**TITLE: An ethnographic exploration of oral health among the traditional healers of the indigenous communities in Gudalur, South India.**

**Authors:**

1. **Rajeev B R**, Society for Community Health Awareness Research and Action, No. 359, 1st Main, 1st Block, Koramangala, Bengaluru – 560 034 Karnataka, India. [rajeevbasapathy@gmail.com](mailto:rajeevbasapathy@gmail.com) Ph: +91-9986248078
2. **Mahesh Madhav Mathpati**, [Association for Health Welfare in the Nilgiris, Post Box No.20, Gudalur, The Nilgiris District, Tamilnadu.643 212, India. [dr.mathpati@gmail.com](mailto:dr.mathpati@gmail.com)](http://ashwini.org/new/) Ph: +91 94870 26368
3. **Mahantu Yalsangi**, Association for Health Welfare in the Nilgiris, Post Box No.20, Gudalur, The Nilgiris District, Tamilnadu.643 212, India. [mahantu@gmail.com](mailto:mahantu@gmail.com) Ph: +91 96267 48741
4. **Ravi Narayan**, Society for Community Health Awareness Research and Action, No. 359, 1st Main, 1st Block, Koramangala, Bengaluru – 560 034 Karnataka, India. [chcravi@gmail.com](mailto:chcravi@gmail.com) Ph: +91 94498 70222

**STATE OF CONFLICT OF INTERESTS**

The authors declare no competing interests and did not receive any funding for this study.

**EARLIER RESEARCH**

1. Mishra A, Elias M A, Nambiar D and **Rajeev B.R**. Nested marginalities: Women in healing in South India. In: Local health traditions- Plurality and marginality in South Asia. Mishra A, ed. Hyderabad: Orient BlackSwan. August 2019.
2. **Rajeev B R**. Manathakkali Musings- India’s Local Health Traditions need to be formalised |Down To Earth | July 2017| <http://bit.ly/2A79M9D>
3. [**Mathpati, Mahesh Madhav**](http://researchonline.lshtm.ac.uk/view/creators/icrummat.html); Albert, Sandra; [**Porter, John DH**](http://researchonline.lshtm.ac.uk/view/creators/icrujpor.html); (2018) [Ayurveda and medicalisation today: The loss of important knowledge and practice in health?](http://researchonline.lshtm.ac.uk/id/eprint/4651010/) Journal of Ayurveda and Integrative Medicine, 11 (1). pp. 89-94. ISSN 0975-9476 DOI: <https://doi.org/10.1016/j.jaim.2018.06.004>

**ABSTRACT**

This study throws light on how, under resource constraint, dental pluralism contributes to oral health service delivery in Gudalur, Tamil Nadu, India. This ethnographic study was conducted for over three and a half years and focused primarily on Indigenous healers to understand oral health in the Adivasi context. Our inquiry reveals overlapping symptom conditions as perceived by the healers. Adivasi healers provide local oral health care in the interstitial gaps of the health system. Access to resources and competition with western biomedicine governs the continuity of herbal medicine. We observed that predominantly cultural and structural determinants shape oral health in the Adivasi community. The present oral health system is not able to address these determinants comprehensively. Therefore, local health traditions play an important role at the primary care level in addressing fundamental oral health issues. A community-based, people-centred health system that is cognizant and inclusive of local health traditions, with a shift in focus from dentist-centred to community-oriented oral health systems, is imperative.

**Keywords:** Dental pluralism, Local health traditions, Indigenous oral health, Oral health inequalities

**INTRODUCTION**

This article aims to explore the Indigenous community’s understandings of oral health[[1]](#endnote-1) and diseases in Gudalur, South India. The study tries to understand the beliefs and illness behaviour related to oral health problems in the Gudalur *Adivasi[[2]](#endnote-2)* community, primarily through the perspective of their traditional healers but also other community members. Drawing parallels with the work of Bochi (1), this article will concentrate on oral health services in a resource constraint environment. The use of institutional health care services in the Gudalur Adivasi community is both culturally mediated and influenced by cultural factors and remote access to health institutions because of geographical inaccessibility. Other studies describe how *Adivasis* prefer private providers and traditional healers over government facilities due to the non-availability of services, their accessibility, and long waiting hours. (2) *Panniyas*, one of the *Adivasi* communities observed in this study, have high oral disease levels due to the lack of primary oral health care access (3) and respond favourably to oral health promotional programs. (4) This work fills the gap on beliefs concerning oral health and how traditional oral practices interact with western biomedicine among the Gudalur Adivasi community.

