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Role of nonconventional remedies in rural India

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Abstract
India, a country where eclectic health system is practiced is experiencing a rural health crisis, one that has uncomfortable echoes of the past as well as the present. Indian government is said to be on its toes to provide good health care system. Its modus operandi has provided some comfort to the rural people but the functioning public health-care system they crave for still remains elusive. This review illustrates and explores the challenges which the rural populace has to face in order to maintain a healthy living and the significant role of the 'much questioned' practice of unconventional remedies in maintaining a sound health.

Keywords: India, rural, unconventional, alternative, traditional, side-effects.

Introduction
Bleak Scenario of Rural India
India at a Glance
The demographics of India are remarkably diverse. Currently, India is the second largest populated country in the world (surpassed only by China) and is estimated to have about 1.17 billion people [1], which comprises of more than one-sixth of the world population. By 2050, it is estimated that India would outrank every other country in terms of population with a whopping population of about 1.6 billion people. [2] As per the 2001 census, 72.2% of the population [3] lives in about 638,000 villages [4] and the remaining 27.8% [3] lives in more than 5,100 towns and over 380 urban agglomerations.[5] There are various ethnic groups in India. It has been estimated that only the continent of Africa exceeds the linguistic, genetic and cultural diversity of India. About, 72% of the population is Indo-Aryan, 25% Dravidian, and 3% Mongoloid and others. Each of these groups can be further subdivided using various permutation and combination of language, religion, and, very often, caste. About, 16% of the total population is Scheduled caste (commonly known as 'Dalit') and about 8% of the total population belongs to one of 461 indigenous groups (often called Scheduled Tribes for legal purposes, although the term 'Adivasi' is commonly used).[6] Throughout the history of India, religion has been an important part of the country's culture. India has given birth to four of the world's major religious traditions; namely Hinduism, Jainism, Buddhism and Sikhism.[7]

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Table 1: Census 2001: Religious Data Composition [8]

Religious Composition	Population*	Percentage
Hindus	827,578,868	80.5%
Muslims	138,188,240	13.4%
Christians	24,080,016	2.3%
Sikhs	19,215,730	1.9%
Buddhists	7,955,207	0.8%
Jains	4,225,053	0.4%
Other Religions & Persuasions	6,639,626	0.6%
Religion not stated	727,588	0.1%
Total	**1,028,610,328**	**100.0%**

* Excludes figures of Paomata, Mao Maram and Purul sub-districts of Senapati district of Manipur state.

Every coin has two faces

One is ought to get mesmerized by its multifariousness but one should not overlook the dark side of the picture. It has been more than 60 years of independence but still, India finds her soul in her villages. Most of the rural populace have to subsist with very poor or no infrastructure like roads, water supply, transport, healthcare, education system, communication network, clean drinking water etc., further opening the doorway to poverty. [9]-[11] According to India's first Social Development Report, about 26% of the Indian population lies below poverty line (193 million in rural and 67 million in urban areas). We find that it is concentrated to certain groups and geographical regions. Although there is a decline in the poverty level, but huge disparity among the various social classes still persists (percentage of poor- Scheduled Tribes 42%, Scheduled Castes 36% and Other Backward Classes 21%).[9] It has been found out that about three-fifth of Indian population lack access to sanitation, one-third do not have clean water, approximately one-fifth lack access to health care of any kind, and one-fifth do not consume enough dietary calories and proteins.[12]

Even in the face of these shortcomings, we find that there is a surge in the Indian economy. [12] [13] Along with this, we also see a rise in the demographic development which has led to a shift in India from diseases caused by poverty towards chronic, non-communicable, lifestyle-related diseases. Nevertheless, infectious diseases have yet not been out-weighted and India still experiences high rates of infectious (communicable) as well as chronic (non-communicable) diseases. [14] The government has to confront heavy loss in national income due to heart disease, stroke, diabetes mellitus etc. which was estimated to be $9 billion for the year 2005 and can rise to $54 billion by the year 2015, accounting for a loss of 1.27% in the gross domestic product. [12]

India is developing fast and faces many challenges to provide basic health care facilities to its large population. [12] One of the most dramatic features of health care in India is its heterogeneity, ranging from patients treated at private hospitals, who receive the best possible evidence-based care, to patients who have limited or even no access to medical care. [13] India not only has the highest number of poor in the world but also highest proportion of out-of-pocket (OOP) expenses which varies from 20% to 80% of total health expenditures. [12][15] India's health system is funded both by public and private sectors. The private sector has major of its funding in the urban areas and the rural

