



## **Scope of Ayurvedic Medicine in Pneumonia Patients Visiting Govt. Hospitals in Bangladesh: A Cross-sectional Study**

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### **Authors' contributions**

*This work was carried out in collaboration with all authors. Authors NH, SH and MAH equally designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JOCAMR/2019/v8i330125

#### Editor(s):

(1) Dr. Francisco Cruz-Sosa, Metropolitan Autonomous University Iztapalapa Campus, Av. San Rafael Atlixco 186, México City, 09340, México.

#### Reviewers:

(1) Hema Nidugala, Rajiv Gandhi University of Health Sciences, India.

(2) W.J.A.B.N. Jayasuriya, University of Sri Jayewardenepura, Sri Lanka.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/53755>

**Original Research Article**

**Received 26 October 2019**

**Accepted 31 December 2019**

**Published 07 January 2020**

### **ABSTRACT**

Ayurveda is considered by many scholars to be the oldest healing science and is often called the 'Mother of all healing'. In this sub-continent, it is one of the ancient health care systems. Nowadays, it is practiced by millions of people in India, Nepal, Sri Lanka, China, Tibet, Pakistan, and Bangladesh. In response to the urge of public demand and to achieve the goals of primary health care, the Government of Bangladesh has appointed and posted numbers of Ayurvedic doctors all over Bangladesh. It was due to assay the impact of these recruitments in primary health care as well as in national health services. Aiming this a cross-sectional study was designed to conduct within randomly selected twenty-two centers, approximately covering 35% of each administrative division. This study revealed that roughly 12% of total visiting patients seeking Ayurvedic health service, and among them 7.26% of patients were <5 years old children. A calculative 14.20%, children were suffering from Respiratory Tract Infection (RTI), and of these RTI

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patients, 42.77% were diagnosed as pneumonia. Bashakarist, Chandramrita rasa, Shwas Kuthar rasa, and Talishadi Churna were prescribed invariably to manage RTIs and pneumonia. This study revealed with such limited manpower of Ayurvedic medical service, it is helping significantly in securing primary health care goals set by the government. The inclusion of more qualified manpower and engaging them in effective training may help the government to conquer the zenith of success in national health services.

**Keywords:** *Ayurvedic medicine; pneumonia; Bashakarisht; Chandramrita rasa; Shwas kuthar rasa; Talishadi churna.*

## 1. INTRODUCTION

Ayurvedic medicine is an ancient concept of medicine, originated in India, and practiced as traditional medicine for more than 5000 years [1]. 'Health for all by 2000 AD' a global goal set by the World Health Organization (WHO) at ALMA-ATA declaration, proposed Ayurvedic medicine as a part of primary health care [2]. From the very beginning, controversy accompanying the alternative medicine as it's mode of action is obscured; researchers have found that the healing process is influenced by an individual's bio-psycho-spiritual unity and equilibrium, as well as their adaption to the environment, and also the way they recognize their own complex individual existence, both in sickness and health [3]. In Ayurveda, the contributing factors of health are biological, ecological, medical, psychological, sociocultural, spiritual and metaphysical factors; all these are interdependent, strengthened together to maintain harmonization and integration of these determinants in a multifaceted system, identified as health [3,4]. Being a member of Complementary and Alternative Medicine [5], Ayurveda is widely practiced in many countries like India, Nepal, Srilanka, China, Pakistan, and Bangladesh [6,7]. Since the independence of Bangladesh, the Board of Unani and Ayurvedic Medicine was established to govern this system of medicine, and sequentially a National Drug Policy was introduced in 1982 which brought Unani and Ayurvedic drugs under the supervision of the Department of Drug Administration [8], a part of Ministry of Health and Family Welfare (MHFW) of Bangladesh [9]. The increasing popularity of using CAM by the people urged the Government to appoint Ayurvedic Medical Officers in the government hospitals, along with Allopathic Medical Officers, to obtain the goal of primary health care. Director-General of Health Service (DGHS) was recruiting Ayurvedic medical officers since 1999, and recent recruitment held in 2014 under Health, Population and Nutrition Sector Development Project (HPNSDP); a total

of Eighty six Ayurvedic doctors were included in the national health system and they are providing help at sixty hospitals. However, this study was intended to exclude the impression of this system of medicine in various hospitals as well as in the national health system [9].