India is home to a variety of traditional health systems practised alongside the western biomedical system of health. The traditional medicine is classified into *Loka* (oral folk form) and *sastra* (codified classical form). (5) The different codified classical health systems currently practised in India are Ayurveda, Siddha, Yoga, Naturopathy, which are native to India, Unani, and Sowrig-pa originated from Persia and Tibet, respectively. The simplified form or the *Loka parampara* means it is accessible and used by everyone. *Loka parampara* is known academically as Local Health Traditions (LHT), also popularly known by other names such as folk medicine and herbal medicine. LHT belongs to a decentralised system of practice where the knowledge of health, prevention, cure, and promotion is known to most of the members of the community. Peoples’ practise and sometimes state support too has legitimised these community knowledge systems. (6)

Many anthropological studies on medical pluralism in India have focussed on understanding the different diseases or system complexes such as bone settings (7) and *dais[[3]](#endnote-3).* (8) There are ethnobotanical studies on oral health in the Indian context (9), but we found no work on dental pluralism. At the global level, very little literature is available, but they reveal that traditional healers played a vital role in primary oral health care. Few studies advocate for the integration of traditional health and western biomedicine for oral health promotion and prevention (10, 11,12) as well as informal dental care was seen as supplementing the mainstream official oral health care. (1)

Overall, oral diseases affect almost all Indians. According to the World Health Organisation (WHO), 36% of 12-15-year-old children suffer from dental caries, while 94% of the adults suffer from dental decay. 19% of the elderly in India do not have any teeth (13), and a recent review found a skewed distribution in dental caries but also a decline in the last 25 years. (14) Dental caries was 2.5 times higher among children in slum areas compared to rural areas. (15) Rural India faces a roadblock to oral health care in terms of accessibility, availability, acceptability, and affordability, especially in the Indigenous areas where health-seeking behaviour among the Indigenous communities are driven by the cultural ethos and influenced by local beliefs. Only 9.9% of the Scheduled Tribes (ST) women have undergone an oral cavity examination. (16) Few studies have identified high oral health needs among the Indigenous populations in India. For instance, one study reported high dental caries and teeth extraction as the most necessary treatment among the Bhil community (17) in western India. Whereas, Santhals in Northern India have poor oral hygiene and periodontal status. (18) Steep terrain, isolation, low literacy level, socioeconomic status, and cultural practices are attributed to a higher prevalence of periodontal diseases and poor oral hygiene status among the Bharia in central India. (19)

Indigenous communities are among the marginalised groups in India, make up to 8.6% of the 1.2 billion according to the 2001 census. They are referred to as an ST by the Constitution of India and identified by a set of characteristics such as indications of distinctive culture, shyness of contact with the community at large, geographical isolation and backwardness. (20) Health indicators among the ST are poor. Access to health care is poor among the ST with only 30.8% of them are covered by insurance, only 26.7% of the ST women have met any health worker, 76.7% of the ST women reported have a big problem accessing medical advice or treatment. Infant Mortality Rate for ST was around 27% higher than the total population. A high-level committee on socioeconomic, health and educational status of tribal communities reported that the ST suffer predominantly from the diseases of underdevelopment, diseases commonly seen in the ST population and diseases of modernity[[4]](#endnote-4). The social determinants of health are also weak; for example, very few ST households have access to an improved source of drinking water and sanitation. (21)

**METHODOLOGY**

**Study setting**

This article is the outcome of the fieldwork carried out between April to November 2015, May to November 2016, and May to July 2018, with regular visits to Gudalur in between. This inquiry started with the first author (RBR) who was a Community Health Fellow at the Society for Community Health Awareness Research and Action (SOCHARA), and went to Gudalur to understand the community based primary health care model for the Adivasis. The initial field immersion led to reflect on a basic yet complex question, ‘What do the Adivasis do for their oral health issues?’ The first few months of introspection encouraged us to pursue this question seriously, and it evolved into a study.