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people have to largely rely on public sector which are generally not well equipped and are far from their reach. Only 5.4% of the patients are brought by ambulance and the rest make use of some sort of public vehicle or private if they can afford to avail it. [12] Moreover these OOP payments put a lot of pressure on the families as they have to mobilize their resources at the time when they are most vulnerable. [15] As, a result they fall into 'medical poverty trap'. Approximately, 17% of the rural population is debarred from the medical facilities due to their piteous financial status. [12]The high user fees and poor quality of health care in the unregulated private sector which results in unnecessary treatments and over-prescriptions compound to their pity situation. [12][15] They delay their check-up and when situations become grave they avail care from government health centers where they are taken care of for free. But, till this time there is no or very little hope for the patient to survive. These ailments could have been easily cured at their early stages or atleast looked after in some local health centers. It is simply because they cannot afford. When 'money will talk,' it is only then can we have a healthy walk. We literally have to buy our health. Most of the health care budgetary in India is accounted by pharmaceutical costs, in which drugs account for 30-50% of the medical costs. Thus, these poor people are turned to street-corner pharmaceutical vendors who are usually unqualified, which leads to irrational and dangerous use of drugs. [12]

Not so healthy, health status

Every year in India, complexity during childbirth takes life of about 100,000 women; tuberculosis puts to death to about 364,000 people; and pneumonia, diseases related to diarrhea, and other infections kill more than 2 million children. But heart disease tops the chart, with a kill of almost 3,000,000 people in India every year. It has spread its clutches not only to urban areas but also to the rural areas. [16] According, to a vascular risk factor study in a rural community in Andhra Pradesh (which had mean income per household of about $1.60 per day) it was found out that there was high ubiquity of cardiovascular risk factors such as smoking (20%), hypertension (20%), diabetes mellitus (3.7%), high total cholesterol or high low-density lipoprotein cholesterol (12%), and obesity (4.4%). People also consumed tobacco at considerable rates. [12]

After years of struggling to bring the health of the people to an optimum level, the planners of India came up with a comprehensive mission-oriented approach to revamp the rural healthcare delivery system, which was aptly named National Rural Health Mission (NRHM). This mission may be considered as a paradigm shift in the way healthcare delivery is to be executed. It was introduced on 12 April, 2005, with a time limit of seven years. Being very systematic and professional, it got a good momentum and its impact is visible in the form of renovation of health infrastructures.[17] NRHM has come with many effective strategies such as: Skilled Birth Attendant and Emergency Obstetric Care, Home Based Newborn Care, Sick newborn care units, Integrated Management of Neonatal and Childhood Illnesses, Janani Suraksha Yojana (keeps a check on maternal and neonatal mortality), ASHA (voluntary workers) strengthening Immunization services, setting up Nutritional rehabilitation centres etc. for the welfare of the communities. [17][18] The figures are also quite promising. Though there has been hassle free utilization of the available funds, yet one can find many morasses that have impeded the progress. [17] [Table 2]

The Primary Health Cares have been proven quite effective as a means to tackle the large rural population. There have been huge infrastructural changes; improvement in community level health workers and financial support, but this does not seem to be enough. [18] It was found out that there has been unfair distribution of supplies, discrepancy in the availability of skilled attentions at birth, and inadequate staffing relative to patient load of rural population at primary health centres. [19] More emphasis should be give to the areas like community participation, district level health planning, data for action, inter-sectoral coordination, political commitment, public private partnership, accountability, and the improving health work force and need immediate attention, to strengthen the PHC system in the country. [18]

From Table 2, we find that the Government is trying to immunize the children but poor routine immunization coverage is still a concern in India and the immunization coverage rates also have reached a plateau. Now, the nation

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is turning towards a new community health worker (CHW) plan to increase its effectiveness in immunizing the children. [20]

Revised National Tuberculosis Control Programme (RNTCP) under NRHM is also successful, but to a degree (Success rate of new smear positive patients – 87% [30]). An analysis showed that people belonging to scheduled caste/scheduled tribes, poor economic status, residing in rural area and illiterate are more likely to reported TB than their respective counterparts. [21] After pilot testing from 1993-1996, Directly Observed Treatment, Short Course (DOTS) strategy was launched formally as Revised National TB Control programme in India in 1997. [22] According to a finding, the TB doctors are working in a dilemma to find a balance between meeting the obligations of the DOTS programme and meeting the needs and expectations of the patients. There is also a gulf between the required and actual number of staff, and also the lack of qualified staff in rural areas complicate recruitments. [23] The shortage of health workers is a worldwide crisis. [24] In the Eleventh Five Year Plan (2007—2012), India's Planning Commission also acknowledged the severe shortages in the health care system (6% to 30% posts of doctors remain vacant and random checks showed that from 29% to 67% doctors were absent). [13] This is also the major hurdle that impedes the NRHM in the remote tribal areas (30—40% of the fieldworkers' posts are vacant and posts for medical officers also remain unfilled). [11] The same also can be concluded from the statistics given in Table 2.

