

ROLE OF TRADITIONAL MEDICINE IN IMPROVING THE SOCIO-ECONOMIC STATUS OF RURAL AND URBAN INDIA

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“If there is one place on the face of earth where all the dreams of living men have found a home from the very earliest days when man began the dream of existence, it is India”.(Romain Rolland-French Philosopher-1986-1944).

ABSTRACT

Ayurveda since the time period unknown is serving the Mankind. It has been documented in the Manuscripts by greedless saints of Indian culture. It has the ability to support today's fast pace life with its unique concepts and formulations. But unfortunately it is not paid much attention and due to this such knowledge could even get extinct. AYUSH department is supported with only 3.37% whereas the Department of Health and Family Welfare is supported with 90% of total health budget allocation. Still the Rural India is being served by Ayurveda. The approach of Ayurveda and its interlinking relationship between Environment, Health and Employment could create a balance.

Keywords: AYUSH, DHR, AIDS, MoHFW, Ayurveda, Traditional Medicine

INTRODUCTION

In Ancient period, India made progress in different walk of life varying from philosophy to science. Very rich Indian culture had been flourished at that time. There were many fields where India had made its expertise like Astronomy, Mathematics, and Medicine etc. Ayurveda traces its origin to the Veda and Athervaveda in particular. Ayurveda occupied its prominent place in Ancient time which has lost its importance in modern time where allopathic system has bloomed immensely. The traditional medicine still has its relevance for better treatment of diseases as allopathic system do. The allopathic system also has many disadvantages which cannot be ignored if better alternative is available in tra-

ditional medicine. This paper has cited many case studies which show how both the system (allopathic and traditional system) together can reduce the cost treatment in many diseases.

Today, it is estimated that about 80 % of people in developing countries still rely on traditional medicine which is largely based on species of plants and animals for their primary health care [1]. About 500 plants with medicinal use are mentioned in ancient literature and around 800 plants have been used in indigenous system of medicine. India is a vast repository of medicinal plants that are used in traditional medical treatment [2].

History of Traditional Medicine (Ayurveda)

Ayurveda the Indigenous system of Medicine of India is taken to be a part of the fourth veda, Atharvaveda. Ayurveda is a science of Life and has been divided into four periods; The Vedic Period the original research and classical periods; a period of compilation of Ayurvedic methods and periods of Rastantras and Sidhas; chemist physician and a period of stagnation and eventually recompilation (Udupa KN 1975). The Rigveda (5000 BC) has recorded 67 medicinal plants, Yajurveda 81 species, Atharveda (4500-2500 BC) 290 species, Charaka samhita (700 BC) and Sushrut samhita (200 BC) had described properties and uses of 1100 and 1270 species respectively in compounding of drugs and these are still used in the classical formulations in the Ayurvedic system of medicine [3].

The historic contribution of Sushruta, the ancient surgeon of India, is well recognized for his innovative method of rhinoplasty, extracapsular lens extraction in cataract, anal and dental surgeries. However, little is known regarding his vivid description of diabetes (madhumeha), angina (hritshoola) and obesity [4].

The knowledge of rhinoplasty spread from India to Arabia and Persia and from there to Egypt and Italy in the 15th century. The first translation of Sushruta Samhita was in Latin by Hessler in 1844 and in Arabic by Ibn Abi Usaybia (1203-1269 AD) and later into German by Vellurs. Bhishagrajna translated it in English in 1907. Although Britishers lived in India for a long time, they were not aware of Indian Rhinoplasty till 1793. Mr. James Findlay and Mr. Thomas Crusoe who were surgeons at the

British residency in Poona in 1793 witnessed the operation on "Cowasjee" and reported the details of the operation in the Madras Gazette. The same operation on Cowasjee was later published in Gentleman's magazine, London, Oct. 1794 by a letter from Mr. Lucas as follows: "Cowasjee, a Mahratta of the caste of the husbandmen, he was a bullock driver with the English Army in the war of 1792, and was made prisoner by Tipu Sultan, who cut off his nose and one of his hands. He joined the Bombay Army near Seringapatam. For about a year he remained without a nose, when he had a new one put on by a man of the Brickmaker (potter's) caste near Poona" [5].

