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# Herbs, Home Medicine, and Self-Reliance: A Study on the Current Status of Traditional Home Medicine in Idukki District, Kerala

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*SIT Study Abroad*

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Herbs, Home Medicine, and Self-Reliance:

A Study on the Current Status of Traditional Home Medicine in Idukki District, Kerala

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SIT Study Abroad India: Sustainability and Social Change

Spring 2015

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**Abstract**

*Home medical knowledge, or knowledge of how one's surroundings can be used to maintain and restore health, can be an important tool for health self-sufficiency in rural places as well as for the ecological conservation of important plants and natural materials. The Indian state of Kerala has a rich heritage of traditional medicine, found in the historically inter-related forms of codified Ayurveda and folk knowledge. In Idukki district, a region of Kerala nestled in the hills of the Western Ghats, rural households engage in small-scale home-gardening and agroforestry, which in addition to providing nutritionally diverse food is a source of medicinal herbs and home remedies. This study interviewed 35 households in the village of Mankulam, Idukki District regarding their knowledge and utilization of herbs and home-remedies. A total of 80 local plants and substances were identified as being used by villagers for medicinal purposes, to cure or prevent wide varieties of ailments. Families with extensive use and knowledge of home medicine also engaged in intensive home gardening practices which integrated their food and medicine cultivation. While a basic knowledge and use of at least a few medicinal plants in the home is nearly ubiquitous, more extensive knowledge of advanced remedies and plants is still present but quickly disappearing. Though a majority of families responded that they find natural remedies to be superior to Allopathic ones, many of these are increasingly relying on Allopathic medicines. Factors found to be contributing to this paradox include changing lifestyles, the convenience factor of Allopathy, and diminishing home-cultivation of medicinal plants.*

## ***I. Introduction***

Traditional medicine is an extremely broad and diverse category of human knowledge, including within it the vast majority of all medical knowledge produced throughout history and pre-history. Most often (though not always), traditional medicine is orally communicated through each successive generation. It is practiced around the world both by expert healers, and within individual households to prevent and treat diseases of all kinds. While expert healers are typically specialists utilized for more severe cases, it is in family households where the widest range of generalist medical knowledge is found, capable of addressing a wide range of common and uncommon health concerns (Vedavathy, S. 2003). Traditional medicine typically relies on plant, animal, and mineral materials from the local surrounding area, which in today's context allows even the most rural and economically disadvantaged families and communities to maintain a degree of health and self-sufficiency even apart from the benefits of modern allopathy.

It has been estimated by some studies that traditional and herbal medicines are used by 75-80% of the world's population – up to two times as much as allopathic medicines (Pal, S. & Shukla, Y. 2003). Historically and pre-historically, humans have been effectively utilizing their plant, animal, and mineral surroundings to prevent and treat disease since their earliest days, with allopathy being a recent post-industrial addition to medical knowledge. With this in mind, it is also important to recognize that the use of non-allopathic and traditional medicines is not to be viewed as merely an ancient practice, but a living and contemporary one which must be considered and validated within its varied contexts. Contrary to any perceptions that the use of traditional medicines is ineffective and only done where allopathy is unavailable, those who use and practice traditional medicines worldwide have no doubts as to its efficacy and self-contained holism (Vedavathy, S. 2003). Cross-studies of herbal remedies in different locations have suggested that the multi-locational and multi-ethnic similarities of traditional knowledge systems

provide a solid criteria on which to validate them (Jain, S. 2003).

India is rich with traditional medical knowledge, which can be considered to be present in two forms: codified and uncoded (written and unwritten) medicine (Gangadharan, G. & Shankar, D. 2009). However, it would be inaccurate to view these as unrelated; in many cases codified knowledge like that found in the 3000 year old ayurvedic texts developed out of local and indigenous knowledge, and likewise some local knowledge was influenced by codified knowledge. This assimilation is particularly true in Kerala, the state that has become nearly synonymous in name with Ayurveda. Until the late-colonial and post-independence periods the distinctions between indigenous, folk, and codified medicine was not as clear, and formalized expert practice had a working relationship with local folk medicines (Abraham, L. 2013). The *Charak Samhita*, one of the major ancient texts on Ayurveda, provides evidence for this claim, stating that knowledge of medicinal plants should be obtained from “cowherds, hermits, hunters, forest dwellers, and those who gather plants of the forest for food” (Menon, I. & Spudich A.). In depth folk medical knowledge was ubiquitous in the pre-colonial days, and Vaidyams often only needed to see the most serious cases which could not be treated at home (Variar, P.R. 1985).

Traditional medical knowledge of the kind historically common to Kerala can be a powerful promoter of health self-reliance, as well as for the ecological preservation of important plants. In rural Kerala, it is common for families to engage in small scale agriculture and agro-forestry in the immediate area around their house in order to provide themselves with food and medicinal plants (Kumar, B. & Nair, P. 2004). This practice implies a high degree of household self-sufficiency, and also has a significant role in the conservation of medicinal plants by providing them with secure roles in every household’s carefully managed surrounding agro-forest ecosystem (2004). Often only staples such as rice and fish are purchased at the market, and all vegetable material is gathered from immediate surroundings. It goes without saying that

medicinal plant use and home-gardening in Kerala share a close relationship. Plants known to have medicinal value, many of which are codified in Ayurveda, are carefully cultivated around each house. Many of the more aggressive weed-species and grasses are used for medicinal purposes as well, further contributing to the efficacy of a fully functional home-garden ecosystem (Jeeva, S. et al. 2006). Equipped with knowledge of the medicinal value found within their home-gardens, a family can manage their land to provide themselves with a full range of pharmaceuticals capable of preventing and treating almost any ailment.

Implicated within these practices is a deep understanding of local ecosystem dynamics, in which the house and the land around the house share a symbiotic and integral relationship – making the use of home garden medicine a powerful force for ecological sustainability. Human importance attached to medicinal plants ensures their survival within the context of managed eco-systems because each family becomes the caretaker of numerous important plant species, and the plants in turn provide care for the family. This healing reciprocity is perhaps the most important component of local medicine that is lost in more commercialized forms of “natural medicine” which package, marketize, and sell herbal remedies in a manner similar to allopathic pharmaceuticals. The ecological relationship that one has with the medicine is lost with this modern development, and although the same herbs are often used, purchasing them in factory produced capsules eliminates the reciprocal human-environment healing that arises from the decentralized management of medicinal substances. This is particularly important to recognize as prices for commercial natural medicines rise due to diminishing availability of the required species. Many essential species to both local and marketed medicines are rapidly becoming endangered as a result of rampant over-harvesting and poor management techniques. The home knowledge, management, cultivation and use of medicinal non-timber forest products provides a time-tested and viable solution to this problem.

Although local medicine is still widely used and prevalent in all rural areas of India, sociologists have found that levels of local knowledge has rapidly declined in recent years (Shankar, D). This has been attributed to various factors associated with the multitudes of changes which are encompassed within processes of modernization, such as faster paced lifestyles, out-migration to cities, and the increased influence of allopathy on rural health options and health perspectives (Shankar, D). Public health development in India and elsewhere in the world is heavily focused on the expansion of allopathic facilities, which greatly contributes to the erosion of local medical knowledge (Shankar, D). The introduction of allopathy into rural areas introduces new ways of conceptualizing health which diminish confidence in local traditions (Shankar, D). The view that allopathy is “modern” and traditional medicine is “backward” can be internalized by knowledge holders themselves, causing them to abandon their practices for expensive allopathic medicines. As globalized lifestyles reach even the most rural of locations, people – particularly the youngest generations – are increasingly finding themselves leading busier lives to pursue income, without the time or concern to learn local traditions. As such, even in cases where confidence in local medicine’s efficacy has remained, herbs have a difficult time competing with the convenience of allopathic remedies.