Another programme that has tasted some success is the Janani Suraksha Yojana (JSY).With the goal of decreasing the numbers of maternal and neonatal deaths, it offers cash incentives to women to give birth in hospitals rather than small clinics that are deplorably equipped to deliver babies. [25] Giving birth in a rural hospital, few of which have blood banks or surgeons can prove to be fatal. These hospitals are also overcrowded. Lately, a woman named Kiran, a resident of rural Uttar Pradesh in north India died because she could not avail the facility of blood transfusion as there was no blood. India's maternal mortality ratio is ten times that of China and three in four of these deaths could be prevented if women had access to appropriate health care. [26] The high fertility (Total fertility-2.76, an estimate for 2005-2010 [27]), also costs serious damage to women's health (sometimes even life). [28] Death of a woman after giving birth to their child is not uncommon in rural India. [29] There are many factors which lead to this, such as: the lack of care available from rural government facilities and staff and the preference for delivering at home with the aid of local practitioners; unawareness, lack of education, unpaved roads, and lack of availability of transport at critical time etc. [28] [29] Also, one of the chief reason for maternal mortality is the lack of obstetricians to perform cesarean delivery and other skills required for emergency obstetric care (EmOC). An estimated need of 6000 doctors was projected by the Government of India to provide 24-hour comprehensive EmOC in the 2000 rural first referral units, stated to become operational by 2010 under the current maternal health program. [24] Though the incentives given by the Government of India (GOI) has brought some relief (that can be seen in the form of decreasing rate of maternal mortality), yet the odds for the poorest and least educated women to receive the JSY payments seems to be low. [25]

Table 2: National Rural Health Mission, Status as on 31 March, 2010[30]

S.No.	Parameters		Total	High Focus-Non NE	High Focus-NE	Non High Focus Large	Non High Focus Small &UT
1.	Rural Population(in millions)		742.491	381.956	32.771	325.856	1.907
2.	No. of Villages		638,588	397,164	42,250	198,229	945
3.	Number of Rogi	District Hospitals (DH)	571	299	76	183	13

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	Kalyan Samitis registered	CHCs(Community Health Centers)	4235	1941	227	2052	15
		PHCs(Primary Health Cares)	16909	5184	1378	10282	65
4.	No. of ASHA (Accredited Social Health Activists) recruited.		794,768	466,755	53,189	271,914	2,910
5.	No. of ASHA in position with drug kits.		552,954	357,638	49,964	142,950	2,402
6.	Number of Village Health & Sanitation Committee (VHSC) Constituted		494,085	281,977	42,679	168,945	484
7.	No. of Sub Centers (SC's) (As per RHS* 2008)		146,036	70.085	7,494	68,137	320
8.	Total APHCs, PHCs, CHCs & other Sub District facilities functional as 24X7 basis.		15,738	6,067	877	8,668	126
9.	No. of PHCs (as per RHS* 2008)		23,458	11,376	1,378	10,625	79
10.	No. of PHCs without a doctor (RHS* 2008)		2,533	2,136	74	323	0
11.	No. of CHCs (as per RHS* 2008)		4,276	1,978	234	2,049	15
12.	No. of CHCs	Physical upgradation started	1958	864	208	873	13
		Physical upgradation completed	1023	292	191	533	7
13.	Total no. of specialists at CHCs	Required (RHS* 2008)	17,104	7,812	936	8,196	60
		Sanctioned (RHS* 2008)	8,376	5,098	49	3,207	22
		In Position (RHS* 2008)	4,279	1,952	384	1,919	24
14.	Total no. of Staff Nurses	Required at CHC	16,460	2,699	1,806	11,888	67
		Sanctioned at CHC	14,692	709	64	13.878	41
		In Position at CHC at start of NRHM 31/3/2005	6,414	1,222	184	4,970	38
		Appointed on contract under NRHM at CHCs	7,097	2,079	2,264	2,653	101
		Appointed on contract as on date	26,197	10,994	2,753	12,284	166

