

## **Research Article**

# **Assessing the Suitability of Current *Swasthavritta* Syllabus of Bachelor of Ayurvedic Medicine and Surgery (BAMS) For Meeting the Public Health Technical and Leadership Skill Requirements**

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**Abstract:** Ayurveda workforces are increasingly being recognized by many segments of the society and have been put in several programmes be it curative or preventive aspects of health care. This does not happen universally across all the strata of our society owing to several reasons. The teaching, training and the curriculum of Ayurveda course (BAMS) pencil in lot of skepticism among the elites of other systems of medicine and many other people concerned with public health. Hence an assessment was carried out to find out the suitability of *Swasthavritta Vijnan* syllabus of BAMS course for meeting the public health technical and leadership skill requirements. The detailed syllabus was obtained from the Central Council of Indian Medicine for the purpose of analysis. It was found that the syllabus is very comprehensive and encompasses many subjects which are relevant to the technical and leadership skill requirements in public health. The broad outlines of the subjects include concept of health, personal hygiene, occupational and environmental health, epidemiology (including clinical epidemiology), school health programme, health care system in India, national health programmes, family welfare programme, maternal and child health, primary health care, preventive geriatrics, international health, disaster management and practical section include immunization, health survey, visiting primary health center etc. From this assessment it can be concluded that the teaching and training imparted in Ayurvedic institutions as per the syllabus of *Swasthavritta* of BAMS is up to the mark and can help in meeting the technical and leadership skills of public health workforce in India.

**Keywords:** BAMS Syllabus, Leadership, Public Health, Skills, Suitability, Technical

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## **INTRODUCTION**

Ayurveda is believed to be the oldest medical doctrine of human civilization [1]. This system of medicine has its root in India and evolved through a continuous process from its original *Vedic* form to modern day Indian System of Medicine formally taught in schools of Ayurveda [2]. The present syllabus, teaching and training methodology in the Ayurvedic institutions around the country involves an amalgamation of both modern medicine and classical Ayurvedic medicine. Greater emphasis is being rendered to this system during these days owing to its acceptance at different level. Several reformations have happened in its policy, standardization of drugs, medicinal plants, teaching and training since the foundation of Department of AYUSH under aegis of the Ministry of health and Family welfare Govt. of India. During the early phase this system of medicine was limited to its own field with few exception in some states as health in India is a state issue. This limitation is applicable to the Ayurveda workforces, therapeutics and the principles as well. The scenario took a transformation after the initiation of National Rural

Health Mission in 2005. It brought a concept called mainstreaming of AYUSH and revitalization of local health traditions utilizing the untapped Ayurveda workforces, therapeutics and principles besides other AYUSH systems of medicine. The AYUSH Doctors and the paramedics were collocated in various health institutions such as Primary Health Centers, Community Health Center, Sub District Hospital and the District Hospital. As on 01/01/2010 there were 61% of Ayurveda, 31.40% of Homoeopathy, 6.50% of Unani, 0.90% of Siddha and 0.20% of Naturopathy doctors serving in India. Similarly about 30.9 lakhs were being served by District hospitals, 4.3 lakhs of rural population were being served by CHCs and 0.8 lakhs of rural population were being served by PHCs in various states/UTs wherever the corresponding facilities existed [3]. At this point it becomes imperative for the AYUSH doctor to be properly trained and oriented in public health issues and challenges in the country. This is only possible with academic training and exposure of these doctors at their under graduate as well as post graduate level. At undergraduate level Ayurveda students (students pursuing BAMS) study *Swasthavritta*

*Vijnan* as an equivalent subject to public health which provides technical orientation to the realm of public health. Ayurveda students can specialize this course at Post Graduate level but this paper is limited to assessment of this subject at under graduate level.

**OBJECTIVE**

The main objective of the study was to make an assessment on the suitability of current *Swasthavritta* syllabus of Bachelor of Ayurvedic Medicine and Surgery (BAMS) for meeting public health technical and leadership skill requirements.