Increasingly, governments, NGO’s, and scholars from a variety of disciplines are recognizing the importance and validity of local medical knowledge and its implications for community self-reliance, health, and ecological conservation. As such, there have been increasing numbers of studies in recent years which attempt to document this knowledge and assess its status. Since local medicine is largely context dependent on demographic and ecological factors, it is necessary that wide varieties of specific localities are studied.

The setting for this study is the village of Mankulam, in Idukki District, Kerala. The population is approximately 9000, with the majority being Roman Catholic, followed by smaller

populations of Hindus, Muslims, and Adivasis (indigenous scheduled tribes). Mankulam is nestled in the Western Ghats, and is well known for its status as a bio-diversity hotspot region and its mild tropical climate. Most of the population is engaged in some form of agriculture or home-gardening. There are no ethnographic or ethnomedicinal studies on the status of local medicine in this area. The purpose of this study is to assess the status of home medicine knowledge among households and the prevalence of its practical utilization. The study will also attempt to identify medicinal practices known and used in the area. It will hopefully contribute to the existing body of literature on local medicine in South India, as well as promote an understanding of local medicine as a viable contributor to health, household self-reliance, and ecological conservation.

## **II. *Methods and Ethics***

For this study, thirty-four households and individuals representing households were interviewed in Mankulam regarding their knowledge and use of home remedies, herb cultivation, daily living habits, and perceptions of herbal/ayurvedic vs. Allopathic medicines. Data collected was qualitative. The interviews were in the format of a semi-directed open discussion between the researcher and present household members. Pre-determined questions were asked to obtain certain precise information, but beyond this the exact format, length and focus direction of the interview was largely dependent on the context of the situation and the family's responses<sup>1</sup>. The sampling method used was convenience, and households were selected by the guides/translators. Respondents varied in age range, family size, and income. Most of the respondents identified as Roman Catholic, with minorities identifying as Hindu and Adivasi. Interviews took place over a three week period. Translation was used for the majority of interviews.<sup>2</sup> Verbal permission was

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<sup>1</sup> See appendix A for questions.

<sup>2</sup> See appendix C for assistance and contact.

taken from all respondents. Information was recorded by hand, taking notes in shorthand.

## **II. Findings**

### **A. INTRODUCTION AND SUMMARY**

Families exhibited a wide range of knowledge levels and degrees of utilization when interviewed about their use of herbal medicines. Knowledge and use of common herbs were found in almost every household in some form; knowledge of remedies varied from those who knew only the most common ones with *Tulsi*, *Neem*, *Adalodokom* and Turmeric, to some who had an in depth and extensive knowledge of medicinal substances and remedies. When herbs were used, they were in most cases obtained from a family's home garden, with some only being available in the forest. Families with significant knowledge of herbs were found to also be maintaining large home gardens. Generally, interviewees made no distinction between the home use of herbs and "ayurvedic medicine", and all herbs were called "ayurvedic" whether a part of classical ayurveda or not. Knowledge was not distributed evenly across households or between generations; some households possessed significantly more knowledge than their neighbors, and older generations – typically people over 50 years of age had more knowledge than their generational successors. Although a majority of respondents find herbal remedies to be superior to allopathic ones, an increasing number of families are abandoning their traditional knowledge in favor of allopathy.

### **B. THE EXTENT AND DEPTH OF HOME KNOWLEDGE**

Taken from all respondents, a total of 80 local natural substances were identified as possessing medicinal value, either for treatment or prevention purposes. The majority of these are plants, with a few being animal or even human products such as curd, ghee, cow urine, and human breast milk. Of the plants, most are found growing in the informant's cultivated land, and are often intentionally planted or managed for medicinal use. Some were reported to be found

only in the forest, and are considered to be more rare and therefore are not used except by those for whom herbs provide primary health care and prevention. Different parts of plants are used for the various remedies; typically the leaves and buds are used, though some remedies specify that roots, stems, or fruits be taken. It is common practice to combine herbs to make a single remedy – presumably to increase efficacy. The most common methods of preparation includes boiling herbs in water to be consumed as a beverage or bathed in, pressing the plants and using the resulting juice for topical application, or simply eating them.

A significant variety of ailments were reported to be treatable at home, with the most commonly known remedies identified being the ones for cough, cold, fever, headache, sore throat, nausea, stomach pain, bleeding, poisonous bites/stings, and skin problems. Remedies for the most common ailments were known in all but two of the interviewed households (in these cases the oldest member of the home was not present), and there were often multiple known remedies for a single ailment known and used within a home. Different households often exhibited slight variations in preparation methods and ingredient combinations for these common ailments; for example in the case of fevers the ubiquitous ingredient named was panikoorka , though some families added chimakoorka or ginger and long pepper to this remedy. Most commonly this is boiled in water, strained and consumed as a beverage, though a few families claimed that it is also helpful to inhale the boiling vapors as well. Though most common remedies exhibited diverse variations in specific preparations, there was generally consistency as to what the key ingredient for any given ailment was (ie. Panikoorka for fever, Alpam for poisonous bites), though some ailments have multiple known herbal remedies of which either one on its own is sufficient (ie. Either *Hemigraphis colorata* or *Chromolaena odorata* for bleeding).

Knowledge of certain herbs common to Ayurveda, such as Tulsi, or Neem is so common that even families for whom the primary method of healthcare is allopathic and who possessed

comparatively little herbal knowledge still knew or used them to some extent. Every home possesses a degree of cultural common sense related to health, much of which is easily observable to a person spending time in the community. It is common for people to drink tulsi boiled in water for health, or to put herbs like Neem in boiled bath water. Tulsi is a universally used plant, found growing everywhere, and with an uncountable number of uses. Drinking water in Mankulam is hardly ever served without a medicinal herb of some kind boiled into it; Ramacham root is very commonly used for this purpose, as is Patimukhol bark, both of which are believed to build immunity against diseases (Varkeay, Personal interview). Most families purchase Ramacham and Patimukhol from shops, with the exception of those with the most extensive home gardens who grow and harvest these substances themselves. It is also common for people to use mango leaves to clean their teeth, an ancient practice which is rooted in ayurvedic daily regimens (Xavier, Personal interview). Applying oils to the body and performing self-massages is among the most common habits; food oils like olive oil and coconut oil are commonly seen in health supply and medical stores. Through information gathered in all interviews as well as personal observation in the community, it was apparent that home oil massaging is a common daily habit done to maintain overall wellbeing.

