



Contents lists available at BioMedSciDirect Publications

International Journal of Biological & Medical Research

Journal homepage: www.biomedscidirect.com

Original Article

An Observational study to assess the role of Complementary and Alternative Medicine in the prophylaxis of COVID-19

Pradnya Deolekar, *^a Pramila Yadav, ^b Sandesh Deolekar^c, Prathmesh D^d

Pharmacology department D.Y. Patil School of medicine, Nerul.

ARTICLE INFO

Keywords:

Alternative medicine
Ayurveda
Complementary medicine
Covid-19
Homeopathy
Prophylaxis
Survey.

ABSTRACT

Background: The severe acute respiratory distress syndrome coronavirus 2 (SARS-CoV-2) pandemic has caused many infections with numerous deaths worldwide. Still, the number of infected cases with deaths is escalating day by day. Alternative medicine (AMs) viz., Ayurveda, Homeopathy, Unani, yoga, Herbal medicine, are being promoted for the prevention of COVID-19. Complementary and Alternative Medicines (CAM) are gaining rapid acceptance among individuals. Therefore, the aim was to study the pattern of CAM use for prophylaxis of COVID-19. **Methods:** A survey was conducted amongst 456 individuals to assess the use of various CAM modalities for the prevention of COVID-19. Respondents who gave consent were assessed by a pre-structured questionnaire. **Results:** Out of 456 respondents enrolled in the study, the use of CAM was almost equal in both males (49.34%) and Females (50.65%). Homeopathy (30.48%) was the most common type of CAM used, and Ayurveda was used by 22.80% of respondents. Social media was used by 44.51%, and Official govt. Web sites were least used (20.61%). The most common reason for using CAM was to buildup immunity (21.05%). 92.98% and 91.22% of CAM users have shown improvement in overall well-being, and stress reduction respectively, but results were not statistically significant. **Conclusions:** High percentage of the participant's demonstrated awareness towards most of the CAM modalities. They considered using multiple CAM modalities in the prevention of Covid-19 but consultation with qualified CAM health care professionals should be advocated. **Conclusion:** A strong association was observed between parents and child's usage of screen as child's screen time and parent characteristics are associated with children's physical, cognitive and social skills.

©Copyright 2010 BioMedSciDirect Publications IJBMR - ISSN: 0976:6685. All rights reserved.

Introduction

Emerging in China in late 2019, the coronavirus disease-2019 (COVID-19) infection epidemic is growing rapidly and new cases are reported around the world¹. The outbreak was declared a Public Health Emergency of International Concern by the WHO on 30 January 2020. COVID-19-infected pneumonia is characterized by flu-like symptoms including fever, cough, severe acute respiratory distress syndrome, and in some cases death.² Human-to-human transmission has been confirmed for the virus, which is considered related to severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS). Like SARS-CoV and MERS-CoV, the COVID-19 is a serious threat to human health.^{3,4} Effective prevention and treatment are important in this situation. Despite combined efforts, a vaccine is still not available. Under such conditions, individuals may think of relatively cheaper options of alternative medicines (AMs) for prophylaxis or treat themselves against this virus. In the current situation, the primary objective of mankind is to survive, so they will take various CAM modalities until modern medicine invents a cure or prophylaxis.

India has a rich tradition of use of ayurvedic medicines and has a government department for CAM which is named 'AYUSH' (Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy). AYUSH is also proposing Homeopathy and Ayurveda for prophylaxis and Unani medicines for symptomatic management of COVID-19.⁵ The prophylactic and therapeutic potential of traditional and complementary medicine systems such as Homeopathy, Ayurveda and Yoga is being considered during this crisis and the global hunt for effective preventive and treatment measures. Ayurveda, Yoga, and meditation have a potential role to engage the community in creating a more positive healthy environment. Mass prophylaxis can be helpful to reduce respiratory infection.⁶ This preliminary study was planned to study the consumption of complementary and alternative medicine remedies for the prevention of COVID-19.

Methodology:

Inclusion and exclusion criteria: Age (18 years and above), who can give informed consent to participate in the study while exclusion criteria included age below 18 years, individuals with intellectual disabilities.