**METHODOLOGY**

The entire syllabus of *Swasthavritta Vijnan* was obtained from the Central Council of Indian Medicine for the purpose of assessment. Each section and sub section of the syllabus was analyzed carefully to assess the subjects that are very much pertinent to the development of public health technical and leadership skills. The syllabus was also compared with MPH syllabus of Achutha Menon Center for Health Science Studies (AMCHSS) of the Sree Chitra Tirunal Institute of Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, Kerala, India. This was done purposefully as in the year 2000 the Ministry of Health & Family Welfare, Government of India recognized

AMCHSS as one of the centers of excellence in public health in India.

**RESULTS**

After a careful analysis of the contents of the syllabus of *Swasthavritta Vijnan* of BAMS the following results were obtained. The syllabus contains two parts such as a Theory part consists of two papers each carrying 100 marks and a practical/viva voce part carrying 100 marks. The syllabus also mentions about the time allotment for each section; the lectures have to be completed within 180 hrs and the practical and demonstrations have to be completed within 50 hrs. Paper I contains two parts; part A contains courses on *Vaiyuktika Swasthavrittam* (Personal Hygiene) and part B contains courses on *Sarvajanika- Samajika Swasthavrittam* (Public Health). Similarly paper II also has two parts; part A contains courses on Yoga & *Nisargopachara* (Yoga and Naturopathy) and part B contains courses on Community Health Care. The major sections and their sub sections in the syllabus, as obtained from the Central Council of Indian Medicine, with the list courses offered under MPH programme at Achutha Menon Center for Health Science Studies (AMCHSS) of the Sree Chitra Tirunal Institute of Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, Kerala, India are as follows;

**Table 1: Detail list of courses for Swasthavritta Vijnan of BAMS course as obtained from Central Council of Indian Medicine [4]**

<b>PAPER I</b>	
<b>Part A [Vaiyuktika Swasthavrittam (Personal Hygiene)]</b>	<b>Part B [Sarvajanika- Samajika Swasthavrittam (Public Health)]</b>
<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Dianacharya</li> <li>• Ratricharya</li> <li>• Ritucharya</li> <li>• Sadvritta</li> <li>• Trayopastambha (Three pillars of health)</li> <li>• Roganutpadaniya</li> </ul>	<ul style="list-style-type: none"> <li>• Janapadodhwamsa</li> <li>• Vayu (Air)</li> <li>• Jala (Water)</li> <li>• Bhumi (Land &amp; Housing)</li> <li>• Prakasha (Lighting)</li> <li>• Dhvani pradushana (Noise)</li> <li>• Vikirana (radiation)</li> <li>• Apadravya nirmulana (Disposal of solid waste)</li> <li>• Malanishkasana vyavastha (Excreta disposal)</li> <li>• Disaster Management</li> <li>• Occupational Health</li> <li>• School Health Services</li> <li>• Epidemiology</li> <li>• Disposal of Dead body</li> <li>• Chikitsalaya Bhavana (Hospital Building)</li> <li>• Meteorology (Ritu evum vatavarana Jnana)</li> </ul>
<b>PAPER II</b>	
<b>Part A [Yoga &amp; Nisargopachara]</b>	<b>Part B [Community Health Care]</b>
<p style="margin-left: 20px;"><b>Yoga</b></p> <ul style="list-style-type: none"> <li>• Etymology</li> <li>• Definitions</li> <li>• Development of Yoga (From ancient time to present time)</li> <li>• Different Streams of Yoga</li> <li>• Eight Branches of Yoga</li> </ul>	<ul style="list-style-type: none"> <li>• Prathamika Swasthya Samrakshana ( Primary Health Care)</li> <li>• Parivara Kalyana Karyakrama (Family Welfare Programmes)</li> <li>• Rasthriya Karyakrama (National Programmes)</li> <li>• Matru- Shishu Kalyana Karyakrama (Mother and Child Welfare Programme)</li> </ul>