Some homes possess knowledge of less common remedies such as those for kidney stones, conjunctivitis, or diabetes management. Extensive knowledge of more involved home treatments was found in several families, though in some cases the primary knowledge holder was extremely advanced in age, and had forgotten most of them due to not having used them in decades. When older knowledge was remembered, it was usually extensive, as in the instance where the father explained that his mother had recently helped him to cure his severe lumbar pain. She had instructed him on which herbs to collect, and then cooked them into an oil which was massaged into the lower back (Personal interview, anonymous, April 21, 2015). This kind of

practice is comparable to formal Ayurvedic Panchakarma treatments using similar technique which many people in cities pay expensive fees to undergo. The more extensive knowledge of some families was enough to fulfill almost all of a family's primary health-care needs, able to effectively treat everything from common injuries to kidney stones. Knowledgeable family members were excited to share their knowledge – hardly needing to be prompted with any questions. They also reported to regularly share their knowledge with their neighbors, advising friends and relatives on the home treatment of their ailments; particularly regarding the management of diabetes, cholesterol, or blood pressure.

One highly knowledgeable man not only spoke about his own knowledge and use of herbs, but also diverged into the history and heritage of herbal medicine and Ayurvedic traditions in Idukki, and other part of Kerala (Xavier, Personal interview). It was noted from this mans description of both indigenous medicine and ayurvedic medicine that the Ayurvedic heritage of Kerala is deeply weaved into the local medical traditions in Idukki, with the boundary between that which is Ayurvedic and that which is local being largely undefined by the common person. The large extent of the overlap between Idukkis local herbal knowledge and codified ayurveda can be easily confirmed by reading the labels of packaged store-bought ayurvedic remedies in cities, which will usually display a familiar list of herbs found and used all throughout the hills of the Western Ghats. Most households used the terms “ayurveda” and home medicine interchangeably, and did not distinguish between the two.

### C. HOME REMEDIES

Remedies commonly known to all households still exhibited slight variation between each home in precise ingredient combination and preparation method. For these remedies, the specific version of the remedy described by one of the informants with the most extensive knowledge was

taken as the most valid and representative, and is described and cited below. Due to the high degree of varied knowledge exhibited by all households, this compilation is not entirely comprehensive, but rather provides a thorough selection of the remedies described by the most knowledgeable informants.

<b>Ailment/Illness</b>	<b>Home Remedies (described using common name)</b>
Fever	<ul style="list-style-type: none"> <li>• Boil leaves of panikoorka and chimakoorka in drinking water (Xavier, Personal interview)</li> <li>• Inhale the steam vapors of tulsi, ginger, and pepper boiling in water (Mary Thomas, Personal interview)</li> </ul>
Cold	<ul style="list-style-type: none"> <li>• Boil tulsi, adalodokom, and drumstick leaves in water and drink (Mary Thomas, Personal interview)</li> <li>• Boil ginger and pepper, and inhale vapors (Macy, Personal interview)</li> <li>• Press tulsi in hands, and deeply inhale aroma (All)</li> </ul>
Cough	<ul style="list-style-type: none"> <li>• Boil panikoorka and chimakoorka (one or both), in water with ginger, pepper and tulsi. Strain and drink. Many families had variations on this, which only used some of the listed ingredients.</li> <li>• Fry the leaves of Adolodokom with hen eggs, and eat. Ginger and pepper may also be added (All)</li> <li>• Drumstick skin, long pepper, and ginger fried in egg and eaten (Savatri, Personal interview)</li> <li>• Boil tulsi leaves in water and drink (All)</li> </ul>
Sore Throat	<ul style="list-style-type: none"> <li>• Eat pressed muelcheviyan leaves (Perna, Personal interview)</li> </ul>
Headache	<ul style="list-style-type: none"> <li>• Shallots (small onions), and pullthithlam, pressed and applied to head.</li> </ul>
Nausea/Vomiting	<ul style="list-style-type: none"> <li>• Ginger with nutmeg eaten or boiled in drinking water (all)</li> <li>• Mallar boiled in drinking water (Siji, Personal interview)</li> </ul>
Stomach Pain/Gas	<ul style="list-style-type: none"> <li>• Eat wild cumin collected from the forest (Valsama, Personal interview)</li> <li>• Cardomom seeds eaten (Siji, Personal interview)</li> </ul>

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| Skin Diseases<br>(Psoriasis/Acne/Rash) | <ul style="list-style-type: none"> <li>• Neem leaves and turmeric pressed and applied topically to affected area (Xavier, Personal interview)</li> </ul>  |
| Joint Pain                             | <ul style="list-style-type: none"> <li>• Thal eaten daily. Particularly effective for elderly (Xavier, Personal interview)</li> <li>• Boil tamarind leaves in water, use steam compress on joints (Perna, personal interview)</li> <li>• Kuttipanal pressed in egg whites and rice water, massaged in (Bindu, Personal interview)</li> <li>• Drumstick leaves pressed and massaged onto joints (Sunny and Jennim Personal interview)</li> </ul> |
| Body and Muscle Pains                  | <ul style="list-style-type: none"> <li>• Chilly leaves pressed in cow urine and massaged in (Siji, Personal interview)</li> </ul>   |
| Back Pain                              | <ul style="list-style-type: none"> <li>• Chenninayakam pressed, mixed with raw egg white and massaged in (Xavier, Personal interview)</li> </ul>  |
| Diabetes                               | <ul style="list-style-type: none"> <li>• Eat passionfruit daily (Siji, Personal interview)</li> <li>• Eat neem in meals to conceal bitterness (Valsama, Personal interview)</li> <li>• Boil touch-me-not and drink daily (Siji, Personal interview)</li> <li>• Boil jack fruit in water and drink daily (Xavier, Personal interview)</li> <li>• Consume less sugar (Xavier, Personal interview)</li> </ul>                                      |
| Eye Pain/Irritation                    | <ul style="list-style-type: none"> <li>• Gooseberries pressed, applied to eyes (Xavier, Personal interview)</li> <li>• Panichembulai leaves pressed, applied to eyes (Valsama, Personal interview)</li> </ul>   |
| Conjunctivitis                         | <ul style="list-style-type: none"> <li>• Pachetti pressed and rubbed on eyes (Xavier, Personal interview)</li> <li>• Human breast milk and cumin applied to infected eyes (Valsama, Personal interview)</li> </ul>  |
| High Blood Pressure                    | <ul style="list-style-type: none"> <li>• Boil guava leaves in drinking water and drink daily (Siji, Personal interview)</li> </ul>  |
| Poisonous Bite<br>(Spider, Scorpion)   | <ul style="list-style-type: none"> <li>• Either turmeric or Alpam pressed and applied to wound (Mary Thomas, Personal interview)</li> <li>• Turmeric and Tulsi pressed and applied to wound (Elsie, Personal interview)</li> </ul>  |