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15.	Number of General Duty Medical Doctors (GDMOs) in position on contract at various level as on date		8,771	4,293	1,293	2,858	327
16.	Paramedics in position on contract under NRHM as on date		1,7471	1,3982	1,478	1,553	458
17.	Number of District Hospitals (DH)		588	308	74	185	21
18.	Total Number of centres operational as First Referral Units (FRUs) as on date	DH	520	262	60	179	19
		SDH (Sub Divisional Hospital)	562	83	6	457	16
		CHC and others level	1,197	352	40	793	12
		Total	2,279	697	106	1,429	47
19.	No. of children vaccinated (in '000s)	BCG (2008-09)	25,288	13,847	955	10,244	242
		DPT3 (2008-09)	23,249	12,552	850	9,669	178
		Measles(2008-09)	22,919	12,744	747	7,605	268
20.	Full immunization of children (in '000s)	2007-08	22,582	11,820	813	9,626	323
		2008-09	21,891	11,998	740	8,995	158
		Since April '09	20,600	11,818	723	7,765	293
21.	No. of Institutional Deliveries (in millions)	2007-08	14.371	6.412	0.442	7.291	0.226
		2008-09	14.580	6.382	0.475	7.384	0.339
		2009-10	14.972	7.677	0.482	6.564	0.249
22.	No. of beneficiaries of JSY (in millions)	2007-08	7.119	4.575	0.371	2.160	0.012
		2008-09	8.542	5.927	0.410	2.174	0.030
		2009-10	9.229	6.870	0.438	1.891	0.029
23.	Number of Districts where Mobile Medical Unit (MMU) are working		363	137	87	134	5
24.	Number where Ayurveda Yoga Unani Siddha Homeopathy (AYUSH) facilities is available as on	DH	291	122	33	126	10
		CHC	1,644	610	77	943	14
		other than CHC at or above block level but below district level	868	488	10	350	20

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	date	PHC	6,479	3,357	163	2,899	60
		other health facilities above SC but below block level	2,629	297	128	2,079	125
		Total	11,904	4,874	404	6,397	229
25.	Number of Contractual appointment under AYUSH	Doctors	7,702	3,649	481	3,517	55
		Paramedical Staff	3,226	906	111	2,186	23
26.	Amount released by GOI under items subsumed with NRHM.	Infrastructure maintenance (Rs. in billions)2009-10	28.598	12.980	1.781	13.419	.418
		Total state wise NRHM fund (Rs. in billions)	428.872	209.931	42.344	171.389	5.208
27.	Amounts of expenditure done by States under items subsumed within NRHM	Infrastructure maintenance (Rs. in billions)2009-10	26.561	11.601	1.490	13.322	.147
		Total state wise NRHM expenditure (Rs. in billions)	381.749	187.365	35.326	155.158	3.901
28.	Leprosy prevalence rate/10,000		.77	.93	.35	.70	.73
29.	Deaths due to Malaria	2007	1,311	341	581	389	0
		2008	1,055	376	349	330	0
		2009	847	182	444	220	1
30.	Deaths due to Kala azar	2007	203	193	0	10	0
		2008	146	142	1	3	0
		2009	71	71	0	0	0
31.	Deaths due to suspected Japanese Encephalitis.	2007	995	809	134	52	0
		2008	684	582	99	3	0
		2009	765	651	94	20	0
32.	Deaths due to Dengue	2007	69	14	1	53	1
		2008	80	6	0	72	2
		2009	81	23	0	55	3
33.	No. of confirmed	2007	1,864	96	0	1,698	32

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	cases of Chikungunya	2008	2,461	21	0	2,426	14
		2009	6,271	76	0	6,178	17
34.	Integrated Disease Surveillance Programme (IDSP)	Functional Units at number of districts	618	298	83	217	20
		No. of person trained	2,057	670	337	974	76

[*RHS: - Rapid Household Survey.
HIGH FOCUS NON NE: Bihar, Chhattisgarh, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, Uttarakhand.
HIGH FOCUS – NE: Arunachal Pradesh, Assam, Meghalaya, Mizoram, Manipur, Nagaland, Tripura, Sikkim.
NON HIGH FOCUS – Large: Pradesh, Gujarat, Goa, Haryana, Karnataka, Kerala Maharashtra, Punjab, Tamil Nadu, West Bengal.
NON HIGH FOCUS - Small & UT: Andaman & Nicobar Island, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Delhi, Lakshdweep, Puducherry.
Source: National Rural Health Mission, Ministry of Health & Family Welfare,
Government of India]

