a crucial component in determining whether or not a customer would make future purchases (Mittal & Kamakura, 2001) (Jothi Lekshmi, 2020).

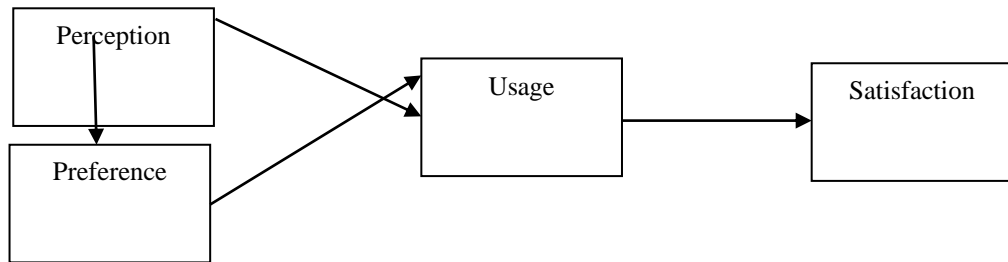
Nowadays, the majority of individuals prefer alternative medical approaches (Hanna et al., 2013). Alternative medicines like homoeopathy, Ayurveda, Unani, and Siddha do not have any negative effects (Braun et al., 2010) (Vetriselvan & Yoganandan, 2019). Herbal medicines and herbal dietary supplements are harmless (K Suleiman, 2013). Most of the people are using herbal products and have strong belief in herbal medication such as Ayurvedha, Siddha etc. (Pujari Neelkanth et al., 2015).

People purchase Ayurvedic medicines because of its chemical free properties and it can be used for long duration (Khanal, 2019). The most trustworthy sources of information prior to taking OTC medications are doctors and pharmacists. The study reveals that the majority of Indians are familiar with over-the-counter medicines. Because more people are becoming conscious of their health, the author made the argument that the OTC market will eventually overtake the pharmaceutical sector.

In order to give consumers comprehensive information about OTC products, with the help of FMCG model to the over-the-counter pharmaceutical marketing in conjunction with conventional marketing (Srivastava & Wagh, 2017). Consumers are increasingly turning to over-the-counter (OTC) medications as their first line of treatment against common illnesses including headaches, fevers, and colds and coughs since they are familiar with the brands available on the market. Consumers believe that familiarity with the OTC brand is the most important factor when referring to OTC brand medications.

Pharmaceutical companies should take into account so that these OTC products are effectively marketed across all distribution channels and that more consumers are aware of the safe and effective use of OTC brand medications (Dadhich & Dixit, 2017). Perception and satisfaction level of consumers towards herbal products influences consumer behavior (Ashok Kumar, 2019), (Chopra & Baxi, 2019), (Dubey & Sharma, 2020). Customers are satisfied with the quality and price of the Ayurvedic products (Misra et al., 2020). The majority of customers know about the product through advertisements (Rani, 2017), (Anupriya, 2017) (Salil & Vivek, 2019).

### Conceptual model



### Hypotheses

H1: Perception positively influences usage of Ayurvedic medicines.

H2: Preference positively influences usage of Ayurvedic medicines.

H3: Usage positively influences satisfaction of Ayurvedic medicines

H4: Perception positively influences preference of Ayurvedic medicines.

### Materials and methods

This study relied on descriptive research. The primary purpose of the study was to examine consumer preferences and perceptions of Ayurvedic medications in Tamil Nadu following COVID-19. The researcher also sought to determine the respondents' preferences regarding the Ayurvedic medicines they frequently used to treat various sorts of sickness. The survey was conducted among the populace of Tamil Nadu. Convenience sampling was utilised to collect samples from the area under study. There were 390 responders in total. Consisting of the variables perception, utilisation, preference, and satisfaction, a research model was developed. In this study, four hypotheses were developed. A well-structured questionnaire was used to obtain primary data. The questionnaire utilised variables such as perception, utilisation, preference, and satisfaction. There are seven statements for perception, eight statements for usage, seven statements for preference, and five statements for satisfaction. Each statement was evaluated using five-point Likert scales. The maximum degree '5' indicates strong agreement, '4' indicates agreement, '3' indicates neutrality, '2' indicates disagreement, and the lowest degree '1' indicates significant disagreement. Utilized statistical tools such as the Henry Garrett ranking and percentage analysis. Using SPSS version 26 and AMOS 23 for Structural Equation Modelling, the obtained data from the general population were examined. The Cronbach's alpha test was calculated to evaluate the instrument's internal consistency and reliability. The aggregate Cronbach's alpha for 23 questionnaire items was 0.756, which above the specified minimal level of 0.07. (Hair, Black, Babin, & Anderson, 2010). Therefore, the instrument was deemed dependable for this study.