Snake Bite	<ul style="list-style-type: none"> <li>• Pressed leaves of sarppakolla applied to the wound (Xavier, Personal interview)</li> </ul>
Bleeding Wound	<ul style="list-style-type: none"> <li>• Murukooti and shallots pressed and applied to wound (Xavier, Personal interview)</li> <li>• Communist Phala buds pressed and applied to wound (Elsie, Personal interview)</li> </ul>
Sprained Joint	<ul style="list-style-type: none"> <li>• Varmbikoduvali and turmeric pressed and applied to sprained joint (Xavier, Person interview)</li> </ul>
Cancer	<ul style="list-style-type: none"> <li>• Moolanchaka - a rare type of jack fruit - is eaten to slow or stop the spread of cancer (Xavier, Personal interview)</li> </ul>
Indigestion	<ul style="list-style-type: none"> <li>• Malenghi eaten after meal (Xavier, Personal interview)</li> <li>• Eat plantain ribs (Perna, Personal interview)</li> </ul>
Tooth Pain	<ul style="list-style-type: none"> <li>• Chew on the stem of a pepper vine (Xavier, Personal interview)</li> <li>• Chew on clove leaves (Macy, Personal interview)</li> </ul>
Kidney Stones	<ul style="list-style-type: none"> <li>• Kallorvanchi and ramacham boiled in drinking water to prevent and treat (Xavier, Personal interview)</li> </ul>
Nursing and Lactation Difficulties	<ul style="list-style-type: none"> <li>• Pallmatach collected from forest pressed and applied (Xavier, Personal interview)</li> </ul>
Breast Pain and Soreness	<ul style="list-style-type: none"> <li>• Malladhanginella pressed and applied topically (Xavier, Personal interview)</li> </ul>
High-Cholesterol	<ul style="list-style-type: none"> <li>• Boil coconut shell and garlic in water and drinking (Perna, personal interview)</li> </ul>
Arthritis	<ul style="list-style-type: none"> <li>• Ummam, Karinechi, Eruka, Vadakudy leaves, boiled in water. Use water for bath (Xavier, Personal interview)</li> <li>• Kurundoti boiled in drinking water (Jinsi, Personal interview)</li> </ul>
Measles/Chickenpox	<ul style="list-style-type: none"> <li>• Neem boiled in water and used for bath (Sunny and Jenni, Personal interview)</li> </ul>
Diarrhea	<ul style="list-style-type: none"> <li>• Fresh nutmeg eaten (Siji, Personal interview)</li> <li>• Ayamodakam pressed and eaten with salt (Bobbie, Personal interview)</li> </ul>
Tonsillitis	<ul style="list-style-type: none"> <li>• Muelcheviyan pressed and eaten (Valsaima, Personal interview)</li> </ul>

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| Jaundice  | <ul style="list-style-type: none"> <li>• Boil anachodiyan in milk and drink (Siji, Personal interview)</li> <li>• Eat leaves of kizharnelli (Valsama, Personal interview)</li> </ul>  |
| Hair Loss | <ul style="list-style-type: none"> <li>• Kaiunni and Katavazha cooked into coconut oil and massaged into head (Xavier, Personal interview)</li> <li>• Hibiscus in oil applied to head (Smitha, Personal interview)</li> </ul> |

#### D. PARADOXES OF PERCEPTION AND UTILIZATION

Of the 34 households interviewed, a total of 21 expressed that they preferred herbal and ayurvedic remedies to their allopathic equivalents, which is nearly twice the number who preferred allopathic ones (the remaining two preferred homeopathic remedies). Several different reasons were cited by families justifying their preference for herbal remedies, with the most common being that they are a more effective and superior form of medicine. It is commonly perceived that herbal medicines work more slowly, but perform a more thorough job of curing the ailment and preventing it from coming back, whereas it is thought that allopathic medicines only cure the symptoms. A majority of interviewed families believe herbal remedies to be mostly free from side effects and better for a person's long term health than their allopathic counterparts. Many interviewees (70%) had used the services of the local ayurvedic doctor, though the majority only visit them for ailments like body pains, back pains, arthritis, and other chronic ailments; few today utilize the services of Vaidyam practitioners for primary healthcare purposes.

Paradoxically to the findings regarding household preference, it was found that even though a large majority of respondents feel that herbal medicine is superior to allopathy, significant numbers of these same respondents are almost entirely relying on allopathic medicines (see Figure 1). Families who rely on allopathic remedies in spite of a preference for herbs cited similar reasons for this; most commonly that the allopathic medicines are more quick and that

family members no longer have time to grow and prepare difficult herbal remedies. Families for whom allopathic remedies were reported to be more easily available than herbs typically do not intentionally cultivate any herbs, save for a lone tulsi plant by the porch. It is therefore a much simpler task for them to spend the money to purchase an allopathic remedy than it would be to collect and prepare the necessary ingredients from the forest. Even though most families described herbal remedies as “better” than allopathic ones, the allopathic remedies are viewed as more effective at quickly alleviating symptoms, which in the case of illness enabled one to return to work as quickly as possible. For many who find themselves increasingly busy with work, school, and the pursuing of careers, the opinion that allopathic medicines are inferior and potentially even bad for long term health is super-ceded by the factors of convenience and fast action.

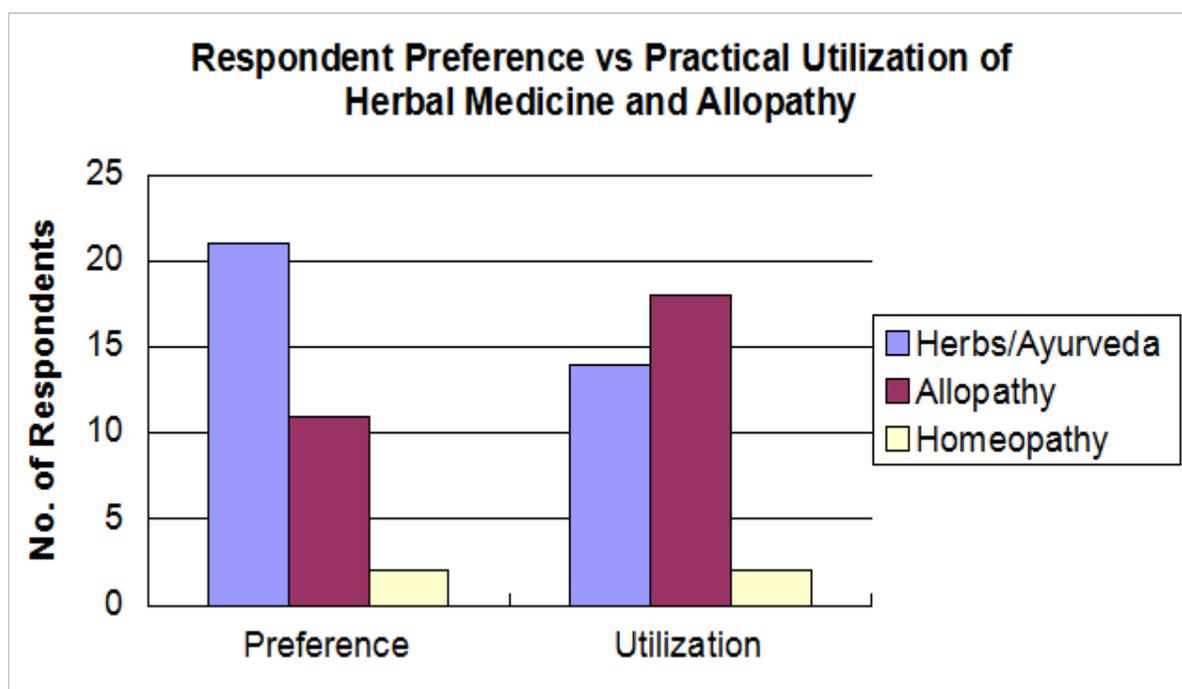


figure 1: While most interviewees believed that herb-based remedies are superior to their allopathic equivalents, a majority are now relying on allopathy for most of their common health needs in day-to-day life. Two interviewees are primarily relying on homeopathic medicines and used neither local herbs or allopathic medicines.