## 2. METHODOLOGY

There are sixty government hospitals facilitating Ayurvedic medical services in eight administrative divisions of Bangladesh. A cross-sectional study was designed and carried out among the visiting patients in 22 randomly selected hospitals out of these 60 hospitals. This study was commenced in March 2019 and completed by June 2019. Two different sets of data were considered for the study, the first one is the retrospective data collected from the hospital registry, dated from 1<sup>st</sup> February 2018 to 28<sup>th</sup> February 2019, and the second one is collected from 'face to face' interview of the twenty visiting patients at each selected center. The data collected from the hospital registry used for clinical data analysis and data collected from the intra-personal interview (20 people from each center \* 22 randomly selected centers = 440 individuals) used in demographic data analysis. A predesigned questionnaire was used as a data collecting tool.

## 3. RESULTS AND DISCUSSION

This study was conducted among the various Upazila and district hospitals within eight-divisions of Bangladesh. Approximate 35% (22 out of 60 hospitals) hospital's data were included in this study (Fig. 1). An average of 106376.72, 88% of patients visited at the health centers for conventional medical treatment, whereas an average of 14826.96, 12% of patients were attending for Ayurvedic medicine in these hospitals (Table 1). Among the patients who were seeking Ayurvedic medicine, an average of 52.05% was female and 47.95% were male. A calculative 7.26% of patients from <5 years of

age group, 8.68% from 5-14 years age group, 59.80% from 15-49 years age group and 18.68% from 49+ age group were observed (Table 1). Education is one of the basic needs of a citizen, and this study found that around 3.1% of consumers were short of this. About 13.1% of clients did not finish primary school, whereas 30% finished that level (Table 1).

However, most of the visiting customers, 40% completed secondary school level; though calculated 10% and 3.63% completed graduation and masters level, respectively (Table 1).

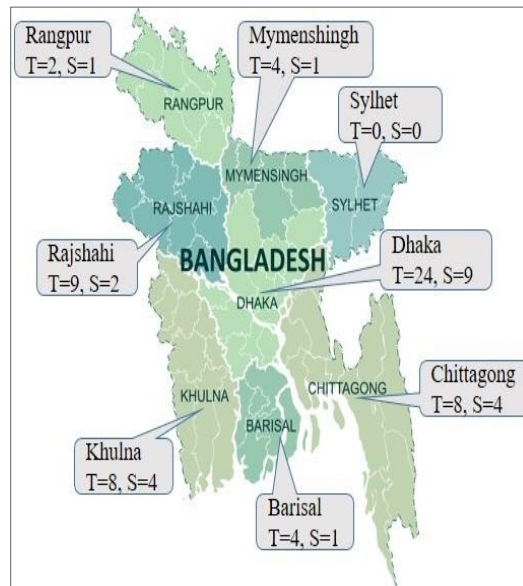
Occupation of the family head was assayed to get a picture of the socio-economical status of the visiting patients. The highest number of 35.90% of the patients were from a farmer family, and followed by 25.90% from day-labor; about 17.95%, 15.90%, and 4.31% were from different families where family-head with service holder, garments worker and small business-man respectively (Table 1).

Child patients from both sexes, with various clinical features, were visiting and seeking Ayurvedic medicines at the hospitals. Clinical complaints with high fever, common cold, and hay fever found the highest in this list with 17.70%, followed by diarrheal diseases with 15.50% and respiratory tract infection (RTI) with 14.20%, respectively. Clinical conditions including Worm infestation in 12.30%, urinary

tract infection (UTI) in 10.60%, Anaemia in 9.70%, Ringworm in 8.50%, and Scabies in 6.50% also found significantly. The rest 6.30% of patients found with various diseases (Fig. 2).