Humans- 'The enemy' of humans

The unregulated private sector seems to have much of the control of the Indian health system, accounting for greater than 80% of domestic health expenditures. As it is the ratio of trained doctors- to- patient is low, and on top of it the unqualified 'quack' practitioner have aggravated the situation. The outcome is the practice of unsafe medical injections. The statistics from the NACO (National AIDS Control Organisation) supported antiretroviral clinic reveals that for approximately 3% of patients the only identifiable source of HIV infection is through unsafe medical injection. Also, in a survey of six months it was found out that about 35% of the citizens of a rural village were administered these unsafe injections by the quacks.[31] In 2009, police and health officials discovered warehouses in the state of Gujarat, which were filled with recycled medical waste to be sold on the black market. The needles and syringes which were to be disposed off were collected by ragpickers and were allegedly cleaned, repacked and resold to private medical clinics. The health officials found out that not only unlicensed medical practitioners but also the fully trained doctors administered injections with recycled equipment. [32]

Another major issue is that of the Maoist (Naxalites).The ongoing conflict between India's Maoist rebels and the government across states has forced people to displace in areas which are generally difficult to access. Such conflicts have a catastrophic effect on the physical and mental health of people in affected areas, which are largely poor and rural. The refugee camps are overcrowded and hence the probability of the spreading of any infectious disease is very high. These areas are stricken by malaria, diarrhea, skin diseases, malnutrition etc. There is also a scarcity of clean water. Even NGOs' which try to fill in the health care vacuum in these areas are denied access due to security reasons. No matter who wins, the rural poor are the ultimate sufferers. [33]

The Alternative

Where do they go?

The Indian rural populace is still not getting the basic quality of primary health care as stated in the Alma- Ata conference attended by governments of 134 countries and many voluntary organizations in 1978 (in the former USSR). It's been more than thirty years and the situation still remains grim. [34] Amidst all these the traditional

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medicinal practices may prove to be life savior.[35] Though culture has a role in health care seeking behavior [36] but it is not the sole reason for the rural people to recourse to these traditional practices. [35] The failure of the government to provide adequate healthcare to these people is the prime reason for there adherence to the traditional medical system. Even after the booming of biomedicine, the expected downfall of traditional medicine did not occur, especially in rural areas and small town. [35] Studies depict that reasons such as "no side-effect" [35], "low cost treatment" and "easy accessibility "are the most common ones. [37] It is also that they are left with no choice as most of the medical physicians are concentrated only in private practice, that too in rich urban areas. [37] Even the fresh graduate doctors get themselves so much accustomed to the urban milieu that they do not care for broad community needs. Such attitude is attributable to the focus on biomedicine without consideration of the socioeconomic context of the healthcare. [38]

The villagers of India, especially the farmers who are busy throughout the year are generally unaware about the medical facilities until they are sick. They are entirely dependent on the local practitioners. In point of fact, when they approach the doctors, they are only interested in getting themselves cured and not the practice that the doctor follows. This has led to quackery. [39] The 'unqualified doctors' are a threat to the reputation of both biomedical and traditional practitioners. The dire need of 'qualified doctors' are filled in by these so called doctors. It has led to costly and dangerous treatments to patients. [35] According to a survey in the rural areas of Lucknow district in Uttar Pradesh, India, only 47.6% of the rural private medical practitioners (PMPs) had a valid qualification (Table 3). Among these, 68.5% restricted themselves to a single system of medicine and the rest practiced a combination of two or more systems. [40] All the more this type of mixed practices is prevalent amongst the qualified doctors also. However, clause 1.1.3 of Medical Council of India (MCI) prohibits such practices. Thus, reorientation programs should be conducted regarding various MCI rules and regulations and thereby making them aware of it. [41]

Cultural Vista

India is rich in various traditions, which are characteristics to different race, religion and tribe. [42] And these traditional systems coexist with different medical systems. [43} Thus, India homes various medical system namely Ayurveda, yoga, naturopathy, Unani, Siddha, homoeopathy and modern medicine. [37] All these medical systems have their roots in ancient history. [44]

From Mesopotamia and then ancient Greece, medicine advanced as the understanding of the human body and embodied the form of modern medicine of today. [45] Particularly, modern medicine got a boost during the period of renaissance. [46] Ayurveda- 'the scripture of longevity' [47] is a Sanskrit word formed by the combination of two Sanskrit words 'ayu' meaning 'life' and 'veda' meaning 'knowledge'.[48] The first treatises in Ayurveda- the 'Samhitas' could be traced only as far as 600BC but its unscripted practice appear to antedate its first writing by thee millennia. [44] These Samhitas described the eight limbed science of longevity which included medicine; surgery; ENT; pediatrics; treatment of poisoning; illness inflicted by demons (mental disease); healthy maintenance, and aphrodisiacs restring youth. Even the compiled treatises of Hippocrates, the "father of medicine", borrowed much of his material medica from the Ayurvedic practitioners. The influence of Ayurveda in the Greek philosophy and in the Arab medicine has been approved by many historians and antiquarians. [44]