<ul style="list-style-type: none"> <li>• Description of Yoga in Ayurveda</li> <li>• Panchakosha theory</li> <li>• Integrated Approach of Yoga therapy</li> <li>• Yoga package for LBA, Obesity, Asthma, Diabetes Mellitus</li> <li>• Effect of Yoga practice on physical and mental dosha</li> </ul> <p><b><u>Nisargopachara</u></b></p> <ul style="list-style-type: none"> <li>• Prakritika Chikitsa (Nature Cure)</li> <li>• Jala Chikitsa</li> <li>• Mrittika Chikitsa (Mud Therapy)</li> <li>• Surya Kirana sevana (Sun bath-Haelio therapy &amp; Chromotherapy)</li> <li>• Mardana (Massage) - Different methods of Mardana</li> <li>• Diet</li> <li>• Upvasa Chikitsa (Fasting)</li> </ul>	<ul style="list-style-type: none"> <li>• Preventive Geriatrics</li> <li>• International Health</li> <li>• Swasthya Prashasana (Health Systems in India)</li> <li>• Health statistics</li> </ul>
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**Table 2: List of courses offered in the MPH programme at Achutha Menon Center Health Science Studies (AMCHSS) of the Sree Chitra Tirunal Institute of Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, Kerala, India [5]**

NAME OF COURSE	NUMBER OF CREDITS
<b>YEAR I</b>	
Orientation	Nil
Basic Biostatistics	4
Introduction to Epidemiology	3
Health and Development	3
Basic Health Economics	2
Gender Issues in Health	2
Health Policy Analysis 1	2
Anthropological Perspectives in Health	1
Quantitative Research Methods	2
Health Management	4
Ethics in Public Health	2
Health Care System in India	2
Health and Environment	3
<b>Total credits for Year I</b>	<b>30</b>
<b>YEAR II</b>	
Intermediate Biostatistics	4
Intermediate Epidemiology	2
Qualitative Research Methods	2
Infectious disease Epidemiology	2
Health Policy analysis II	1
Public Health Technologies	2
Chronic Disease Epidemiology	2
Dissertation	15
Internship	Nil
<b>Total credits for Year II</b>	<b>30</b>
<b>Total credits for two years</b>	<b>60</b>

## DISCUSSION

It was observed from the syllabus of *Swathavritta Vijnana* that it contains two papers with two parts in each of these papers. These two papers exhibit a blend of both traditional Ayurvedic courses with modern public health courses. In this paper the courses which are found to be suitable for enhancing public health technical and leadership skills are only considered and

compared with MPH courses offered at Achutha Menon Center for Health Science Studies (AMCHSS) of the Sree Chitra Tirunal Institute of Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, Kerala, India. The subjects and the topics which can enhance public health leadership and technical skills are discussed below. The first section outlines the list of courses that can enhance the public health leadership

and technical skills and the second section delineates a comparative analysis with MPH courses of AMCHSS, SCTIMST.

The theoretical concepts delineating pure Ayurvedic philosophy have not been dealt with as the same goes beyond the scope of this paper hence the topics that are found suitable for enhancing the public health leadership and technical skills are only discussed below. The Part A of 1<sup>st</sup> paper contains:

- **Introduction:** Includes topics like Definition and Dimensions of health (Physical, Mental and Social), Concept of Well being (Objective, Subjective, Quality of life and Standard of living).
- **Mental Health:** contains topics such as Concept of Mental Health according to Ayurveda and Modern medicine.
- **Nutrition and dietetics:** such as Proximate principles of Food, Nutritional requirements, Balanced diet for (a) Workers –Sedentary /Moderate / Hard (b) Pregnant and lactating women (c) Children (d) Infants, Sources and deficiency diseases of Protein, Carbohydrate, Fat, Minerals and Vitamins, Dietetic standards, National Nutritional programmes, Social aspects of nutrition, Food groups - Cereals and millets, Leafy and Non leafy vegetables, roots and tubers, Fruits, Fats & Oils, Jaggery, sugar, honey, Water and Beverages, Milk and Milk products, Spices & Condiments, Prepared Food, Meat group, Food hygiene, Milk hygiene, Milk composition, Source of infection (for Milk), Milk borne diseases, Clean and safe milk, Pasteurization of milk, Meat hygiene, Meat inspection, Slaughter house, Freshness of fish and egg, Fruits and Vegetable hygiene, Sanitation of eating places, Preservation of food, Food handlers, Food borne diseases, Balanced diet, Food fortification, Food toxicants, Properties of Vegetarian and Non-vegetarian diet, Effects of Spices and condiments, Consumption of Alcohol and its effects and Ayurvedic diet in life style disorders-Diabetes, Hypertension, Obesity and Coronary heart Disease [4].