Contrary to this trend, several responding households still rely entirely on their own

medicinal herbs and knowledge for their health-care – not out of necessity but rather personal preference. Others use allopathy for specialized purposes but still rely on herbs for most general medicine. In all interviews with families who still use herbs to a significant extent, the primary reason for doing so was health related. Continued reliance on herbal medicine is highly connected to the interviewees concept of health. Some distrust allopathy – fearing side effects – as in the case of a woman who is afraid to take allopathic medicines that doctors prescribe because she fears they will cause cancer or damage long-term health (Julie, Personal interview). The perception that allopathic medicines are chemical based, and therefore unhealthy is common, often accompanying the belief that chemically grown foods are unhealthy. One interviewed family expressed that they do not use allopathy because it “weakens the body” whereas herbs and ayurvedic treatments “give energy” (Personal interview, Siji, April 28, 2015). It is very important for these families to treat an illness as it comes on, rather than waiting for it to become a serious problem at which point professional intervention becomes necessitated. If this can be successfully done, families rarely find outside help necessitated or desired.

Practicality was also an important factor influencing a family’s decision to rely on their own herbs. For families who cultivate their own herbs, using them rather than spending extra money on expensive allopathic medicines is an economical choice. Herbs are easily and freely available provided one cultivates them around their house. One man described how when anybody in the home is sick, all he has to do is step out the door and gather the necessary materials to help them (Xavier, Personal interview). The extra work necessary to maintain the plants in home gardens and prepare remedies is no price to pay for the perhaps undefinable value of utility that they provide.

## F. HOME CULTIVATION AND MEDICINE

Herbs in Idukki are primarily obtained through home cultivation, with a few uncommonly

used ones limited to the forest. Almost all families are engaged in home gardening – but the biodiversity of their cultivation and extent to which medicinal plants are integrated into the home landscape varies greatly. Interviews revealed that the prevalence of extensive medicinal home cultivation has greatly declined in the past several decades. One man reported that when he was young everyone in the village knew that “all green leaves are medicine” and that all households grew herbs extensively and knew which ones to use from the forest (Varkey, Personal interview). This man explained that when he was a child, there were no doctors, but only herbs and the services of Vaidyams (Varkey). As such, the home growing and use of herbs for one's own health purposes was a necessary practice at this time. According to this man, very few people today grow herbs in the way they used to, except for “a few old people here and there” (Varkey). Similar reports from other elderly respondents confirmed that herbs were significantly more available when they were growing up because everyone grew them, and they were an integral component of anybody's home cultivation. A few spoke of once common herbs that have since disappeared entirely from both cultivated land and wild forest, though the specific reasons for their disappearance in the area is unknown.

The elderly couple who was most knowledgeable of any respondent, and who still entirely relies on herbs and Ayurvedic doctors grows all varieties of both common and uncommon herbs in the area around their house (Xavier, Personal interview). The husband explained that he goes out into the forest to collect herbs which he does not have, and plants them in the area around his house, which is a rich tropical landscape of edible foods, plants, fruits, and herbs in what is a beautiful example of home agro-forestry (Xavier). During the interview he was excited to show off his land, providing examples of both common and uncommon medicinal herbs, and picking colorful varieties of fruits, nuts, and edible plants as he moved through the trees. Accounts by the older generation reveal this depth of home landscaping to have once been the norm, though as a

culture it has long since dwindled.

In spite of this, interviewees of all ages demonstrated that they perceived a connection between the prevention of disease and the consumption of home grown foods. It is widely believed that chemical agriculture is bad for one's health, and that working to grow food, and eating a balanced diet from one's own land is the key to maintaining health. Outside a typical house, one will find a diverse selection of edibles which constitute the bulk of the family diet: tapioca, coco, jack, and chilli are common. Interspersed around the house and between other crops are spices and medicinal plants, though the degree to which medicines are included in the families agricultural efforts are subject to extreme variation.

#### G. INTERGENERATIONAL STATUS

In households which hold knowledge of local medicines, the primary source of knowledge is familial legacy. Remedies are typically learned throughout childhood and young adult-hood through observation and active participation in their use. Some older informants also reported learning local medicine from their *ashan*, a community elder who taught children life skills before there was an available public school system. Primarily though, knowledge of medicine is obtained through using it with the older members of the family. The inter-generational status of home medical knowledge is therefore largely unique to each family, and dependent on the degree to which the older members of the family use their knowledge in the home. Children in families which regularly use herbs will inevitably learn them to an extent simply from participation in family life.

Generally, within families it is the elder members who possess the most traditional knowledge of the various medicinal herbs. When elderly knowledge holders were asked if they felt that the young generation is interested in learning and using the traditional knowledge extensively, the answer each time was a predictable no. Although in many families the children

knew a few basic remedies, such as turmeric for a poisonous bite, in most cases (there were a few exceptions to this) they had not learned the knowledge of their parents and grandparents to any significant degree. A man who was among the most knowledgeable informants of the study provided a telling answer: that the younger generation lives a fast life and does not wish to make the time for learning and using traditional medicine but want to be easily recovered and save time (Xavier).

#### **IV. Discussion**

##### **A. STATUS OF KNOWLEDGE AND USE**

It is apparent from the diverse array of medicinal substances identified by respondents and the comprehensive list of ailments they can be used for, that local medical knowledge is still a present part of life in Mankulam. The depth of knowledge that some individuals and families exhibited was surprising and impressive. However, the prevalence of such extensive in-depth knowledge and use of home medicine has diminished in recent decades and continues to do so with each succeeding generation. Though household use of the essential ayurvedic plant remedies remains common in most households, and perceptions of natural medicines and ayurveda remain positive, the utilization of herbs for the majority of health needs is limited to increasingly fewer families while the rest rely on pharmacy-purchased allopathic remedies for convenience – in spite of a poor perception of allopathy's effects on health and its long term efficacy.

This paradox can be easily explained when placed in the context of changing social systems and lifestyles. Reasons which were given by families for preferring natural remedies were based on the superior perceived effectiveness of herbs, while the reasons given for the practical use of allopathy were in nearly all cases rooted in convenience, time-saving, and easy availability. Though herbs are generally perceived to be a more effective and healthier solution which not

only cure an ailment but prevent its return, the consensus is that they usually take longer to relieve symptoms. Most people find themselves increasingly busy, working outside jobs in addition to maintaining their home farms. Children are typically busy with school, and upon completion of primary education will leave the area to continue their studies and pursue work. These factors leave people with little time to make, prepare, and use herbal medicines, and it is much simpler for families to spend the additional income on an allopathic medicine which will quickly alleviate symptoms.

The most important implication of this is that contrary to expectations, decreased confidence does not have a significant role in driving the decline of traditional medicine in this community. Confidence and even pride in the traditional knowledge remains high, and allopathy is very often viewed with suspicion. Rather the major drivers of knowledge loss is related to lifestyle and social changes which place increased emphasis on the convenience and rapid symptomatic recovery provided by purchased allopathic medicines. Previous literature has suggested that the primary effect of allopathy's introduction is decreased faith in local knowledge, due to the perceived superiority of allopathy (Shankar, D). The findings of this small study run contrary to this, suggesting that even as local knowledge decreases, positive perceptions of it remain. Allopathy is not viewed as a superior or necessarily even a positive thing to many interviewees, but is simply a convenient necessity in the context of today's busy lifestyles.

