Original Article

Utilization Of Ayush Drugs In Pediatric Patients For COVID-19 And Associated Socio-Demographic Factors

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Abstract

Background and objectives: COVID-19, is a contagious disease also known as severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). All age groups among children are susceptible even though the severity of infection is less. Although the seropositivity rate was slightly lower as compared to adults, a significant percentage of children are seropositive for SARS-CoV-2. As of now, there is no definitive treatment for COVID-19 and management is largely supportive and empirical in modern medicine. For the prevention, treatment, and post-COVID management the role of AYUSH was of substantial importance. To combat the crisis, AYUSH was integrated in clinical practice and public health in the national efforts. Present study was carried out to evaluate the utilization of Ayush medications for COVID-19 among the pediatric patients who attended outpatient department (OPD) of the hospital.

Methods: Present study was a cross-sectional observational study conducted from August 2021 to March 2022 among the pediatric patients aged 0-16 years. Convenience sampling which is a non-probability sampling technique was used. To record the results of the study a pre-tested semi structured questionnaire was used. Only those Unani, Ayurvedic and Homeopathic medicines that were recommended by ministry of Ayush and delivered through public health care system or were prescribed by a registered Ayush practitioner were considered as drugs for COVID-19 prophylaxis or treatment. Data was analyzed using Microsoft Excel and SPSS software.

Results: In this study we observed that overall, 31.53 % of the children aged 0 to 16 years of age have used Ayush medication during the period of COVID-19 pandemic for prevention and treatment of the infection. The utilization was higher in lower income groups and increased with the increase in the age of children.

Conclusion: We conclude that better awareness about the availability of Ayush treatments for pediatric patients and scientific evidence about their efficacy and about their safety shall be prioritized.

Keywords: Ayush; COVID-19; Pediatric; Utilization; Medication.

INTRODUCTION

COVID-19, is a contagious disease also known as severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) transmitted to human beings from bats [1]. Although the clinical course of covid -19 in infected people is mild-to-moderate but there is high mortality in the elderly, the immunocompromised and those with other comorbid conditions because of severe acute respiratory syndrome. [2] Clinically and immunologically children react differently to severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) in comparison to adults.[3] All age groups among children are susceptible even though the severity of infection is less.[4] A significant percentage of children were seropositive for SARS-CoV-2 although the seropositivity rate of was slightly lower as compared to adults. [5]

As of now, there is no definitive treatment for COVID-19 and management is largely supportive and empirical. In modern medicine the experimenting to find cure with several existing antiviral drugs, which were used to treat other viral infections in the past is going on, but they present adverse effects and poor efficacy.[2] Ayush abbreviated as Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy are five complementary therapies prevalent in India that are widely used in COVID-19 management. At commencement of the pandemic, ministry of AYUSH (regulatory body of Indian system

of medicine) issued advice which recommended the use of some measures and herbal drugs for enhancing immunity based on an advisory panel of AYUSH experts. It was recommended to use the herbs which have already been in use in traditional system of medicines for various ailments like fever, cough, and respiratory distress, and as an immunity enhancer, possessing anti-viral, anti-bacterial and anti-microbial properties. [6]

Prevalence studies serve the purpose of guiding the policymakers in identification of priorities in healthcare, prevention and policy making. These studies encourage development of best suited health economics models for a particular community, disease, or an age group. Prevalence studies provide data for the assessment of interventions, since they provide inputs on the baseline risk for a given disease in a patient group or population. [7]

For the prevention, treatment, and post-COVID management the role of AYUSH was of substantial importance. To combat the crisis, AYUSH was integrated in clinical practice and public health in the national efforts. (8) The medicines advised by MoA guidelines such as Ayush Kwath, Guduchi ghan Vati, Anu Taila and Ashwagandha, Tulsi, Ayush 65 and Chyawanprasha were launched by several pharmaceutical companies and were available for general population through public health system as well during this pandemic. [9] Therefore, the present study was carried out to evaluate the usage and utility of Ayush services in combating COVID 19 among the pediatric patients who visited the outpatient department (OPD) of the hospital.

METHODS

Study design, population and setting

Present study was a cross-sectional observational study conducted from August 2021 to March 2022 among the pediatric patient visiting the outpatient department of Government Unani Medical College, Ganderbal, J&K, India and the participants were aged 0-16 years. The participants belonged to rural catchment areas of the hospital however both allopathic as well as Ayush health facilities were available to them in the government sector.

Sample size

Convenience sampling which is a non probability sampling technique was used. No apriori sample size was calculated for the study . All the participants who agreed to take part in the study during the study period and fulfilled the inclusion criteria were included in the study.

Study tool

To record the results of the study a pre tested semi structured questionnaire was used. Fields to capture socio-demographic data were also included in the questionnaire besides utilization and willingness to use Ayush drugs for treatment and prevention of COVID-19.