* Corresponding Author : **Dr Pradnya Deolekar***
dpradnya72@gmail.com

Our study was cross-sectional, carried out by a convenience, non-probability sampling technique in an Urban city in India carried out after receiving permission from the Institutional ethics committee.

A validated questionnaire was developed in straightforward, understandable English by using Google form. The questionnaire was circulated to known through Whats App, e-mails. Total, we received 469 responses, but some were filled incomplete, so we eliminated them. Finally, we analyzed 456 responses to draw our results. The process of data collection was held over for 1 month.

Statistical Analysis:

The frequency of CAM usage is given in percentage in a relation to age, gender, socioeconomic status, educational status, occupation, types of CAM, reasons for CAM using, awareness of CAM, sources of CAM information, and individual CAM modalities. The parameters like improvement in overall well-being and stress relief were assessed using the Chi-square test. $P < 0.05$ was considered statistically significant.

Table 1: Sociodemographic details of the study patients (n=456).

Category	Number	Percentage
Age (years)		
18-24	76	16.66
25-35	87	19.07
36-45	112	24.56
46-55	101	22.14
≥ 56	80	17.54
Gender		
Males	225	49.34
Females	231	50.65
Qualifications		
Undergraduate	83	18.20
Bachelor	91	19.95
Masters	143	31.35
Doctor/Ph.D.	139	30.48
Occupation		
Students	84	18.42
Government Professional	103	22.58
Private Profession	110	24.12
Self employed	91	19.95
Unemployed	68	14.91
Socioeconomic status		
Class 1 upper	88	19.29
Class 2 upper middle	113	24.78
Class 3 lower middle	108	23.68
Class 4 upper lower	96	21.05
Class 5 lower	51	11.18

Table 1 depicts the sociodemographic details of the study patients. A total of 456 consented to participate in the study. Out of the total 456 participants, 50.65% were females and 49.34% were males. Maximum CAM users were more in the age group of 36-55 (46.7%). The educational background of most of the CAM users was high in masters and Doctors (31.35%), (30.48%) respectively, (14.91%) of the study population were unemployed and CAM usage was higher in Class 2 and Class 3 people.

Table 2: Types of CAM used by the study Respondents (n=456)

Type of CAM	Number of Respondents (n)	%
Homeopathy	139	30.48
Ayurveda	104	22.80
Others	116	25.43
Yoga	79	17.32
Naturopathy	21	4.60
Use of two types of CAM	299	65.57
Use of more than two types of CAM	418	91.66

Homeopathy being a sole modality was used by only 139 (30.48%) respondents. Approximately 91.66% of respondents used more than two types of CAM. The use of other types of CAM is represented in table 2.

Table 3: Individual CAM modalities used by the study Respondents (n=456)

Type of CAM	Number of Respondents (n)	%
Turmeric	8	1.75
Amla (Indian Gooseberry)	7	1.53
Ginger	6	1.31
Giloy	21	4.60
Tulsi	10	2.19
Herbal tea/decoction (Kadha)	67	14.69
Album-30	91	19.95
Camphora	49	10.74
Yoga & meditation	38	8.33
Exercise	39	8.55
Steam Inhalation	28	6.14
Consumption of hot water	48	10.52
Gargling with medicated water	31	6.79
Dietary supplements	13	2.85

Table: 3 represents the use of individual CAM modalities. Homeopathy (Album-30 and Camphora) was the sole CAM modality used by 30.69% of participants. However, in conjunction, it was the commonest CAM modality (85.30%). Other CAM options were 26.3% (steam inhalation, consumption of hot water, gargling, and dietary supplements), Ayurveda(Kadha, Giloy, Tulsi)21.48%, Yoga, exercise, and meditation by 16.88%, and Naturopathy 4.59%.

Table 4: Reasons for starting CAM (n=456).