Child patients with respiratory tract infections are always vulnerable to pneumonia. In this study, an extra effort was given to sort the number and ratio of children turns or suffer from pneumonia. This study revealed that the total number of 51,728 children was visiting the Ayurvedic out patients department, among them, Respiratory Tract Infection (RTI) was diagnosed in 7,361 (14.20%) patients, however, 3,149 (42.77%) of these RTI patients were spotted as pneumonia (Fig. 3).

Pneumonia is one of the major concerns of respiratory tract infection diseases. In the Dhaka division, 38.68% of children were suffering from pneumonia out of 4632 RTI patients, while in Chittagong, Khulna, and Rajshahi division this was 60.64% out of 874, 53.09% out of 857 and 27.58% out of 522 RTI patients, respectively. However, this equation was 61.66% out of 120, 64.55% out of 158 and 26.26% out of 198 RTI patients, in Barisal, Rangpur and Mymensingh division, respectively (Fig. 4). This study observed that there is a number of Ayurvedic medicines to treat childhood diseases and pneumonia; most of the medicines were supplied from the respected hospital facilities including Bashokarist, Chandramrita rasa. Shwas kuthar and Talishadi churna. Provided treatment in



**Fig. 1. Distribution of health centers with Ayurvedic health services in 8 divisions; here T= total number of hospitals, S= selected number of hospitals for this study**

pneumonia, found to be satisfactorily effective in 84% of children, in 11% of the patients found less effective, and in 5% of the patients experienced an aggravation of the disease condition.

Bashokarist is made of *Adhatoda vasica*, locally called 'Vasaka', a well-known Ayurvedic medicine prescribed in many clinical conditions including fever, cough, dyspnea, and asthma; this herb also an identified antimicrobial agent, bronchodilator, antihistaminic [10,11] and a proven expectorant [12]. There are numbers of the literature revealed that Shwas kuthar rasa, a herbo-mineral formulation, helps in treating

asthma, cold allergy, cough, laryngitis and many other clinical conditions including heart disease [13]. Chandramrita rasa and Talishadi churna help in the healing process [14]. This current study results also justify these drugs in RTI and pneumonia treatment.

However, Primary health care is a principal concern of a health service, and the addition of Ayurvedic medicine improves the quality of primary health care [15]. Interestingly, in India, the number of AYUSH doctors is higher than the number of Allopathic doctors [16]. In Bangladesh, Ayurvedic doctors are still struggling to reach their desired goals.