Introduction of Allopathy in India

According to Dr. Douglas Guthrie [6], No other country has shown keen interest on the history of medicine like the way India did today. Since 1947, when India's 400 million inhabitants emerged as an independent nation, this interest has grown and extended which has existed for centuries. Writing in his book on Hindu Medicine T.A. Wise (1867) predicted in its continuance in the following words ' *As Hindustan becomes more settled under the British rule, a more intimate knowledge of the ancient Hindu Medical works will prove that they contain much that is interesting and instructive* '.

During the 19th and first half of the 20th century, under the influence of the British in India, the traditional systems were gradually replaced by modern medicine. From the 1920s to the mid 1940s, provincial governments and popular leaders like Mahatma Gandhi made various efforts to reverse

this trend. Colleges and other institutions were set up to revive the practice of indigenous medical sciences and integrate them with the country's main health care system. However in 1946, when India's first National Health Care Policy was outlined by the Bhore committee, traditional practices were totally ignored. Subsequent committees tried to incorporate this ignorance, and in 1961 the Mudaliar committee made strong recommendations for integrating modern medicine with Ayurveda in education, practice and research. But by that time modern medicine was deeply implanted throughout the country and its dominance had become irreversible [7].

From the early part of the nineteenth century, western medicine steadily struck roots in the Indian soil. The founding of the medical schools to impart instructions in English in western medicine led to fulfill medical requirement of the British army. Indian system of Medicine receded in to the background. However, in the last two decades there has been renewed interest in the study of Ayurveda especially its *Materia medica*. Fresh impetus came from the rediscovery of medicinal properties of *Rawfolia* or *Sarpagandha* [8].

Health in India

Health should be viewed as not merely the absence of disease but as a state of complete physical, mental and social well-being. At present, India's health care system consists of a mix of public and private sector providers of health services. Networks of health care facilities at the primary, secondary and tertiary level run mainly by State Governments providing free or very low cost medical services. There is also an extensive private health care sector, cov-

ering the entire spectrum from individual doctors and their clinics to general hospitals and super hospitals. There are four departments under Ministry of Health and Family Welfare namely Department of Health and Family Welfare, Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy (AYUSH), Department of Health Research and Department of AIDS control.

India follows planning model for the development of various sectors as a long term and short term goal. Currently Twelfth Five Year Plan (2012-2017) is going on. Department of AYUSH was created under the ministry of health and family welfare where traditional system of medicine like Ayurveda, Unani, Sidha and Homeopathy was clubbed together to give acronym AYUSH. In Eleventh Plan Objective of 'main-streaming AYUSH systems were to actively supplement the efforts of allopathic system', 40 per cent PHCs, 65 per cent CHCs and 69 per cent District Hospitals have co-related AYUSH facilities. Though considerable progress has been made in documenting identity and quality standards of herbal medicines, scientific validation of AYUSH principles, remedies and therapies has not progressed. Similarly, the National Medical Plans Board has supported many projects for conservations, cultivation and storage of medicinal plants.

A. Expenditure by government on Allopathic system and AYUSH (Traditional Medicine)

In the Twelfth Plan, general tax revenues is the principle source of finance for publically delivered health services supplemented by partnerships with the private sectors and contribution by corporate as a part

of their Corporate Social Responsibility. For financing the Twelfth Plan the projections envisage increasing total public funding, plan and non-plan, on core health from 1.04 percent of GDP in 2011-12 to 1.87 per cent of GDP by the end of Twelfth Plan. The

Central and State funding for Health, as a proportion to total public sector health funding remain at a 2011-12 levels of 33 per cent and 67 per cent respectively (Twelfth Five Year Plan (2012-17)).

Table 1: Annual budget allocation to MOHFS as department wise in 2011-12 to 2013-14

Department of MoHFW	2011-12		2012-13		2013-14	
	Total expenditure	ex-Per cent	Total expenditure	Ex-Per cent	Total expenditure	Ex-Per cent
Department of Health and Family Welfare	24355.08	89.54	30702.00	89.02	33278.00	89.14
Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy	783.18	2.87	1178.00	3.41	1259.00	3.37
Department of Health Research	746.43	2.744	908.00	2.63	1008.00	2.70
AIDS Control	1313.86	4.83	1700.00	4.92	1785.00	4.78
Total	27198.55	100	34488.00	100	37330.00	100