Gudalur is a taluq[[5]](#endnote-5) in the Nilgiris district in the South Indian state of Tamil Nadu. Gudalur is at the tri-junction of Karnataka, Kerala and Tamil Nadu states. The topography includes tea and coffee plantations and Mudumalai Tiger Reserve, which is a predominantly moist deciduous forest and part of the Western Ghats range of mountains in the Nilgiris Biosphere Reserve. The Adivasisliving in the Gudalur region belong to four different groups (*Mullukurumba, Bettakurumba, Panniya,* and *Kaattunayaka*), each one with their own identity and culture. The Indian government criteria[[6]](#endnote-6) further classify these communities into vulnerable tribal groups. *Mullukurumba,* a farming community is the smallest among the four and were known for their hunting and archery skills. *Bettakurumbas* used to practice shifting cultivation, *Kaattunayaka* known for their magico-religious practices, and *Panniya* comes in the lower rung among the Adivasi hierarchical society. (2).

**Positionalities**

The fieldwork, which included interviews and group discussions, was carried out by the first author, who is a dentist from an urban area with training emphasised on the western biomedical evidence-based and epidemiological framework is trying to learn qualitative participant observation research. MM and MY facilitated the interviews and guided the fieldwork while RN mentored the entire project. A local civil society organisation[[7]](#endnote-7) which is involved in the *Adivasi* development for the past three decades supported this study.

WHO defines Traditional healers as “Traditional healer services refer to the application of knowledge, skills, and practices based on the experiences Indigenous to different cultures. These services are directed towards the maintenance of health, as well as the prevention, diagnosis, and improvement of physical and mental illness. Examples of traditional health service providers include herbalists and faith healers”. (22) *Adivasi* individuals who identify themselves as local traditional healers were interviewed. The practitioners of healing among the *Adivasis* can be anyone in the community: mothers at home, men working in the fields, older people. The healers possess practical knowledge of using the appropriate medicinal plant sources to treat illnesses. Their knowledge is linked to belief and directly related to the natural settings around them. The WHO definition initially guided our investigation to identify healers within the *Adivasi* villages who exercise close social relationships with the rest of the villagers.

We met with twenty-four healers on multiple occasions. (Table 1) We interviewed nine women and fifteen men healers. Healers live and practice traditional medicine in the villages called *paadi,* and they belong belonging to any of the four *Adivasi* communities. Healer’s primary occupation was not healing, as most of them worked in farms as labourers or had their farms involved in sustenance farming. They provided healing services whenever they were asked for. Both men and women in the *Adivasi* community practised it. Healing tradition is called *pacchamarundu[[8]](#endnote-8)*  in the *Adivasi* languages, and it also included performing rituals and offering prayers to the *Adivasi* gods.

|  |  |  |
| --- | --- | --- |
| ***Sl No*** | ***Adivasi Community*** | ***No of healers interviewed*** |
| ***1*** | *Panniya* | *6* |
| ***2*** | *Mullukurumba* | *2* |
| ***3*** | *Bettakurumba* | *7* |
| ***4*** | *Kaattunayaka* | *8* |
| ***5*** | *Non-Adivasi healer[[9]](#endnote-9)* | *1* |

*`*

*Table 1: Details of the healers*

**Ethical considerations- research process that enables action**

Ethical clearance was obtained from the SOCHARA Institution, Scientific and Ethical Committee at Bangalore, India. We also presented the research proposal before the *Adivasi* community members at the local organisation and sought permission to carry out. The community representatives were actively engaged, and the progress was briefed at regular intervals at the monthly meetings of the local organisation. Obtaining permission to carry out the research was challenging. The community members had to be briefed about the purpose of the study, as most of them perceived it to be a documentation of traditional knowledge. The research team met the community representatives’ various times to discuss how the knowledge generated from this study could be utilised to understand oral health issues and challenges to deliver better services and also engage the healers within the existing health system. The local organisation also requested us to assist the local organisation in setting up an ethics committee to help community members in the research conduct and decision-making process of granting permission for research proposals. The guidelines for social science research (23) were used to help this process. The Cuenca declaration on ‘Research for People’s Health’ envisages active community participation-

*“Research should bring about social action by the mobilisation of people and communities as participants and collaborators. Biomedical research should be integrated with social research….Research should involve dialogue between investigators and representatives of communities as well as the people directly”* (24)

Reaching out to the healers and convincing them to talk about LHT was another challenge. In one instance, one elderly female healer was very timid and hesitant to talk to the interviewer. Her husband goaded her, but it was futile. With much convincing, we were able to talk to her, but she showed signs of disinterest and uneasiness. Therefore, the interview was stopped.