Table 3: Qualifications of the PMPs [40]

Qualifications	Number of PMPs	Percentage.
MBBS	22	5.7
BAMS	80 (including 6MD)	20.6

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BHMS	42 (including 3MD)	10.8
BUMS	41	10.6
Essentially unqualified medically(D Pharm, RMP, BEMS, BIMS, BMS, GAMS, GHMS)	146	37.6
No medical qualification.	57	14.7
Total	388	100

MD: Doctor of Medicine.
MBBS: Bachelor of Medicine & Bachelor of Surgery.
BAMS: Bachelor of Ayurvedic Medical Sciences.
BHMS: Bachelor of Homeopathic Medical Sciences.
BUMS: Bachelor of Unani Medical Sciences.
D Pharm: Diploma in Pharmacy.
RMP: Registered Medical Practitioner.
BEMS: Bachelor of Electro homeopathic Medical Sciences.
BIMS: Bachelor of Indian Medical Sciences.
BMS: Bachelor of Medical Science.
GAMS: Graduate of Ayurvedic Medical Sciences.
GHMS: Graduate of Homeopathic Medical Science.

Homeopathy and the Unani-Tibb are known to stem from Greece from the time of Hippocrates. However, the origin of present practice of homeopathy can be accredited to the German physician, Dr. Samuel Hahnemann (1755-1843). 'Homosis' meaning similar and 'pathos' meaning suffering form the Greek word Homoeopathy. It simply means that an ill person can be treated using a substance that can produce, in a healthy person, symptoms similar to those of the illness. [49] The Unani system of medicine moved eastward from Persia to the Indian subcontinent with the spread of Islamic religion and political influence. [50] Avicenna's (Abu Ali al-Hussein ibn Abdallah ibn sinha) [44] 'The Canon of Medicine (Al-Qanun fi-Tibb)' has been the most authoritative text in South Asian Unani medicine. [50] The basic principle of the Unani system of medicine is parallel to Ayurveda and it believes that every person has a unique humor constitution, which represents his healthy state. Even Siddha is the variant form of Ayurveda with a specialization in alchemy. [49] Home remedies are also a form of unconventional medicine which are time-tested and of proven efficacy. Mothers commonly treat the injuries of their children using such home remedies. [51]

These traditional medicinal systems differ from the modern medicine from the fact that the knowledge base of many of the above systems, is based on years of experience, observations, empiricism and intuition and has been handed down to generations both through word of mouth and treatises. These systems make use of various curative approaches that include diet, herbs, metals, minerals, precious stones and their combinations as well as non-drug therapies. [52] Plants have been the main therapeutic source in the traditional practices. [49] India is said to be the gold-mine of such therapeutic plants [53] and the people of India especially from rural areas have appropriately used them to treat many diseases. [54] Even today, plants play a prominent role in drug discovery which generally depends on the folk information available from the local practitioners. [55] These indigenous groups- the tribal which make up about 91% of the rural population [56] have profound knowledge of such traditional folk medicines. [55][43] The local beliefs and practices did act as a hurdle in the acceptance of modern medicine but now they seem to welcome it with glad hands. [56] But, extinction awaits these practices. This traditional knowledge is fast diminishing due to modernization and the tendency to discard their traditional lifestyle. [57] Today's youth is reluctant towards such

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practices and hence this precious knowledge dies-off with the demise the practitioners. [55] The unconventional uses of plants are further declining due to scarcity of species, their exploitation etc. Thus there is a dire need of the collection and preservation of the ethnobotanical information among the diverse ethnic communities before the traditional culture completely dies out. [57]

So, to preserve this rich cultural heritage the Government of India established the department of AYUSH (Ayurveda, Siddha, Unani and Homeopathy) which is looked after by the Ministry of Health and Family Welfare. [49] These various medicinal systems have separate governing councils and infrastructure for training, services; medicine manufacturing and research (see **Table 4.**). [58] It is widely known that there are over half a million "registered practitioners" who practice traditional medicine, provide the backbone of health care in rural India [59] and the government is also making efforts to integrate the AYUSH systems in to the national health-care delivery [58], including the NRHM (see **Table 2**.).