Source: Budget expenditure, Ministry of Health and Family Welfare, GOI

Annual budget allocation of MoHFW was analyzed from 2011-12 to 2013-14 as a plan and non-plan where the total annual allocation in 2011-12 was 27198.55 crore in which department of health and family welfare constituted 89.54% while department of AYUSH share was only 2.87 %. The other two departments of health research and AIDS controls constitute 2.74% and 4.83 % respectively. The total annual allocation in 2011-12 was increased from 27198.55 to 37330 crore in 2013-14. Other two department shares in 2013-14 remains same where department of health and family welfare still constitutes major chunk of budget that is 89.14% while department of AYUSH share got increased from 2.87% in 2011-12 to 3.37% in 2013-14. Other two department's share remained almost same.

Department of health and family welfare which constitutes around 90% of health budget basically follows the allopathic system of treatment. The budget allocation itself shows that allopathic system of medicine has been given the prime importance in health sector while AYUSH has been ignored.

A. Expenditure by Household on Health in India

Expenditure on medical care has two components: institutional (incurred as in patient of a medical institution) and non-institutional. Data were collected by National Sample Survey report no 558 with a reference period of 365 days for the institutional component and 30 days for the other. The following table shows the details of survey.

Table 2: Details of Medical Expenditure, all-India

Items	Non-Institutional				Institutional			
	Per capita expenditure (Rs.) in 30 days		% of hhs incurring expenditure in 30 days		Per capita expenditure (Rs.) in 30 days		% of hhs incurring expenditure in 365 days	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Medicine	51.24	70.83	76.8	73.3	13.46	17.53	14.1	13.1
X-ray, pathological test, etc	3.73	6.70	5.4	5.8	3.29	5.64	9.4	9.6
Doctor's/surgeon's fee	7.21	13.41	32.6	38.4	4.16	7.58	10.5	10.8
Hospital/nursing home charges	-	-	-	-	6.32	13.67	8.8	10.4
Other medical expenditure	2.19	3.33	-	-	3.58	7.02	6.6	6.2
Medical: all	64.37	94.27	78.5	78.5	30.81	51.44	15.0	14.4

Source: NSS Report No. 558: Household Consumption of Various Goods and Services in India, 2011-12

Table 2 shows non-institutional medical expenditure during the last 30 days was reported by about 79% of rural and 75% of urban households. Medicine accounted for nearly 80% of non-institutional medical expenses in rural India and 75% in urban India.

Institutional medical expenditure during the last 365 days was reported by about 14-15% of households in each sector. Here, too, medicine was the largest component but it is found that its share was smaller 44% in the rural sector and 34% in the urban.

Table 3: Percentage Share of Household Expenditure on Health and Drugs in Various States

States (1)	Share of Health to Total Household Ex-		Share of Drug Expenditure to Total	
	(2)	(3)	(4)	(5)
	Rural	Urban	Rural	Urban
Andhra Pradesh	6.56	4.13	72.42	71.36
Assam	2.47	4.04	70.65	68.49
Bihar	4.40	2.96	89.14	82.16
Delhi	3.34	3.34	61.83	72.69
Goa	4.28	5.16	79.19	73.87
Gujrat	5.03	4.22	63.90	69.56
Haryana	6.99	6.56	76.80	76.28
Himanchal Pradesh	5.25	3.91	88.96	74.39
J&K	2.90	3.61	90.39	81.33
Karnataka	4.58	4.17	68.75	55.96
Kerala	7.79	7.15	71.83	64.05
MP	6.05	5.25	81.28	78.21
Maharashtra	7.50	5.98	68.75	59.08
Orissa	5.46	4.51	90.64	90.26

Punjab	7.66	5.60	79.47	73.90
Rajasthan	4.79	4.70	89.43	83.88
Tamil Nadu	5.80	4.45	61.41	61.44
UP	8.20	5.64	86.76	81.47
WB	4.64	4.84	72.89	67.80
All India	6.05	4.91	77.33	69.18

Source: NCMH (2005) cited in Eleventh Five Year Plan, Planning Commission GOI

The above table shows the comparison of health expenditure to total household expenditure and share of drugs to total household expenditure on health. Column 2 and 3 shows the share of health to total household expenditure in rural and urban areas in 2005. Household expenditure of different states on health has shown variation in which Kerala has the maximum expenditure i.e. 7.79 per cent while lowest expenditure was found in Assam i.e. 2.47 per cent of its total expenditure on health in rural areas. All India rural household expenditure on health was 6.05% of total household expenditure. In urban households, highest expenditure is found in Haryana i.e. 6.56 per cent while lowest expenditure was in Bihar i.e. 2.96 per cent. All India urban expenditure was 4.91 per cent of total household expenditure on health in urban areas. This analysis indicates

that rural household has more expenditure on health than urban areas.