The part B of 1<sup>st</sup> paper contains:

- **Epidemics:** Causes, Manifestations and Control Measures
- **Air:** Composition, Air in occupied room, Discomfort and comfort zone, Air movement, Air pollution-health and social aspects, Prevention and control of air pollution, Ventilation and its types, Purification and disinfection of air, Mountain air and high altitude health problems

- **Water:** Biological importance of water, Safe and wholesome water, Requirement and uses, Properties of water, Types of water, Water sources, Water pollution, Water related diseases, Water purification, Hardness of water, Water examination, Water problems in India, Rain water harvesting and water recycling
- **Land and Housing:** Types of soil, Soil and health, Social goals of housing, Housing standards, Rural Housing, Housing and Health, Overcrowding and cattle shed
- **Light:** Requirement of light, Natural light, Artificial light, Biological effects of light
- **Radiation:** Sources, effects and Control
- **Disposal of Solid Waste:** Different types of solid waste, Storage and Collection of refuse, Methods of disposal of solid waste (Rural and Urban), Biomedical waste management
- **Excreta Disposal:** Sewered area, Unsewered area, Latrines for camps, fairs and festivals
- **Disaster Management:**
- **Occupational Health:** Occupational hazards, Occupational diseases, Prevention of occupational diseases, ESI Act and Factories Act, Offensive trades- Effects on health and precaution measures
- **School Health Services:** Health problems of school children, Aspects of school health services, Duties of school medical officer, Maintenance of healthy environment
- **Epidemiology:** Concepts in epidemiology, Concept of disease, Disease Transmission, Concept of causation, Epidemiological triad, Natural History of disease, Risk factors, Concept of Control, Concept of prevention, Modes of intervention, Incidence and prevalence, Disease Dynamics, Modes of transmission, Susceptible host, Host defenses, Immunizing agents, Disease prevention and Control, Disinfection.
- **Epidemiology of communicable diseases/Infectious Disease Epidemiology:**
  - **Respiratory Infections:** Measles, Diphtheria, Pertussis, Mumps, Tuberculosis, SARS, Influenza and Pneumonia
  - **Gastrointestinal Infections:** Cholera, Polio, Viral Hepatitis, Typhoid
  - **Vector Borne Diseases:** Dengue, Chikungunya, Malaria, Filariasis
  - **Sexually Transmitted Diseases:** AIDS, Syphilis, Gonorrhoea, Chancroid
  - **Other infectious diseases:** Leptospirosis, Rabies, Tetanus, Leprosy etc.
  - **Emerging and Re-emerging Infectious diseases**