Table 4: Summary of infrastructure facilities under Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) as on 1.4.2007 [60]

Sl No	Facilities	Ayurveda	Unani	Siddha	Yoga	Naturopathy	Homoeopathy	Amchi	Total
1	Hospitals	2398	268	281	8	18	230	1	3204
2	Beds	42963	4489	2401	135	722	10851	22	61583
3	Dispensaries	13914	1010	464	71	56	5836	86	21437
4	Registered-Practioners	453661	46558	6381		888	217850		725338
	(i)Institutionally Qualified	324242	23982	2926		839	154240		506229
	(ii) Non Institutionally Qualified	129419	22576	3455		49	63610		219109
5	(i) AYUSH Colleges(UG &PG)	242	40	8		10	185		485
	(ii) Admission Capacity (UG& PG)	12216	1817	460		385	14509		29387
6	(i) Colleges (UG)	240	39	7		10	183		479
	(ii) Admission	11225	1750	350		385	13425		27135

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	Capacity(UG)								
7	(i) Colleges (PG)	62	7	3			33		105
	(ii) Admission Capacity (PG)	991	67	110			1084		2252
8	Exclusive PG Colleges	2	1	1			2		6
	Admission Capacity (Exclusive PG)	40	28	30			99		197
9	Manufacturing Units	7621	321	325			628		8895

[Total Figures of hospitals and beds and dispensaries includes one Hospital with 22 Beds and 86 Dispensaries of Amchi system respectively. Source: Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy (AYUSH), Ministry of Health & Family Welfare, Government of India, Red Cross Building, Red Cross Road, New Delhi-110001]

Medicine or Poison

Thousands in our country do not trust allopathic medicine in the belief that it gives quick relief, but that it acts like a slow poison on the organs. [61] It is also expressed in the original Greek term for drug,'pharmakon' which classically meant: remedy, poison, or magical charm. [62] These beliefs stem from the fact that the allopathic medicines provide poor results for various diseases such as allergies, arthritis, hyperacidity, digestive problems and so on. [63] The ever-increasing number of drugs on the market is a welcome testament to medical progress but with this we also have to face the problem of adverse side effects which seems to be inevitable. [64] The side effects of drugs can manifest in a number of ways [64] which can be attributed to different drug response by different individuals even if they are provided with same medication. [65] The factors influencing this may be genetic or non genetic. [65] The adverse effects of few types of biomedicine are given in Table 5. It has also been found out that some of the 'side effects' or symptoms might be due to psychological distress. [66]

Table 5:- Side effects of various drugs

Type of Drug/Therapy.	Its side effect.
NSAIDs (Non-steroidal anti-inflammatory drugs)	Gastrointestinal side effects (long term NSAIDs may result in perforation, bleeding and strictures) [64]
Warfarin and other Anti-coagulant drugs	Intramucosal haematomas. [64]

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Antibiotics	**Can cause diarrhoea and the mechanism is frequently the result of a *Clostridium difficile* overgrowth of the colon.** [64]
α-glucosidase inhibitors such as acarbose/ orlistat, used in the treatment of obesity.	**Malabsorption.** [64]
Oral contraceptive Pill.	**It may lead to mesenteric arterial and venous thrombosis leading to ischaemia, inflammation, necrosis and perforation.** [64]
Antiviral for chronic viral hepatitis (therapy with interferon- IFN-α/ PEG-IFN-α)	**Most clinical trials report that the proportion of patients experiencing at least one of the following side effects is consistently in excess of 95%. They include flu-like symptoms, haematological toxicity, depression, hypo- or hyperthyroidism, dermatological side effects, neurological side effects, Interstitial pneumonitis, bronchiolitis obliterans, and reactivation of sarcoidosis and ophtalmological side effects.** [67]
Antipsychotic drugs	**Develop extrapyramidal side effects (EPS) such as parkinsonism and tardive dyskinesia.** [68]
Antiretroviral therapy (ART)	**Metabolic and hepatobiliary adverse effects.** [69]
Chemotherapeutic drugs.	**Hypersensitivity reactions** [70]**, enterocolitis with diarrhoea, constipation and even perforation may be problematic, especially with fluoropyrimidines (5FU), irinotecan, methotrexate and cisplatin.**[64]