In table 3, Colum 4 and 5 shows the rural and urban household expenditure on drugs as compared to total expenditure on health. Major expenditure of the overall expenditure on drugs is found in rural areas. In rural households, Odissa has highest expenditure on drugs i.e. 90.64 per cent while Tamil Nadu has lowest expenditure on drugs i.e. 61.41 per cent. On an average at all India level drugs expenditure in rural household constitutes around 77.33 per cent of total expenditure on health. In urban household Orissa against has highest expenditure on drugs i.e. 90.26 per cent and lowest expenditure on drugs by Karnataka i.e. 55.96 per cent on total expenditure health. The average of total drugs expenditure in urban areas was 69.18 per cent on total health expenditure.

Table 4: Registered Medical Practices under AYUSH

System	Number of Practices	Per cent total
Ayurveda	453661	62.54
Unani	46558	6.41
Siddha	6381	0.87
Naturopathy	888	0.12
Homeopathy	217850	30.03
Total	725383	100

Source: Department of AYUSH cited in Eleventh Five Year Plan, Planning Commission GOI, status as on 1st January 2007

In AYUSH medical system, Ayurveda and Siddha are an Indian origin while

others are originated in foreign land. All these system Ayurveda, Unanai, Siddha,

Homeopathy have been embedded in our culture. These systems are the alternative of allopathic system and important system of treatment in rural India where allopathic system is not accessible. The above table shows that ayurveda and homeopathy together con-

stitutes more than 90 % practices under AYUSH which is 62.54 % and 30.03% respectively while Unani constitutes 6.41%. This table shows a general understanding of the number of practices under AYUSH.

Table 5: Availability of Human Resources during Eleventh Plan

Category	Enrolled and Availability (2011-12)		
	Enrolled	Available	Density
Physicians	9,22,177	6,91,633	57
AYUSH	7,12,121	5,34,091	44
Dentists	1,17,827	88,370	7
Nurses/GNM	12,38,874	7,43,324	61
ANM	6,03,131	3,61,879	30
Pharmacist	6,57,230	4,92,923	41

Source: NCMH (2005) cited in Eleventh Five Year Plan, Planning Commission GOI

Note: Density: Per Lakh Population

Current availability based on attribution @ 25 per cent (physicians, AYUSH, Pharmacists and Dentists), 40 per cent for Nurses and ANM.

Table 5 shows the human resources enrollment and its availability in 2011-12 where the density is taken per lakh population. There were 57 physicians against one lakh population in allopathic system where the human resources under AYUSH were 44 against one lakh population.

Is Ayurvedic Medicine Capable of Treating Diseases?

Herbal drugs constitute a major share of all the officially recognized systems of health in India viz. Ayurveda, Yoga, Unani, Siddha, Homeopathy and Naturopathy except Allopathy. More than 70% of India's 1.1 billion populations still use these non-allopathic systems of medicine [9]. Currently, there is no separate category of herbal drugs or dietary supplements, as per the Indian Drugs Act. However, there is a vast experiential-evidence base for many of the natural drugs. This offers immense opportunities for Observational Therapeutics and

Reverse Pharmacology. Evidence-based herbals are widely used in the diverse systems and manufactured, as per the pharmacopoeial guidelines by a well-organized industry. Significant basic and clinical research has been carried out on the medicinal plants and their formulations, with the state-of-the-art methods in a number of Institutes/Universities. Indian medicinal plants also provide a rich source for antioxidants that are known to prevent/delay different diseased states. The antioxidant protection is observed at different levels. The medicinal plants also contain other beneficial compounds like ingredients for functional foods. Hence, the global knowledge about Ayurveda and Indian herbals will hopefully be enhanced by information on the evidence-base of these plants. This will yield rich dividends in the coming years [10].