- **Non-Communicable disease Epidemiology:**
  - Diabetes
  - Hypertension
  - Obesity
  - Coronary Heart Diseases
  - Rheumatic Heart Disease
  - Cancer
- **Disposal of Dead Body**
  - Burning
  - Burial
  - Electric Cremation
- **Hospital Building:** The second paper of *Swastavritta* syllabus contains two parts; the first part is dedicated to Yoga and Naturopathy and the second part is dedicated to Community health care. This paper has not discussed about the first part owing to its own philosophical approach. Though many of these concepts are being used these days for the management of community health problems but this paper describes only about the second part of the syllabus and following are the topics which can be considered suitable for enhancing public health leadership and technical skills.<sup>(4)</sup>
- **Primary health care:** Definition, Principles, Elements, Structure, Role of Ayurveda in Primary health care.
- **Family Welfare Programme:** Demography, Demographic Cycle, Life Expectancy, Family planning, Methods of Family Planning.
- **National Programmes:** Revised National Tuberculosis Control Programme, National Leprosy Elimination Programme, National AIDS Control Programme, National Blindness Control Programme, Pulse Polio Immunization, Non-Communicable Disease Control Programme, National Cancer Control Programme, National Rural Health Mission, National Malaria Eradication Programme, National Filaria Control Programme, Universal Immunization Programme, National Water Supply and Sanitation Programme, Reproductive and Child Health Programme, Minimum Needs Programme, including all emerging national health programmes.
- **Mother and Child Welfare Programme:** Antenatal Care, Post Natal Care, Neonatal care, Child Health Problems and Indicators of MCH care.
- **Preventive Geriatrics**
- **International Health:** World Health Organization (Objective, Structure, and Function of WHO), Alma-Ata Declaration, National Health Policy and Importance of Ayurveda in it, UN agencies, Bilateral Health Agencies.
- **Health System in India:** Central Level, State Level, District Level, AYUSH.

- **Health Statistics:** Definition Statistics, Health Statistics and Vital Statistics, Sources and Uses of Health Statistics, Data Collection, Classification and Presentation, Mean, Median, Mode, Health Survey, Mortality rates, Morbidity rates and Fertility rates [4].

When a comparison was made on the basis of the broad outlines of the syllabus of MPH programme of Achutha Menon Center for Health Science Studies (AMCHSS) of the Sree Chitra Tirunal Institute of Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, Kerala, India with that of *Swathavritta Vijnan* Syllabus of BAMS it was observed that 60% i.e. 12 out of 20 courses are found matching [4, 5]. These courses include orientation, Basics of Biostatistics, Introduction to Epidemiology, Health Policy, Health Care system in India, Health and Environment, Intermediate Biostatistics, Intermediate Epidemiology, Infectious disease epidemiology, Chronic Disease Epidemiology, Research Methods and Health Policy. *Swathavritta Vijnan* is a subject in the UG programme of Ayurveda and the same is not a specialized course like PG level. In another study when compared with Community Medicine syllabus of MBBS 88.88% i.e. 16 out of 18 courses are found matching. The broad outlines of similar courses in both these syllabi are community medicine and introduction to humanities and community medicine. When the syllabus was compared with MPH syllabus of PGIMER, Chandigarh, India 67.4% i.e. 56 topics out of 83, are found to be conceptually similar and 85.5% of the courses are similar when compared with MD community medicine syllabus [6]. This indicates that Ayurveda graduates can be opted for public health leadership and technical capacities based on their UG studies and can also be given preference in post graduate studies in public health. Besides Ayurveda graduates are also showing lot of interest in pursuing a career in public health. In one of the study conducted among Ayurveda interns it was found that 70% of interns are interested in pursuing a career in public health [7, 8].

## CONCLUSION

In this study the course of *Swathavritta Vijnan* was assessed for its suitability in enhancing the public health technical and leadership skill requirements. While doing so it can be remembered that the courses of *Swathavritta Vijnana* of BAMS was assessed for suitability of technical and leadership skill requirement which is a mere portion of an undergraduate degree not a specialized programme and the comparing counterpart is a specialized post graduate programme on public health. Besides detailed assessment on various sections and subsections of *Swathavritta Vijnan* the study also adopted a method where the syllabi of *Swathavritta Vijnan* of BAMS and MPH of AMCHSS were compared for conceptual similarity but the same does not solely ensure imparting technical and leadership

skills to Ayurveda Graduates. As gaining leadership and technical skills would again depend upon the pedagogy, practical sessions, and exposure to public health issues within the community as prescribed in the syllabus. This probably requires reorientation of faculty members teaching at different Ayurveda institutions in the country. Some of the important measures such as ROME (Reorientation of Medical Education), CME (Continued Medical Education) and RRA (Rapid Rural Appraisal) could be adopted specifically for improving public health skills both among the faculty members and the students as well.

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