#### B. MEDICAL PLURALISM AND HOME MEDICINE'S CHANGING ROLES

Considering the vastly positive perceptions of herbal medicine even among those who use it less frequently than they used to, it seems unlikely that its use will disappear entirely. The use of herbs as medicine has a long and extensive history in Kerala, and so the legacy of this could prevent the complete loss of herbalism from the area's healthcare. There is a close association between the cultural heritage of ayurveda and the local medicine of the area, with there being

little distinction made by the residents between the two. Many of the most commonly used plants in Idukki's local medicine such as *Tulsi*, *Neem*, *Adalodokom*, *Panikoorka*, and others are also common ayurvedic herbs. The practice of using these herbs in the home is to be understood as sharing a close relationship with ayurveda, but also being a unique phenomenon in and of itself since this knowledge is not obtained through formal study of texts but rather is legacy-based and passed from generation to generation. The local people typically view their knowledge as a part of the area's broader ayurvedic heritage, and this association ensures that there remains positive perceptions and confidence towards the local knowledge.

One of the most powerful contributors to traditional knowledge loss is a lack of confidence in the traditions; therefore the positive perceptions of the interviewed families towards home medicine and ayurveda suggests that traditional medicine will likely not disappear entirely in the near future, but rather its function will diminish and compartmentalize to a smaller role within a medically plural landscape. It remains rare to see a home without a *Tulsi* plant by the door, and knowledge and use of common ayurvedic plants like *Panikoorka*, and turmeric to cure small self-limiting ailments is extremely common even among families who mostly use allopathy. In cases when the young generations do hold knowledge, it is typically knowledge of this sort which does not extend beyond the basic. This trend is indicative of a future where traditional knowledge reduces to the basic ayurvedic herbs for minor ailments, while the complete and extensive knowledge demonstrated by some older interviewees dwindles with time.

### C. HUMAN-ENVIRONMENT RELATIONSHIPS

Unlike codified systems, Idukki's local medicinal knowledge is uniquely tailored to the contextual ecological and social landscape, with home remedies being based on plants which grow in the area and the use of them being heavily linked to the social practices of home gardening and agro-forestry common to the area. Families who demonstrate the highest degrees

of awareness regarding the medicinal value of plants were also those who typically continued the practice of cultivating and maintaining a diverse array of herbs in the area around their home.

This has important implications for the conservation of plant species in an extremely bio-diverse ecosystem, as those who hold the detailed knowledge of herbs also serve as the plant's caretakers by maintaining their home garden ecosystems. As the practice of integrating medicinal plant cultivation into horticulture and agro-forestry diminishes, this will inevitably have an impact on the agro-diversity of the region as the cultivated landscape shifts to a food dominated one.

Medicinal knowledge allows for every plant in the agro-ecosystem to have an anthropocentric value attached to it, thereby ensuring the maintenance of biodiversity on managed land. Often, even aggressive weed species are managed and tolerated due to their value as powerful and easily available medicinal plants. One such example is the "communist-pacha", which is so named for its rapid propagation which was compared to the spread of communism in Kerala. This widely found "weed" is commonly known to people as a readily available remedy to stop bleeding and prevent infections in wounds, and so in a managed agro-forestry ecosystem is tolerated in small amounts. Human assigned medicinal value ensures that agriculture is integrated and bio-diverse, rather than over-cultivating a small variety of essential food items and cash crops. Since it is the knowledge of plants and their priceless value which lays the foundation for this practice, the preservation and encouragement of local medicine knowledge among each successive generation is of primary importance to the ecological health of the area.

As a social practice the home cultivation of medicinal plants is one which encourages a more sustainable relationship with their local environment by involving each home in the sustainable cultivation of the necessary foods and medicines, thereby setting up a relationship of reciprocity between human families and their surrounding environment. This is increasingly important in an era where consumerist development models entail decreased direct reliance on ecological

systems, therefore making practices which link communities to their local environments crucial for shaping sustainable livelihoods. Reliance on medicinal plants places humans in an ecological relationship of reciprocal healing; the plants heal human communities, and the communities in turn provide ethical and sustainable management of the systems in which the plants live. The managed ecosystems of knowledgeable interviewees were exemplary of a healing ecological relationship, and though once a nearly universal social norm, is now relegated to those few who prefer the old ways of life.

The human-environment symbiosis which results from home cultivation of food and medicine as demonstrated by more knowledgeable families is one which allows a household to satisfy almost all of its needs using only its immediate environment. However, only a few families interviewed were found to be in this position of self-reliance anymore, while others used a mix of local and allopathic medicines. It should be noted that those who did rely heavily on their home grown plants for medical uses reported a high level of satisfaction and health with these practices, believing them to be far superior to the allopathic medicine that they choose not to use. Families need not completely ignore allopathic medicine to reap some of these benefits of course, families who use both herbs and “English” medicines are still able to take care of many immediate needs with the herbs, commonly bleeding, colds, and mild fevers, therefore eliminating total reliance on mass produced drugs.

## ***V. Conclusion***

This study revealed that home medicine and use of herbs remains a present and active component of life for many residents of Mankulam. It successfully identified local substances used to cure wide ranges of ailments. Home use of herbs is strongly linked to the heritage of ayurveda, and the two terms are used interchangeably by the residents, which poses implications for the degree to which ayurveda and folk medicine are distinguished and differentiated in

current literature as well as shows promise that a degree of cultural pride will shape positive perceptions of traditional knowledge. Most people interviewed perceive herbs to be a vastly superior remedy to allopathy, believing them to be both healthier and more effective. However, the practical use of these herbs is quickly being replaced by the use of allopathy for common needs. This indicates that the rapid decline in knowledge and utilization of traditional medicine is not due to lack of confidence in the knowledge so much as it is the increased prevalence of faster paced lifestyles which do not leave time for the preparation and use of herbs. The home growing of medicinal plants and the use of home medicine was found to be strongly connected; as the practice of home cultivation dwindles so too does the availability and use of herbs. This also raises implications for the ecological conservation of important medicinal species which are no longer being grown and which are increasingly difficult to find. As the plants disappear from family's land, so too does the knowledge of their value and their use in home medicine.

This study has further confirmed the priceless value that traditional knowledge has to those who still hold it. As attested by those who still rely on it for their needs, the possession of traditional knowledge has promoted household self-sufficiency, health, and ecological conservation of essential species for generations, and yet today the knowledge is disappearing, with long-term consequences that can only be guessed. Traditional knowledge preservation is among the most important and difficult tasks ahead of us as the world rapidly globalizes, and it can only be accomplished if the youngest generations rekindle a value and interest in their local knowledge. The work of educational institutions, NGO's, governments organizations, and scholars can assist and promote this, but the continuation of valuable knowledge is ultimately in the hands of the young people in communities to seek out the knowledge that exists among their elders and local environments.