The followings are six case studies which show how the traditional medicine

has advantage over the allopathic system. The cases are:

Case 1

Chopra et al [11] Ayurvedic formulations (extracts of *Tinospora cordifolia*, *Zingiber officinale*, *Emblica officinalis*, *Boswellia serrata*), glucosamine sulphate (2 g daily) and celecoxib (200mg daily) were evaluated in a randomized, double-blind, parallel-efficacy, four-arm, multicentre equivalence drug trial of 24 weeks duration. A total of 440 eligible patients suffering from symptomatic knee OA were enrolled and monitored as per protocol. Primary efficacy variables were active body weight-bearing pain (visual analogue scale) and modified WOMAC pain and functional difficulty Likert score (for knee and hip); the corresponding a priori equivalence ranges were ± 1.5 cm, ± 2.5 and ± 8.5 . **Results:** differences between the intervention arms for mean changes in primary efficacy variables were within the equivalence range by intent-to-treat and per protocol analysis. Twenty-six patients showed asymptomatic increased serum glutamic pyruvic transaminase (SGPT) with otherwise normal liver function; seven patients (Ayurvedic intervention) were withdrawn and SGPT normalized after stopping the drug. Other adverse events were mild and did not differ by intervention. Overall, 28% of patients withdrew from the study. **Conclusion:** In this 6-month controlled study of knee OA, Ayurvedic formulations (especially SGCG) significantly reduced knee pain and improved knee function and were equivalent to glucosamine and celecoxib. The unexpected SGPT rise requires further safety assessment. Ayurvedic medicine offers a good alternative to glucosamine

and celecoxib in the treatment of symptomatic knee osteoarthritis: a randomized, double-blind, controlled equivalence drug trial.

Case 2

Silvia D. Stan, Yan Zeng, and Shivendra V. Singh [12] Withaferin A (WA) is derived from the medicinal plant *Withania somnifera* that has been safely used for centuries in the Indian Ayurvedic medicine for treatment of various ailments. We now demonstrate that WA treatment causes G2 and mitotic arrest in human breast cancer cells. Treatment of MDA-MB-231 (estrogenindependent) and MCF-7 (estrogen-responsive) cell lines with WA resulted in a concentration- and time-dependent increase in G2-M fraction, which correlated with a decrease in levels of cyclindependent kinase 1 (Cdk1), cell division cycle 25C (Cdc25C) and/or Cdc25B proteins, leading to accumulation of Tyrosine15 phosphorylated (inactive) Cdk1. Ectopic expression of Cdc25C conferred partial yet significant protection against WA-mediated G2-M phase cell cycle arrest in MDA-MB-231 cells. The WA-treated MDA-MB-231 and MCF-7 cells were also arrested in mitosis as judged by fluorescence microscopy and analysis of Ser10 phosphorylated histone H3. Mitotic arrest resulting from exposure to WA was accompanied by an increase in the protein level of anaphase promoting complex/cyclosome substrate securin. In conclusion, the results of this study suggest that G2-M phase cell cycle arrest may be an important mechanism in antiproliferative effect of WA against human breast cancer cells.

Case 3

M. Ira Thabrew, M.G Dhrmasiri and L Senaratne [13] Maharasnadhi Quathar

(MRQ) is a polyherbal preparation recommended by Ayurvedic medical practitioners for treatment of arthritic conditions. An investigation has been carried out with rats and human rheumatoid arthritis (RA) patients, to determine the anti-inflammatory and analgesic potential of MRQ. Results obtained demonstrate that MRQ can significantly and dose-dependently inhibit carrageenan-induced rat paw oedema (the inhibition at 3 h was greater than at 1 h after induction of oedema). MRQ could also increase the reaction time of rats in the hot-plate test (by 57% after the first hour of treatment), although it had no effect on the reaction time in the tail-flick test, indicating that MRQ possesses analgesic activity that is probably mediated via a supra-spinal effect. MRQ also exerted a dose-dependent (a) protective effect on heat-induced erythrocyte lysis, and (b) inhibition of 5-lipoxygenase activity.