Due to the lack of proper curative therapy for various diseases, one should not be bewildered if one opts for alternative medicine. [58] It is seen that people in general prefer these unconventional therapies where long-term treatment is required. [71] People also practice self-medication and are reluctant to mention it to their physicians considering such therapies as natural ways of healing, incapable of doing any harm, or interacting with conventional drugs. It is not only the illiterate rural people who resort to such practices but also the literate urban people. But it is know well known that even these unconventional therapies are not free from adverse effects. [72] And, withal, the *Charaka Samhita*- a classic text book of Ayurveda delineates the adverse effects of reckless handling and formulation of medicines. [73] Early, the ayurvedic physicians used to prepare the medicines for their patients themselves. They were aware of the various stringent protocols and followed them meticulously. At present there is a paucity of such practitioners and these traditional medicines have been formalized into a thriving industry. [73] According to Ayurvedic experts, at least one metal is present in 35-40% of the approximately 6000 medicines which need to be handled with care. [74] Even Charaka (a Vedic physician- an eminent internist [44]) said that even a strong poison could become an excellent medicine if administered properly and on the other hand even the most useful drug could act like a poison if handled carelessly. [73]

Though, there are some scientific literatures to prove the potency of traditional medicines [59] (Table 6) but still, there is a dire need to decrypt the cryptic scriptures of traditional medicines so that its efficacy can prove to be a panacea to the diseased world. [73] Furthermore, it can add a great deal to the economics of the world. [75][76]

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Table 6:- Some scientific proofs regarding the efficacy of non conventional remedies.

S.No.	Type of Practice.	Corroboration of its efficacy.
1.	**A**yurveda	▪ A multi-herbal formulation of *Berberis aristata, Holarrhena antidysenterica, Picrorrhiza kurroa, Terminalia belerica, Terminilia chebula* and *Emblica officinalis* produced significant beneficial effects with bleeding piles. [48] ▪ Ashwagandha (*Withania somnifer*) could be a useful neuroprotective therapy in various central nervous system related disorders. [77] ▪ It was found that after complete processing i.e. undergoing 'samskaras' in Ayurveda, crude aconite (an extremely lethal substance) was fully devoid of toxicity, while the unprocessed crude aconite proved to be toxic to mice. [78]
2.	**Y**oga	• Yogic exercises enhance the antioxidant defense mechanism in diabetics by reducing oxidative stress. [79] • Yogic approach was successful in the management of many psychosomatic diseases. [80] • There was a significant improvement in diastolic blood pressure, upper body and trunk dynamic muscular strength and endurance, flexibility, perceived stress, and health perception depending on the style of yoga. [81]
3.	**U**nani	♦ The diuretic and nephroprotective effect of JZM (Jawarish Zarooni Sada) were found to be quite significant. [82] ♦ KAHAW (Khamira Abresham Hakim Arshad Wala) showed cardioprotective potency against isoproterenol (ISO)-induced myocardial necrosis and associated oxidative stress. [83] ♦ The eye drop formulation (*Berberis aristata, Cassia absus, Coptis teeta, Symplocos racemosa, Azadirachta indica, Rosa damascene*, Alum, K2SO4•Al2 (SO4)3•24H2O, Phenyl ethyl alcohol) has triple action as an anti-inflammatory, antimicrobial and anti-allergic and is safe and effective in the treatment of conjunctivitis. [84]
4.	**S**iddha	✶ *Amukkarac curanam* a polyherbal formulation was found to have significant analgesic and anti-inflammatory activity.[85] ✶ Kalpaamruthaa, containing *Semecarpus anacardium* nut milk extract, dried powder of *Emblica officinalis* fruit and honey had analgesic, antipyretic and Ulcerogenic properties.[86]
5.	**H**omeopathy	❋ It was found that piglets of the homeopathic treated group had significantly less *Escherichia coli* diarrhea than piglets in the placebo group. [87]

Conclusion

Due to the contribution of numerous significant factors, the market of herbal medicines has grown at an expressive rate worldwide. Some of them are: preference of consumers for natural therapies; concern regarding undesirable side effects of modern medicines and the belief that herbal drugs are free from side effects since millions of people all over the world have been using herbal medicines for thousands of years; great interest in alternative medicines due

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to traditional acceptance; preference of populations for preventive medicine due to increasing population age; the belief that herbal medicines might be of effective benefit in the treatment of certain diseases where conventional therapies and medicines have proven to be inadequate; tendency towards self-medication; improvement in quality, proof of efficacy and safety of herbal medicines and high cost of synthetic medicines [35] The traditional medicines have proven to be potent from time immemorial. Its methods and procedures may be give rise to skepticism but still one cannot deny its efficacy. As it is said, "Why think? Why not experiment?" The time has come to raise above all prejudices and experiment. Perhaps, we might be able to eradicate all the maladies of not only rural India but also that of the world.

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