#### Reliability of the constructs

Constructs	No. of items	Cronbach's alpha value
Perception	6	0.952
Usage	6	0.962
Preference	6	0.874
Satisfaction	5	0.885

**Table 1 Frequency analysis of the respondents**

Profile	Category	Frequency	Percentage (in %)
Gender	Male	214	54.9
	Female	176	45.1
Age	Below 30 years	70	17.9
	31-40 years	214	54.9
	Above 40 years	106	27.2
Education	school education	43	11.0
	UG	185	47.4
	PG	123	31.5
	Professional	39	10.0
Monthly Income	Below 20000	101	25.9
	20000-40000	229	58.7
	above 40000	60	15.4
Marital Status	married	227	married
	unmarried	163	unmarried
Occupation	Private employees	109	27.9
	agriculturists	114	29.2
	government employees	73	18.7
	businessman	94	24.1
Frequency in using Ayurvedic medicines	daily	61	15.6
	once in a week	90	23.1
	monthly	113	29.0
	whenever required	126	32.3

**Table 1** displays the frequency analysis of the respondents who are using Ayurvedic medicines. Results based on gender shows that 54.9% of the respondents were male and remaining 45.1% of the respondents were female. Age of the respondents' shows that 54.9% of the respondents were between the age group 31-40 years of age. 47.4% of the respondents were completed their UG degree and 31.5% of the respondents were completed their PG degree. Based on the income, the analysis shows that 58.7% of the respondent's monthly income were between Rs.20000-Rs.40000, 25.9% of the respondents' income were below Rs.20000 and 15.4% of the respondents' income were above Rs.40000. 58.2% of the respondents' were married and remaining 41.8% of the respondents' were unmarried who participated in this study. Based on the occupation, 29.2% of the respondents were farmers, 27.9% of them were working as private employees, 24.1% of them were businessmen, and 18.7% of them were government employees. Based on the frequency of using Ayurvedic medicines after COVID-19

results shows that 32.3% of them use whenever required, 29% of them use monthly, 23.1% of them use once in a week and remaining 15.6% of them use daily.

### ***Henry Garrett ranking method***

Table 2: Ayurvedic Medicines frequently taken by the respondents for treating different types of illness.

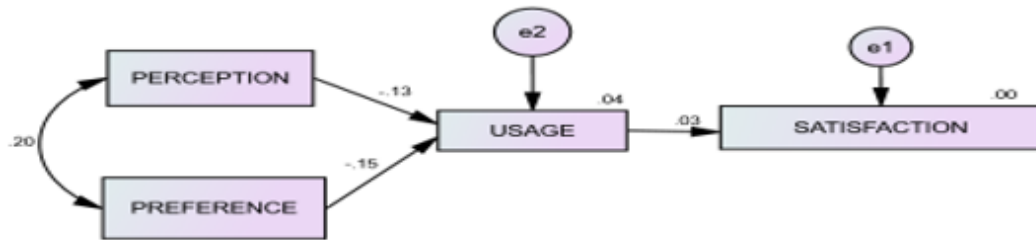
Medicines	Total	Mean	Rank
Dry ginger popularly known as sonth or sukku (weight loss, indigestion, nausea)	19177	49.17	III
<b>Turmeric</b> (Skin, Wound healing, Joints pain, Cosmetic)	18275	46.86	VI
<b>Cinnamon</b> (digestive issues, loss of appetite)	18642	47.80	V
<b>Long Pepper – Thippili</b>	18040	46.26	VII
<b>Neem</b> (skin, tooth problems)	17576	45.07	VIII
<b>Tulsi</b> (Sore throat, Cough, Cold, Stomach problems)	19048	48.84	IV
<b>Amla</b> (Immunity enhancer, Vitamin C, Brain tonic, Good for Eyes and Hair)	21548	55.25	II
Lesser Galangal – Chitharathai in Tamil (cough, cold)	22134	56.75	I

Lesser Galangal known as Chitharathai in Tamil language, dry ginger popularly known as Sonth or Sukku, Cinnamon, long pepper known as Thippili, Tulsi, Neem, Amla and Turmeric are the eight herbal medicines taken frequently by the respondents for treating various illness. Table 2 shows the Henry Garrett ranking results among these eight medicines, Lesser galangal known as chitharathai was ranked first with the mean score 56.75 followed by Amla with the mean score 55.25. Dry ginger known as sonth or sukku ranked third with the mean score 49.17. Tulsi was ranked fourth with the mean score 48.84, Cinnamon was ranked fifth with the mean score 47.80, followed by Turmeric was ranked sixth with the mean score 46.86. Long pepper known as Thippili was ranked seventh with the mean score 46.26 and the last rank for Neem with the mean score 45.07.

### ***Structural Equation Modelling***

Structural Equation Modelling (SEM) was used to test the measurement properties of the research model used in the study (Hair et al., 2014).