Collection of data

The pediatric patients (0-16 years) visiting the Outpatient Department (OPD) of the hospital were screened for inclusion in the study through verbal questioning of their parents. The consent of the parent to participate in the observational study and assent of the child were also recorded. Eligible parents of eligible participants were interviewed using a semi structured questionnaire which was tested in the pilot phase. the questionnaire elicited information on socio-demographic details such as age, gender, family income, education of parents, and utilization of AYUSH services.

Information regarding the use of Ayush medicines for preventing COVID-19 infection and the source of such information was noted. Additionally, the history of contracting COVID-19 and the severity of symptoms were documented, as well as the utilization of Ayush drugs for the prophylaxis and treatment of COVID-19. Written informed consent was obtained before the interview, and all efforts were made to maintain the privacy and confidentiality of the participants. Only those Unani, Ayurvedic and Homeopathic medicines that were recommended by ministry of Ayush and delivered through public health care system or were prescribed by a registered Ayush practitioner were considered as drugs for COVID-19 prophylaxis or treatment.

Analysis of data

Data was entered in Microsoft excel and analyzed using SPSS software. Categorical variables were expressed as frequency and percentages. Continuous variables were expressed as mean (SD). The crude measure of association between a single variable and utilization services was expressed as Odds ratio (unadjusted) and its 95% Confidence Interval (CI). P values less than 0.05 were considered statistically significant.

RESULTS

Out of total 352 children 165 (46.87%) were females and remaining 187 (53.12 %) participants were males. The number of participants was highest in age group 13-16 years and the mean (Sd) age of the participants was 10.51 (4.08) years. 26.13 % (n=92) of participants came from upper middle income group while only 13.06% (n=46) belonged to upper class. Parents of 102 (28.97%) participants were educated only up to primary level while a minimal 17 (4.82%) had education up to post graduation level. (Table 1)

Variable	n= 352	%
Gender		
Male	187	53.12
Female	165	46.87
Age in years		
0-4	37	10.51
5-8	71	20.17
9-12	109	30.96
13-16	135	38.35
Religion		
Muslim	349	99.14
Hindu	3	00.85
Education of the better educated parent		
Primary	102	28.97
Secondary	92	26.13
Higher Secondary	76	21.59
Graduate	65	18.46
Post-Graduate	17	4.82
Social Class modified kuppuswamy scale		
Lower	56	15.90
Upper Lower	76	21.59
Lower Middle	82	23.29
Upper Middle	92	26.13
Upper Class	46	13.06

Table 1. Socio-demographic details of participants.

Ayush drugs were used by 31.52% (n =111) of the participants either through public health care system or from a registered practitioner in the past and more than half (n=241) of them did not use Ayush Medicines for any purpose. Majority of participants (51.03%) did specify any particular reason for no utilization of Ayush drugs while 26.55% participants mentioned palatability of Ayush drugs as a cause of non-utilization. The lack of a facility and unawareness were other causes for not utilizing Ayush drugs for prevention or treatment of COVI-19 Table 2.

Non-utilization	n= 241	%age
No specific reason	123	51.03
Palatability	64	26.55
Ayush facilities not available	32	13.27
Do not know about Ayush	12	5.39
Used Allopathic Instead	10	4.14

Table 2. Distribution of reasons for non-utilization of Ayush Drugs.

For the sake of analysis, the groups of variables were merged, and variables were expressed as dichotomous variables. We found, a statistically significant association between age and utilization of services with an Odds Ratio of 1.68(95% CI=1.00 to 2.81, p<0.05). The utilization of services was found to increase with an increasing age. Further, socioeconomic status was also found to be significantly associated with the utilization of services with an Odds Ratio of 2.21 (95% CI 1.39 to 3.50, p <0.05) (Table 3).

Variable	Utilization (n)				P
Age (years)	**Yes**	**No**	**OR**	**(95% CI)**	**value**
0-8	26	82	1.68	1.00 to 2.81	0.04
9-16	85	159			
Gender					
Female	46	119	1.37	0.87 to 2.17	0.16
Male	65	122			
Education					
Primary and Secondary	59	135	1.12	0.71 to 1.73	0.61
High Secondary and above	52	106			
Socio economic status					
Upper	55	165	2.21	1.39 to 3.50	0.01
Lower	56	76			

Table 3: Association between baseline characteristics and utilization rates.

Out of the participants who had utilized Ayush drugs 60.36 % (n=67) where diagnosed with COVID-19 infection and out of them 28.35 % (n=19) had used Ayush drugs for both prevention & treatment of COVID-19. 39.63 % (n=44) of participants who utilized Ayush drugs for prevention were not diagnosed with COVID-19 (Figure 1).