In RA patients, after 3 months of MRQ treatment, there was a marked improvement in the pain and inflammation experienced by the patients as well as in the mobility of the affected joints. From the overall results obtained, it may be concluded that MRQ possesses significant anti-inflammatory and analgesic activities. Alteration in synthesis of prostaglandins and leukotrienes, membrane stabilization and anti-oxidant activity are some of the possible mechanisms through which MRQ mediates its anti-arthritic effects.

Case 4

Chopra, A. [14] the clinical profile of Indian arthritides is different and Caucasian population based on classification criteria do not suffice. Comparative data from free arth-

ritis camps is presented. Validated versions of HAQ and WOMAC suitable for Indian use were developed and are presented. The maiden Indian WHO COPCORD, an ongoing rural population program in Bhigwan (Pune), has provided statistics on prevalence, incidence risk factors. The Bhigwan model, unlike any other COPCORD provides free clinical services. The Bhigwan longitudinal observational seven year data from RA patients (unpublished) showed that (i) regular DMARD use had lower HAQ scores (better functional ability) (ii) chloroquin was safe (iii) steroids had higher HAQ scores. The HLA DR profile in RA, both from Bhigwan and hospital referrals was remarkably different. We have demonstrated the efficacy and safety of certain standardized Ayurvedic drugs in RA and OA knees through several controlled randomized drug trials; one of these drugs is now marketed worldwide. These trials also showed an unprecedented robust placebo response. A multicentric NMITLI arthritis program, funded by Government of India, has been launched to identify evidence based Ayurvedic medicinal plants and will be coordinated from CRD, Pune. The Bone and Joint Decade (BJD) 2000-2010 India programs also run from CRD has launched several national research programs.

Case 5

Daniel et al [15] Forty-three seropositive RA patients by American College of Rheumatology (ACR) criteria with disease duration of less than 7 years were assigned to the following treatment groups: MTX plus Ayurvedic placebo (n = 14), Ayurveda plus MTX placebo (n = 12), or Ayurveda plus MTX (n = 17). Outcomes included the Dis-

ease Activity Score (DAS28-CRP), ACR20/50/70, and Health Assessment Questionnaire - Disability Index. All measures were obtained every 12 weeks for 36 weeks. Analyses included descriptive statistics, analysis of variance, χ^2 , or Student *t* test. The unique features of this study included the development of placebos for each Ayurvedic pharmacological dosage form and individualization of Ayurvedic therapy.

Results: All groups were comparable at baseline in demographics and disease characteristics. There were no statistically significant differences among the 3 groups on the efficacy measures. ACR20 results were MTX 86%, Ayurveda 100%, and combination 82%, and DAS28-CRP response were MTX -2.4, Ayurveda -1.7, and combination -2.4. Differences in adverse events among groups were also not statistically significant, although the MTX groups experienced more adverse event (MTX 174, Ayurveda 112, combination 176). No deaths occurred.

Conclusions: In this first-ever, double-blind, randomized, placebo-controlled pilot study comparing Ayurveda, MTX, and their combination, all 3 treatments were approximately equivalent in efficacy, within the limits of a pilot study. Adverse events were numerically fewer in the Ayurveda-only group. This study demonstrates that double-blind, placebo-controlled, randomized studies are possible when testing individualized classic Ayurvedic versus allopathic treatment in ways acceptable to western standards and to Ayurvedic physicians. It also justifies the need for larger studies.

Case 6

Kumar et al [16] *Arogyavardhini vati* significantly decreased serum cholesterol, trig-

lyceride, LDL, and C-reactive protein (CRP) and significantly increased serum HDL in a dose-dependent manner. Decreased MDA and increased GSH levels in liver were observed at all doses of *Arogyavardhini vati* (50, 100, 200 mg/kg) and fenofibrate-treated groups when compared with Triton-treated group. Atherogenic Index (AI) level was significantly decreased in fenofibrate and *Arogyavardhini vati* (200 mg/kg) treated rats when compared with normal control. *Arogyavardhini vati*, a traditionally used Ayurvedic medicine may be a useful therapy for hypercholesterolemia through reducing oxidative stress (decreasing MDA and increasing GSH) and lipid levels.