Reasons	Number of patients (n)	%
To build up immunity	96	21.05
To improve body health	87	19.07
To relieve stress	72	15.78
For COVID-19 prophylaxis	68	14.91
Effective	61	13.37
CAM is safe	38	8.33
Less costly	34	7.45
≥2 reasons for starting CAM	386	84.64

Table 4 illustrates that the most common reason for using CAM as reported by (21.05%) users was to build up immunity, (19.07%) to improve body health, (15.78%) to relieve stress against Covid-19. Some participants' (13.37%) preferred CAM therapy due to its effectiveness; meanwhile, some of them have used CAM therapy as prophylaxis for Covid-19 (14.91%). Out of the total study participants (84.64%) of them had more than two reasons for starting CAM Therapy.

Table 5: Pattern of use of CAM (n=456).

Parameter		n (%)
Knowledge or awareness about CAM	Present	422 (92.54%)
	Absent	34 (7.45%)
Source of information regarding CAM use	Media	203 (44.51%)
	Relatives	113 (24.78%)
	Friends	93 (20.39%)
	Neighbours	46 (10.08%)
	Official govt. Web sites	94 (20.61%)
	> than one source	386 (84.69%)
Outcome of Health improvement	Improvement in overall well-being	424 (92.98%)
	No Improvement in overall well-being	32 (7.01%)
Outcome of stress relief	Reduction in stress	416 (91.22%)
	No Reduction in stress	40 (8.77%)

Table 5 describes the patterns of CAM use among respondents, that majority of them (92.54%) were aware of CAM. Multi social media was used by 44.51% of respondents and the Official govt. Web sites were least used (20.61%). Out of the study population, 84.69% have used more than one source of information. 92.98% and 91.22% of CAM users have shown improvement in overall well-being, and stress reduction respectively.

Table 6: Outcomes of use of CAM (n=456).

Parameter		Two Types of CAM	More than Two Types of CAM	p-value
Outcome of Health improvement	Improvement in overall well-being	143	281	$X^2=1.324$, DF=1; p = 0.2498
	No Improvement in overall well-being	14	18	
Outcome of stress relief	Reduction in stress	138	278	$X^2= 3.318$ DF=1; p = 0.0685
	No Reduction in stress	19	21	

Table 6 illustrates that on analyzing the variable of using CAM modalities with their improvement. It is observed that the percentage of improvement in overall well-being and stress relief is high, but the P-value is not statistically significant.

Discussion

In the wake of the Covid 19 outbreak, entire mankind across the globe is suffering physically and mentally. Enhancing the body's natural defense system (immunity) plays an important role in maintaining optimum health. We all know that prevention is

better than cure. While there is no medicine for COVID-19 as of now, it will be good to take preventive measures that boost our immunity in these times. According to the World Health Organization (WHO), "health is not merely the absence of disease or infirmity but a state of complete physical, mental, and social well-being".⁷ Many of the countries are also trying complementary and alternative medicine (CAM), including traditional, Herbal treatment, alone or in combination with standard management, as an option for prevention or treatment of COVID-19. Although, there is no conclusive evidence to support its usefulness to reduce the viral load and/or symptoms.

Homeopathy (Album-30 and Camphora) was a sole CAM modality used by 30.69% of participants. However, in conjunction, it was the commonest CAM modality (85.30%). This was because, during the period of Lockdown in India, the Ministry of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy), Government of India suggested the use of homeopathic medicine 'Arsenic Album 30C' and Ayurveda preparations such as 'Kadha' (Ginger, curcumin, cloves, honey, fennel seeds, cumin seeds) and lukewarm water as an immunity booster.⁸ This must have influenced the respondents to use multiple CAM modalities.