## VI. *Suggestions and Implications for Further Study*

Home cultivation of medicinal plants remains a little researched and yet crucial phenomenon for maintaining the availability of home health-care and preserving the ecological status of important plants. Future research efforts should focus on home cultivation and the role that medicinal plants play in the local agro-ecosystems. As the cultivation of medicinal plants declines, this inevitably changes the horticultural and agricultural systems which villagers maintain. This exploratory study revealed the link between home-agriculture and the maintenance of traditional knowledge to be extremely strong, and so future efforts to preserve traditional knowledge could potentially do so through encouraging the practice of integrating medicinal plants into home gardens.

Future research should also further explore the prevalence of positive perceptions and confidence in local knowledge among common people, since this study indicated that it has a smaller role in the decline of traditional knowledge than hypothesized. The paradox of positive perception and low utilization is something which remains unexplored in existing literature. The factors which influence perceptions, and also those which erode knowledge remain open to further research. Perhaps even more important than research, is to actively question the development models which erode at traditional knowledge, and to ask ourselves whether or not this kind of traditional knowledge has a role in the future of rural life or not.

**Appendices****APPENDIX A: LIST OF PLANTS AND SUBSTANCES USED**

<b>Name</b>	<b>Uses (Either alone or in combination)</b>
Tulsi / Holy Basil	Bleeding, cough, general health supplement, cold, headache, poisonous bites
Indian Long Pepper	Cold, cough, sore throat, headache, fever, digestion problems
Tamarind	Joint pain, cough, Asthma, Jaundice
Manjil / Turmeric	Bee sting, poisonous bites, skin health, measles, stomach problems, sprains, joint swelling
Nutmeg	Stomach pain, diarrhea
Ginger	Stomach pain, vomiting, nausea, cold, skin rashes, fever
Adalodakam / Malabar Nut	Joint pain, cough, Asthma, Jaundice
Communist pacha / Siam weed	Joint pain
Chimakoorka / Chinese Potato	Cough, fever
Panikoorka / Indian borage	Fevers (good for children), cold, cough
Grambu / Clove	Toothache, mouth sores
Murukooti	Bleeding
Gooseberry	Stomach pain, gas, eyesight
Neem	Diabetes, Chickenpox, Skin problems, measles, rashes, acne, Pregnancy, cow nursing, joint pain
Coconut	Headache, Cholesterol
Kayam / Asafoetida	Stomach Problems
Ghee	Burns
Curd	Stomach pain, mouth sores
Kodakan	Stomach pain, gas, toothache
Cherukadaladi / Prickly Chaff	Poisonous bites, inflammation

Karuka / Dhub Grass	Bleeding
Arimpuria	Insect bites
Muelcheviyeen	Tonsillitis, throat sores
Touch me not	Diabetes, open wounds
Patticheviyeen	Dog/Animal bites
Curry Tree	Leaves eaten for cough
Cherupula	Stomach pain
Kavapurri	Stomach pain and vomiting
Human Breast Milk	Conjunctivitis
Small Onion	Headache, insect bites
Garlic	Headache, cholestorol
Kurundhotti / Common Sida	Headache, pregnancy, put in bath to prevent diseases
Green Chilli	Bleeding, open wounds, cholestorol
Cumin	Jaundice, Eye irritation
Kaluwaru	To cool skin, burns
Allpam	Poisonous bites
Drumstick	Cold, cough, general health, joint pain, Eye irritation
Honey	Stomach problems, cough, sore throat
Kudukuenna	Joint pain
Areca Nut	Spider poison
Tobacco	Spider poison
Aanachoriyan / Devil Nettle	Chicken pox, allergies
Cardamom	Fever
Kattarvazha / Indian Aloe	Hair loss
Nutmeg leaves	Diabetes
Plantain ribs	Digestion problems
Mustard	Headache

<i>Phyllanthus amarus</i> / Kizharnelli	Fever
Kuttiapanal	Joint pain
Chadirimulla	Joint pain
Padathali	Stomach problems in children
Chilli Leaves	Muscle pains
Ayamodakom / Bishop Weed	Loose motions
Kaluwaru	Kidney Stone
Raggi	Body and Muscle Pain
Sarppakolli	Snake Bite
Ummam	Body and Muscle Pain
Karinechi	Body and Muscle Pain
Eruka	Body and Muscle Pain
Vadakudy	Body and Muscle Pain
Pullthithlam	Headache
Kallorvanchi	Kidney Stone
Remicham	Kidney Stone
Kuoovapoda	Stomach pain, baby's health
Moollanchaka	Cancer
Malladhanginella	Breast pain and soreness
Pallmatack	Helps with Lactation
Mallenghi	Digestion problems
Thal	Joint pain in elderly -- eaten as food
Kaiunni	Hair loss
Hibiscus	Baby skin cuts,bruises, and scratches
Varmbikoduvali	Sprains
Pachetti	Conjunctivitis, Eye irritation
Chenninayakam	Back pain

Mango	Leaves used to clean teeth
Vayambu	Stomach/intestinal pain
Pathimukhal	Immunity building (Put in drinking water)
Ramacham	Immunity building (Put in drinking water)
Cow Urine	Body and muscle pains

## APPENDIX B: FAMILY INTERVIEW FORMAT

\*It should be noted that interviews were in the format of an open ended discussion with all present household members, and the following questions are only an approximation of what kinds of things were asked to prompt informative responses.

1. Are you familiar with any herbs or home materials that can be used as medicine?
  - a) If yes, proceed to ask about what herbs are common or important, what they use to treat various ailments, etc.
  - b) If no, did you at any point or is there anyone in your family who is not present who knows?
2. Do you use any of these regularly?
3. Do you use English medicine (allopathy)?
4. Which kind of medicine (English or herbs) do you feel is the best, or most effective?
5. To treat illness, disease, and injuries, which kind of medicine do you mostly rely on?
  - a) Why? (for either response)
6. Do you grow any herbs for medicinal use?
7. Who in this household knows the most about herbs? Are the children familiar with anything?
8. What do you feel are some important things to do regularly in your life to prevent disease and maintain health?
9. Have you ever visited an Ayurvedic doctor?

## APPENDIX C: RESPONSE CHART

Family #	Uses Herbs	Uses allo	Grows	Youngest Generation Knows	Utilization	Preference
1	Yes	Yes	Yes	Some	English	English
2	Yes	Yes	Yes	No	Herbs	Herbs
3	Yes	Yes	Yes	No	English	English
4	Yes	Yes	Yes	Some	Herbs	Herbs
5	Yes	Yes	Yes	Some	Herbs	Herbs
6	No	Yes	No	No	English	English
7	Yes	Yes	No	Yes	Herbs	Herbs
8	Yes	Yes	Yes	Some	English	English
9	Yes	No	Yes	Some	Herbs	Herbs
10	Yes	Yes	Yes	Yes	English	Herbs
11	No	Yes	No	No	English	English
12	No	Yes	No	No	English	English
13	Yes	Yes	Yes	Some	English	Herbs
14	Yes	Yes	Yes	No	Herbs	Herbs
15	Yes	Yes	Yes	Some	Herbs	Herbs
16	No	Yes	No	No	English	English
17	Yes	Yes	Yes	NA	Herbs	Herbs
18	Yes	Yes	Yes	Yes	Herbs	Herbs
19	Yes	Yes	Yes	Some	Herbs	English
20	Yes	Yes	Yes	No	English	Herbs
21	Yes	No	Yes	Yes	Herbs	Herbs
22	Yes	Yes	Yes	Some	English	Herbs
23	No	Yes	No	No	English	English