Benefits of Traditional Medicine

Industrialization and urbanization has displaced indigenous medical systems in many areas by the western medicine leaving many without any health care. Traditional medicinal knowledge is rapidly disappearing owing to cultural change and declining access in both urban and rural areas to sources of natural medicinal products. Most villages in the world are no longer surrounded by the natural habitat that formerly served as a medicine cupboard. The bodies of folk knowledge that have accumulated and been honed for thousands of years are disappearing at an alarming rate. In some cases this loss may actually confer net health benefits; but modern society will never know what effective medicinal treatments are being lost.

The procurement of plant and animal species needed by indigenous medical practitioners currently requires long distance travel. This affects not only the operational costs of providing traditional medical ser-

vices particularly in urban areas but also the forms of herbal medicine prepared. For example, freshly prepared herbal medicines are increasingly being replaced by different concoctions, tinctures and powdered forms even in rural areas in order that they can be stored for longer periods without losing their potency or getting spoiled. Despite the importance of TM for public health in many parts of the world like the current spasm of plant and animal species extinction as remarked by the practitioners of ethnomedicine (especially herbalists and cult healers) appear to be at a greater risk of extinction than even forests and other biomes. Knowledge of the use of plants is disappearing faster than the plants themselves. The destruction of tropical forests in many parts of the tropical region leads to increasing disappearance of native peoples who have been living in these areas and who have accumulated a compendium of folk knowledge about the usefulness of plants for curing various diseases [17].

Employment

Ayurveda uses a wide range of natural products for treating diseases from plant products to minerals and marine. These natural products are available to the drug manufacturing units from forests or agriculturally grown by farmers. Traditional medicine system helps in maintaining this balance of employment. Over three-quarters of the world population relies mainly on plants and plants extracts for health care. It is estimated that world market for plant derived drugs may account for about Rs.2, 00,000 crores and presently Indian contribution is less than Rs. 2000 crores. Indian export of raw drugs has steadily grown at 26% to Rs.165 crores in 1994-

95 from Rs.130 crores in 1991- 92. The annual production of medicinal and aromatic plant's raw material is worth about Rs.200crores. This is likely to touch US \$1150 by the year 2000 and US \$5 trillion by 2050. Of the 2, 50,000 higher plant species on earth, more than 80,000 are medicinal. India is one of the world's 12 biodiversity centers with the presence of over 45000 different plant species. India's diversity is unmatched due to the presence of 16 different agro-climatic Zones, 10 vegetation zones, 25 biotic provinces and 426 biomes (habitats of specific species) [18]. If proper actions are taken for its conservation then both traditional medicine and agriculture will be flourished.

Singh and Swanson [19] in Development of Supply Chains for Medicinal Plants describes that a number of medicinal plants possess the ability to grow in very poor soils and under low rainfall and moisture conditions, thereby assisting in the natural regeneration of these crops. Many species are shade tolerant while others are climbers, trees, shrubs and herbs that can be grown in different land-use and cropping systems. The entry of these MAPs (medicinal and aromatic plants) into the world food and drug market as environmentally friendly (including organic and certified) botanical products is emerging as an important new opportunity for the small-farm community. Medicinal plants provide the natural raw material for most oral and non-oral traditional medications. These medicinal plant applications have the potential to create a large increase in the number of rural jobs. Medical Tourism will be improved as we see that more and more of the patients all

over of the globe turn towards traditional medicine for their chronic illnesses for which they doesn't want to carry on with allopathy. Some diseases require a long treatment, in such cases Ayurveda comes as a hope. As Ayurveda is a medical system of India, so for its treatment people come to India for treatment from all over the world.

Ayurvastra: Healthy Textile Industry

Ayurvastra is a branch of India's 5000 years old Medicine system. Ayur means life and Vastra means cloth. Such a cloth is free from synthetic dye. It is a promising field in textile industry which will not only protect environment but provide health and employment too. Ayurvastra can really cure diabetes, skin infections, eczema, psoriasis, hypertension and high blood pressure, asthma, arthritis, rheumatism, and even some forms of cancer. Kerala has a worldwide reputation as being a center for Ayurveda and Ayurvedic treatment. The State of Kerala Coir Department reported on a six month clinical trial initiated by the Ministry of Health at the Government Ayurveda College in Thiruvananthapuram India on patients suffering from rheumatism, allergy, hypertension, diabetes, psoriasis and other skin ailments [20].