Many respondents used Turmeric in decoction. Several literature references have proven that turmeric (*Curcuma longa*) can be used as an anti-inflammatory, antioxidant and antiseptic therefore can be used for prevention of COVID-19.⁹ Substantial researches have shown antiviral properties of ayurvedic preparations which can be used for therapeutic management of COVID-19 patients.¹⁰ In our study yoga and meditation were very commonly used along with homeopathy and Ayurveda. As the Covid-19 pandemic continues to fury across the world, it has caused a cascading effect on jobs, salaries, livelihoods, and businesses leading to a rise in mental stress and anxiousness in people. In the present situation, stress and anxiety due to the coronavirus pandemic can be effectively managed by the practice of yoga and ayurvedic medicines. Pranayama is known to improve lung function. Meditation is found to reduce inflammation markers and influence markers of virus-specific immune response.¹¹

Many respondents also used local prophylactic measures such as herbal decoctions, consumptions of hot water, gargling with medicated water, and steam inhalation. These can be quickly implemented with the advantages of simplicity and affordability. Such traditional measures can positively influence mental health and immune function through modulating psychoneuroimmune pathways.

Quite a few respondents 203 (44.51%) have used social media for the source of information. Other sources of information were from friends, relatives, neighbors. Only 20.61% used official government web sites for information. The news around COVID-19 is changing rapidly and we are seeing a lot of misinformation being shared. Many people are worried about COVID-19 and that could be associated with using more information sources. Though more sources of information about COVID-19 will be associated with higher self-confidence to cope with COVID-19. At the same time, many were worried about the spread of a lot of fake news regarding the Coronavirus. Some are finding it difficult to get reliable information about this topic that is why the need to approach the official government-linked web sites.

On analyzing the variable of using CAM modalities with their improvement it was observed that the percentage of improvement in overall well-being and stress relief is high, the P-value is not statistically significant. This could signify that the respondents should approach qualified CAM health care professionals to ameliorate their overall health.

Cleaning your hands with soap and water, Maintaining a safe distance from anyone who is coughing or sneezing, wearing a mask when physical distancing is not possible are some of the ways to prevent COVID-19 infection. Also besides by using various CAM modalities will ensure good health and immunity which are essential for better protection from the current pandemic of COVID-19.

Conclusions

In conclusion, a high percentage of a participant's demonstrated awareness, effectiveness towards most of the CAM modalities. They considered using multiple CAM modalities in the prevention of Covid-19 but consultation with qualified CAM health care professionals should be advocated. However, their efficacy and safety still need scientific validation. Because the evidence for the effectiveness of CAM remains sparse, more research is a required for the judicious use of CAM in the prophylaxis of Covid-19.

REFERENCES

1. Remuzzi A, Remuzzi G. COVID-19 and Italy: what next? *Lancet* 2020;395(10231):1225–8.
2. Perelson AS, Weisbuch G. Immunology for physicists. *Rev Mod Phys* 1997;69(4):1219.
3. Bikle DD. Vitamin D and the immune system: role in protection against bacterial infection. *Curr Opin Nephrol Hypertens* 2008;17(4):348–52.
4. Simon HB. The immunology of exercise: a brief review. *JAMA* 1984;252(19):2735–8.
5. Advisory for Corona virus Homoeopathy for Prevention of Corona virus Infections Unani Medicines useful in symptomatic management of Corona Virus infection. (2020).
6. Patil A, Dindore P, Aziz A, Kadam A, Saroch V. Clinical effect of suvarna bindu prashan. *J Ayurveda Integr Med Sci* 2017;2:11-8.
7. Yang Y, Islam MS, Wang J, Li Y, Chen X. Traditional Chinese medicine in the treatment of patients infected with 2019-New coronavirus (SARS-CoV-2): a review and perspective. *Int J Biological Sci* 2020;16:1708-1717.
8. Advisory for Corona virus from AYUSH Ministry [cited 2020 May 11]. Available from: <https://pib.gov.in/>
9. Bhatwalkar SB, Shukla P, Srivastava RK, Mondal R, Anupam R. Validation of environmental disinfection efficiency of traditional Ayurvedic fumigation practices. *J Ayurveda Integr Med* 2019;10:203-206.
10. Vellingiri B, Jayaramayya K, Iyer M, Narayanasamy A, Govindasamy V, Giridharan B, et al. COVID-19: A promising cure for the global panic. *Sci Total Environ* 2020;725:138277.
11. Morgan N, Irwin MR, Chung M, Wang C. The effects of mind-body therapies on the immune system: meta-analysis. *PLoS One* 2014;9:e100903.