24	Yes	No	Yes	Yes	Herbs	Herbs
25	Yes	Yes	Unknown	No	English	English
26	No	No	No	No	Homeo	Homeo
27	Yes	Yes	Yes	No	English	Herbs
28	Yes	No	Yes	No	Herbs	Herbs
29	No	Yes	No	No	English	English
30	No	Yes	No	No	English	Herbs
31	No	Yes	No	No	English	Herbs
32	No	Yes	No	No	Homeo	Homeo
33	Yes	Yes	Yes	Yes	Herbs	Herbs
34	Yes	Yes	No	Some	English	Herbs
Ratio - Majority	25/9 Yes	29/4 Yes	21/12 Yes	6 Yes / 10 Some / 18 No	18/14 English	21/11 Herbs

## APPENDIX D: IMPORTANT HELP AND CONTACTS

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  - phone: 9495205877

## ***Bibliography***

### A. PRIMARY SOURCES

- Cyriac, Personal interview. Mankulam, Idukki District, Kerala. 21 April, 2015.
- Biju, Personal interview. Mankulam, Idukki District, Kerala. 21 April, 2015.
- Thalikaarparimbil, Personal interview. Mankulam, Idukki District, Kerala. 22 April, 2015.
- Thalikaarparimbil, Personal interview. Mankulam, Idukki District, Kerala. 22 April, 2015.
- Margalathil, Personal interview. Mankulam, Idukki District, Kerala. 22 April, 2015.
- Kutta and Omanu, Personal interview. Mankulam, Idukki District, Kerala. 23 April, 2015.
- Unknown**, Personal interview. Mankulam, Idukki District, Kerala. 23 April, 2015.
- Jincee and Gracy, Personal interview. Mankulam, Idukki District, Kerala. 24 April, 2015.
- Julie, Personal interview. Mankulam, Idukki District, Kerala. 24 April, 2015.
- Mary Thomas, Personal interview. Mankulam, Idukki District, Kerala. 24 April, 2015.
- Annakutty, Personal interview. Mankulam, Idukki District, Kerala. 24 April, 2015.
- Molly, Alsa, and Matthew, Personal interview. Mankulam, Idukki District, Kerala. 24 April, 2015.
- Sujidha, Personal interview. Mankulam, Idukki District, Kerala. 24 April, 2015.
- Silji, Personal interview. Mankulam, Idukki District, Kerala. 25 April, 2015.
- Sunny and Jenni, Personal interview. Mankulam, Idukki District, Kerala. 25 April, 2015.
- Mercy, Personal interview. Mankulam, Idukki District, Kerala. 25 April, 2015.
- Bindu, Personal interview. Mankulam, Idukki District, Kerala. 25 April, 2015.
- Bobbie, Personal interview. Mankulam, Idukki District, Kerala. 25 April, 2015.
- Thressamma, Personal interview. Mankulam, Idukki District, Kerala. 25 April, 2015.
- Perna, Personal interview. Mankulam, Idukki District, Kerala. 28 April, 2015.
- Macy, Personal interview. Mankulam, Idukki District, Kerala. 28 April, 2015.

- Valsaima, Personal interview. Mankulam, Idukki District, Kerala. 28 April, 2015.
- Elsie, Personal interview. Mankulam, Idukki District, Kerala. 28 April, 2015.
- Siji, Personal interview. Mankulam, Idukki District, Kerala. 28 April, 2015.
- Savatri, Personal interview. Mankulam, Idukki District, Kerala. 28 April, 2015.
- Jinsi, Personal interview. Mankulam, Idukki District, Kerala. 28 April, 2015.
- Reni, Personal interview. Mankulam, Idukki District, Kerala. 29 April, 2015.
- Xavier, Personal interview. Mankulam, Idukki District, Kerala. 29 April, 2015.
- Jinju, Personal interview. Mankulam, Idukki District, Kerala. 29 April, 2015.
- Molly, Personal interview. Mankulam, Idukki District, Kerala. 29 April, 2015.
- Siji, Personal interview. Mankulam, Idukki District, Kerala. 29 April, 2015.
- Mariakutty, Personal interview. Mankulam, Idukki District, Kerala. 30 April, 2015.
- Smitha, Personal interview. Mankulam, Idukki District, Kerala. 30 April, 2015.
- Varkey, Personal interview. Mankulam, Idukki District, Kerala. 30 April, 2015.

## B. SECONDARY SOURCES

- Abraham, L. (2013). From Vaidyam to Kerala Ayurveda. *The Newsletter* 65 32-25. Retrieved April 5, 2015.
- Dimitrov, V. (2001) Bridging Complexity and Ecology: An Outline of Health Ecology. *Complex Systems* 13 Retrieved April 05, 2015, from *Complexsystems.com*
- Gangadharan, G., & Shankar, D. (2009). Medical Pluralism -- The Challenges Ahead. *Indian Journal of Traditional Knowledge*, 8(2), 181-184. Retrieved April 1, 2015, from <http://nopr.niscair.res.in/handle/123456789/43>
- Ijinu, T., Anish, N., George, V., & Pushpangadan, P. (2011). Home Gardens for Nutritional and Primary Health Security of Rural Poor of South Kerala. *Indian Journal of Traditional Knowledge*, 10(3), 413-428. Retrieved April 28, 2015, from

<http://nopr.niscair.res.in/handle/123456789/43>

Jain, S. (2003). Credibility of Traditional Knowledge -- The Criterion of Multilocal and Multiethnic Use. *Indian Journal of Traditional Knowledge*, 3(2), 137-153. Retrieved April 10, 2015, from <http://nopr.niscair.res.in/handle/123456789/43>

Jeeva, S. Kiruba, S. et al. (2006). Weeds of Kanyakumari District and their Importance in Rural Life. *Indian Journal of Traditional Knowledge*, 5(4), 501-509. Retrieved April 15, 2015, from <http://nopr.niscair.res.in/handle/123456789/43>

Kumar, B., & Nair, P. (2004). The enigma of tropical homegardens. *Agroforestry Systems*, 61, 135-152. Retrieved April 15, 2015, from [http://www.researchgate.net/publication/262860493\\_The\\_enigma\\_of\\_tropical\\_homegardens](http://www.researchgate.net/publication/262860493_The_enigma_of_tropical_homegardens)

Menon, I, & Spudich A. The Ashtavaidya Physicians of Kerala: A Tradition in Transition. *Journal of Ayurveda and Integrative Medicine*. Retrieved 06 April, 2015.

Pal, S., & Shukla, Y. (2003). Herbal Medicine: Current Status and the Future. *Asia Pacific Journal of Cancer Prevention*, 4, 281-288. Retrieved April 19, 2015, from [www.researchgate.net](http://www.researchgate.net)

Shankar, D. et al. Reviving Local Health Traditions. *The Foundation for Revitalizing Local Health Traditions*. Retrieved April 19, 2015.

Variar, P.R. (1985). The Ayurvedic Heritage of Kerala. *Ancient Science of Life* 5(1) 54-64. Print.

Vedavathy, S. (2003). Scope and Importance of Traditional Medicine. *Indian Journal of Traditional Knowledge*, 2(3), 236-239. Retrieved April 10, 2015, from <http://nopr.niscair.res.in/handle/123456789/43>