**Table 3 Model fit indices**

The Goodness of fit indices	Cut-off value	Result	Remarks	References
Chi-Square (X2)	Expected to be low	4.1333	Fit	-
Degrees of freedom (DF)	Positive	2	Fit	-
Probability level (p)	$\geq 0.05$	0.127	Fit	(Joreskog & Sorbom, 1996)
Chi-square mean/DF	$\leq 5.0$	2.066	Fit	(Marsh & Hocevar , 1985), (Kline, 1998)
Goodness of fit (GFI)	$\geq 0.90$	0.995	Fit	(Kline, 2010), (Hair, 2019)
Adjusted GFI	$\geq 0.90$	0.974	Fit	(Tabachnick & Fidell, 2020)
Comparative fit index (CFI)	$\geq 0.90$	0.933	Fit	(Bentler, 1990)
Root Mean Square Error Approximation (RMSEA)	$\leq 0.08$	0.052	Fit	(Steiger, 1990)

The results of the goodness of fit indicators for the research model are presented in Table 3. It may be concluded from this table that the value of chi-square mean/DF (2,066) is less than the suggested value of 5.0. This demonstrates that the proposed research model for the study is adequate in terms of goodness of fit.

**Table 4 Regression weights**

Path	Estimate	SE	CR	Sig. (p)
H1: Perception towards usage	-0.122	0.049	-2.506	0.012
H2: Preference towards usage	-0.165	0.057	-2.899	0.004
H3: Usage towards satisfaction	0.027	0.040	0.670	0.503
H4: Perception towards preference	10.809	2.828	3.822	0.000

Table 4 shows that all the correlation coefficients of Perception towards usage and Preference towards usage are significant at the 0.05 significance level. This indicates that usage as a mediating variable partially mediating the relationship of perception of the consumers and preference of the consumers towards Ayurveda medicines. Perception towards preference are significant at 0.05 significance level. On the other hand, correlation coefficient of usage towards satisfaction is non-significant. H1 states that perception positively influences usage of Ayurvedic medicines. H2 states that preference positively influences usage of Ayurvedic medicines. H3 states that Usage positively influences satisfaction of Ayurvedic medicines and H4 states that perception positively influences preference of Ayurvedic medicines. From the results it shows that the first hypothesis is rejected because perception negatively influences the usage of Ayurvedic medicines. The second hypothesis is rejected because preference negatively influences the usage of Ayurvedic medicines. The third hypothesis is accepted because usage positively influences the satisfaction of Ayurvedic medicines. When customers use Ayurvedic medicines for their illness and got cured they get satisfied with the medicines and the treatment. In this way the third hypothesis is accepted. Likewise the fourth hypothesis is also accepted because perception positively influences the preference of Ayurvedic medicines. Perception of a person influences or induce them to try the products which in turn makes them to prefer the particular products. Similarly consumers you have general perception about Ayurvedic medicines prefer to use the medicines.

## **Conclusion**

Government of India and Government of Tamil Nadu developed a feasible decentralized model and participatory framework model for delivering Ayurvedic treatment and services to the public right from the beginning of the outbreak of COVID-19. This traditional healthcare system has gained its popularity during and after COVID-19 among the general public. Sometimes perception of the people differ from person to person. Though the Ayurvedic medicines are very effective in treating COVID-19 due to some side effects caused in patients makes them anxious about the medicines/treatment. Perception towards usage and Preference towards usage are statistically significant. This indicates that usage as a mediating variable partially mediating the relationship of perception of the consumers and preference of the consumers towards Ayurveda medicines. Perception towards preference is statistically significant. On the other hand, usage towards satisfaction has not significant on it. At this juncture, perception does not influence the people to use the medicine. On the other hand, preference made by the people do not create any impact or influence in using such medicines in the study area. But those use the Ayurvedic medicines are highly satisfied with the medicines. They use them on regular basis to safeguard from further infections. Moreover after COVID-19, Ayurvedha, siddha, Unani, Herbal medicines etc have gained its importance and popularity among the people across the country. Finally it can be concluded that government has to take more actions by giving importance for the implementation of awareness programs to attract the people by explaining the benefits and importance of Ayurvedic medicines/treatment because traditional medicines are the root of our culture. This in turn it will be an opportunity to develop tradition medicine tourism in our country.

### **Future Scope for Further Research**

In future studies, it will be important to include siddha medicines and customer view on it, so that results will be diverse.

The study can further be researched as below for distinguished results

- 1) Entrepreneurial Celebrity Endorsement And Its Effect On Siddha Products
- 2) Entrepreneurial Celebrity Endorsement And customer perception towards siddha product

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### **Data Availability Statement**

- Absence of the data due to confidentiality issues.

### **Ethics approval statement**

- I accept that the content hasn't been plagiarised

### **Conflict of Interests**

- The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article

### **Declaration**

The authors declare that prior informed consent was taken from all the respondents for collecting the data for the present research work.

### **Authors' Contributions**

S.Elango: Investigation, data collection, writing original draft, Conceptualization.

M.Suryakumar: Data analysis, methodology, review and editing.

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