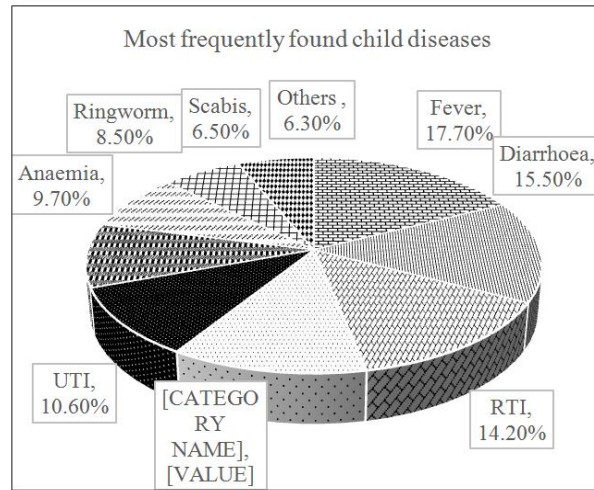


Fig. 2. Most frequently found child diseases who were taking ayurvedic medicine

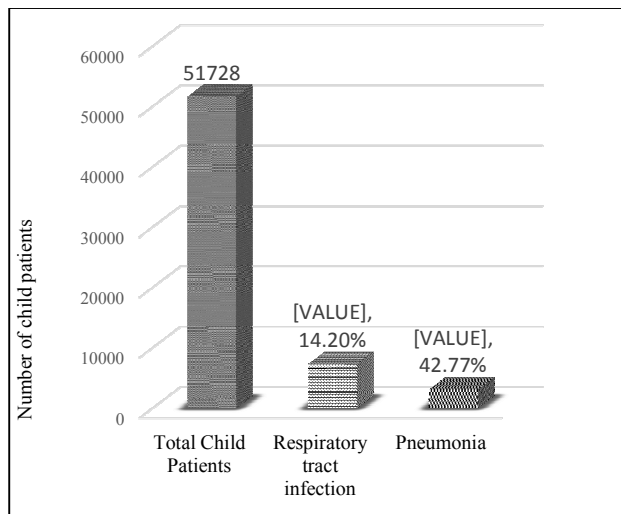
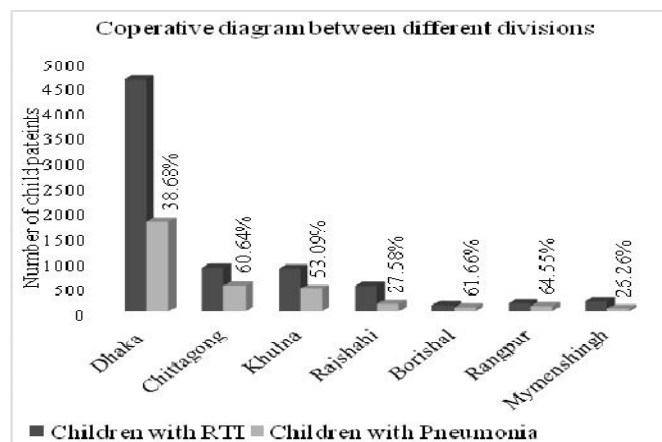


Fig. 3. Presentation of Child pneumonia patients, 42.72% of total RTI patients were suffering from pneumonia

**Table 1. Demographic presentation of the study population**

Variables	Results
<b>Number of patients in the hospitals (Average)</b>	
Allopathy OPD	106376.72 (88%)
Ayurvedic OPD	14826.96 (12%)
<b>Distribution of ayurvedic patients (Average)</b>	
<b>Gender</b>	
Male	156406 (47.95%)
Female	169787 (52.05%)
<b>Age</b>	
<5 years	1076.68 (7.26%)
5-14 years	1287.5 (8.68%)
14-49years	8867.59 (59.80%)
49+years	2769.73 (18.68%)
<b>Education (Head of the family)</b>	
Illiterate	14 (3.1%)
Primary incomplete	58 (13.1%)
Primary complete	132 (30%)
Secondary school complete	176 (40%)
Graduate	44 (10%)
Masters and higher	16 (3.63%)
<b>Occupation (Head of the family)</b>	
Day labor	114 (25.90%)
Farmer	158 (35.90%)
Small Business	19 (4.31%)
Service holder	79 (17.95%)
Garments worker	70 (15.90%)



**Fig. 4. Comparative analysis among the divisions**

**4. CONCLUSION**

This current study shows a significant impact of Ayurvedic medicines in managing pneumonia, which demands a core focus on this system. A series of initiations in accordance with the Ayurvedic medical doctors should be implemented, including extended training programs, research, and nation-wide awareness programs in favor of Ayurvedic medicine. An

increased number of Ayurvedic medical officers will ensure more effective services and secure the long desired primary health care goal.

**DISCLAIMER**

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and

producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by the personal efforts of the authors.

### CONSENT

As per international standards, the patient's written consent has been collected and preserved by the author(s).

### ETHICAL APPROVAL

Ethical clearance was sought from the appropriate body as per the direction of the Line Director (LD), AMC-DGHS. Necessary permission to conduct this study was taken from the respected authority.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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*Peer-review history:*  
The peer review history for this paper can be accessed here:  
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