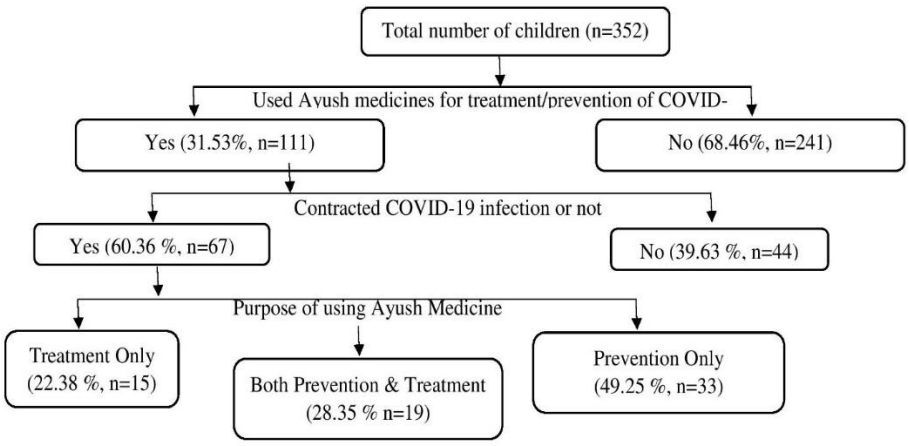

Figure 1: Showing utilization of Ayush drugs for COVID 19 and purpose of use.

DISCUSSION

During the peak of the COVID-19 pandemic people were distressed due to the social and economic implications of this disease. Modern medical system had no answers to alleviate the sufferings of the people and all the treatments available were empirical. Modern medical resources were tested enormously for a breakthrough in the effective management of this infection. [10] In India Ayush system was explored for a possible relief from this highly contagious infection and ministry of Ayush came up with recommendation of utilizing certain formulations for prevention and treatment of this infection. [9,10] With the increase in demand for mainstreaming of Ayush in India it becomes vital to understand the pattern of utilization of Ayush services and its relationship with sociodemographic determinants of the population including pediatric age group. Although, in this study we observed that overall 31.53 % of the children aged 0 to 16 years of age have used Ayush medication during the period of COVID-19 pandemic for prevention and treatment of the infection. The observations of overall utilization rates of Ayush medications were consistent with the findings of Singh et al. who also reported utilization rates of about 33% for indigenous systems of medicine in the general population.[11] Our results were in contrast to the observations of Rudra et al. [12] and WHO Sage survey [13] who have reported a lower utilization rates of Ayush medications. Although our study was in pediatric patients which is in contrast to the studies of Rudra et al. and WHO Sage survey higher rates of utilization of Ayush medications can be attributed to significant percentage of participants from the rural areas who are more inclined towards traditional medical practices due to higher presence of traditional healers in rural areas of India.

Our study in contradiction to Singh et al. and Ramesh et al. found higher utilization rates in the lower strata of the population and among the less educated section of the society.[11,14] Satyanarayana et al. reported higher utilization rates among the lower income group which are consistent with our results.[15] Easy accessibility and relatively higher availability of free of cost Ayush facilities in the area of study can be a factor for high utilization rates among lower strata of population. Besides the proactive initiatives taken by Directorate of Ayush, Government of J&K for promotion of utilization of Ayush Drugs for prevention and treatment of COVID-19 could be impact making factor.[16]

The use of Ayush medication had a significant association with the age of the participants and the rate increased with the increase in the age. This can be attributed to the fact that dosage forms in Ayush systems of medicine are adult oriented, and the acceptability & palatability is major factor in pediatric age group.

A significant number of participants (39.63 %) who utilized Ayush medications where not diagnosed with COVID-19 at any point of time. The reason for this may be that a sero-prevalence studies for COVID-19 have not been carried targeting pediatric age group the possibility of preventive aspect of Ayush medications also needs to be investigated. Utilization of Ayush medications for treatment of COVID-19 was observed in 34 children, however, efficacy and safety issues need to be investigated in view of the nature of the infection.

Our study was one of the first study to studies to determine the utilization of Ayush medicines by pediatric patients for the prevention and treatment of COVID-19. A limitation to this study, was that the participants included only those patients who visited the outpatient department of the hospital which could be biasing factor. Besides the majority of the patients belonged to rural area and were of a particular religion.

CONCLUSION:

In the present study we observed average utilization of Ayush medication among pediatric age group. Higher utilization was observed in the patients that belonged to lower income group. Majority of the patients who did not utilize Ayush medicines had no specific reason for non-utilization. Acceptability and palatability of Ayush dosage forms among pediatric patients plays a key role in underutilization of Ayush medicine in pediatric age groups. We conclude that better awareness about the availability of Ayush treatments for pediatric patients and scientific evidence about their efficacy and about their safety shall be prioritized. Future large sized community based studies regarding the utilization of Ayush service in pediatric age group should be carried out for devising better National Health Policies.

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