Health

With the change in pattern of our living style more diseases are affecting our life. Because of this the diseases like diabetes, hypertension, cancer etc are becoming epidemic. It's high time for us to take a effective steps otherwise there will be no healthy person left. All of us would have to start a day with a pill and go to bed at night with a pill. Ayurveda is based on ancient cultures which be-

lieve in making a person healthy where its main objective is to cure the diseased and maintain the health of the healthy person. No other system lays equal stress on diseased and healthy person. Healthy person produce healthy offspring and this is the motive of Ayurveda. In fact slowly there will be a healthy society which is actually the main aim of every nation. A nation can progress only when its citizens are healthy. It was Ayurveda (homeopathy) before the introduction of Allopathy which was taking care of the people of India. The so called Vaidyas of the Ancient India since the time of Lord Rama through the time of King Ashoka till now are serving the people. With the Principals of Ayurveda, its medicine and dietary restrictions according to seasons one can overcome the life style disorders and can maintain a good harmony with the changing environment and seasons for which Ayurveda has clearly mentioned different AAHAAR –VIHAAR.

Environment

Who doesn't want to dwell in an Environment which is free from all sorts of Pollution? Today, most of the people complaint about the polluted environment of our metropolitan cities and it is a major issue of our time. Glaciers are melting down at a high rate, many important and precious plant species are getting extinct because of the rising temperature and more deforestation is leading to ecological loss. Due to uncontrolled hunting and human interference into the Jungles many animal, insects, birds etc species are endangered now. Marine Life is also disturbed. Ayurveda can play an essential role in maintaining environment. Ayur-

veda requires plants, animals, marine and everything which is natural and in Ayurveda everything in nature is a medicine of some or the other disease the only thing required is the knowledge about it. With such a good concept in Ayurveda, it shows its kindness towards nature as it respects every part of nature. If Ayurvedic concepts are followed and stress is taken to grow more of the plants, wildlife and marine life then environmental problems will be resolved. As for example in case of Soil pollution if following is taken in to consideration;-

Biopesticides are prepared using traditional medical technology, and they have many advantages [21] such as low cost preparations and less investment; they do not cause any form of pollution; neither high temperatures nor corrosive solvents are required during preparation; the technology for the preparation of kashayam, thailam and arishtam is widely known in India; they have a good shelf-life; the preparation process does not need any expensive equipment nor does it involve complicated technology. Further growing medicinal crops also protects soil from decreased soil fertility, nutrient leaching and others if crops and medicinal plants are grown interchangeably. Some medicinal plants even have the ability to grow in hot and drought conditions.

DISCUSSION

It is clear from the above that the traditional medicine system of India 'Ayurveda' is important not only for the good health of its citizens but also for the environment and employment. Should such an age old system of treatment be left behind as other part of the world does not believe in this system? Is such an important decision

should be left on those who does not know about it? This is the only system worldwide having the written Manuscripts. Among the cases considered in this paper one can get inspired by many promising examples of traditional system of medicine which is playing an important role in curing and prevention of diseases.

Every system of Medicine has its own limitations and so in case of Allopathy and Ayurveda. Allopathy plays a major role in emergency treatment while the Ayurveda is good in the treatment of chronic diseases. Ayurveda faced pressure due to which it came under such an extent that it could have got extinct but still it revived back because of its great heritage of curing disease and making healthy people to maintain their health. A better advanced National Policy could help this system to cure more diseases. Health budget allocation is only 3.37% for AYUSH which includes Ayurveda, Yoga, Unani, Sidhha, and Homeopathy where total expenditure on Department of Health and Family welfare is 89.14%.

India because of its rich traditional knowledge could be the hub to alternative and complimentary system worldwide. The system should not only be supported because of its old age system helping the mankind but should also be given proper attention because it's the only system which is providing the desired results in many areas of medical sciences.

Acknowledgement

The Authors express profound gratitude and deep regards to Dr.H.Tiwari MD (Gy.A.U.) Associate Proffesor Rasashastra, JIAR (Jammu Institute of Ayurveda and Re-

search), Dr. Madhav Govind, Associate Professor and Dr. Saradindu Bhaduri, Assistant Professor, Centre for studies in science Policy JNU, New Delhi, for their kind Support, exemplary guidance, monitoring and constant encouragement throughout the course of this Paper.

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