Later, in one of the group discussions, one of the elderly male Panniya healers, Maran, aged 68, and a farmer was curious about the next plan after data collection. He suggested organising children’s camp with healers where transect walks with children at the edge of the forest and village surroundings to identify the herbs and explain the benefits. He went on to say, “*We should teach our children and make sure they also know it (herbal medicine).”* Many such outreach camps were held with the Adivasi children to develop interest in the folk medicine of the Adivasis.

This study focussed on communitising the research with the support of the local organisation to bring about participant action. Questions such as how to mobilise the community to turn towards locally available and relevant health tradition was a daunting task. The most significant output of this participative action research was documenting the traditional medicinal knowledge of the Adivasi community. Maran had expressed his concern about the medicinal knowledge, ‘*this (medicinal knowledge) has to be preserved. We have to write it down; otherwise,* *it will be lost. If healers do not pass it to their children and they (healers) die, then it will be lost forever”.* With a healer passing away, an entire generation of knowledge has passed away, too, unless an effort to document it is made.  
A threat to intellectual property rights was perceived earnestly, and many more discussions with the community members resulted in an ethnobotanical survey. The result of the survey is a bilingual (Tamil and English) field guide book, which will be registered with the state biodiversity board to safeguard against commercially motivated activities, especially patenting.

**Methods**

It was easy to approach a few healers, while it took us much time to build their trust and confidence. It took several weeks to a few months to establish a good rapport. The help

of the local *Adivasi* coordinators facilitated the meetings and helped to build a relationship.

We chose an ethnographic approach to understand multiple truths and the lived experiences of oral diseases as well as its causes and impact on day to day activities. The data was triangulated with those drawn from everyday conversations with other health professionals like specialist doctors, junior doctors, health workers and dentists, school teachers, and the community members. (Fig 1) Dentists provided their views on the *Adivasi’s* oral health perceptions, beliefs, and behavior, awareness of oral health, the challenges to access services, and the use of traditional medicine at home. Observations at the healers’ homes, community facilities, schools within the region, and the meetings of the local organisation were supplemented by non-structured in-depth interviews with local traditional healers. Few healers, community elders, and other members were invited for focus group discussions to examine the internal consistency of the information provided by the interviewees and understand the dimension of their understanding of health institutions and the process of referral to any health institution.

Fig 1: Participants involved in the study

The local organisation facilitated the meeting of the healers involved in their outreach programs. Oral and written informed consent was obtained in the local languages after explaining the intention of the study[[10]](#endnote-10). Most of the interviews were audio-recorded and transcribed to English. A volunteer from the same local organisation who had a better knowledge of the Indigenous languages helped us in translation. In July 2018, we came across *Palluvali chedi* (Lit-toothache plant Sci name- *Acmella oleraece*), a herb used to treat a toothache that Maran had mentioned at the beginning of fieldwork in 2015. In Maran’s words, this herb ‘miraculously’ reduced the tooth pain, and this had sparked more interest among us to know more about this herb. We met Maran many times later but could rnot discuss this. In early June 2018, Maran passed away before we had the chance to know more about the toothache plant which he had described. In July 2018, in one of the village visits, we serendipitously discovered *Acmella oleraece*. Kethan, a 59-year-old Bettakurumba farmer, showed us the *palluvali chedi* while walking through a paddy field. Three and half years of intensive fieldwork with various people in the community setting came to a saturation point when we found this herb, and thus it was decided to end the fieldwork.

**ORAL HEALTH IN THE *ADIVASI* CONTEXT**

We present a picture of oral health in the *Adivasi* context located in many layers. In the section’ herbal medicine in changing times’, we highlight the local particulars and background that informs about the oral health in *Adivasi* communities; in ‘Symptom complexes,’ we talk about the leading oral health problems healers treat and the issues they face and in ‘Oral health care at crossroads,’ we then link these to the reports from other health care providers. In the last section, we analyse emerging themes in the *Adivasi* context on how oral health inequalities are situated.

**Pacchamarundhu (Herbal Medicine) in the changing times**

Here we present many themes related to the local health traditions concerning the healers’ perspective of their position in society, mechanisms of knowledge acquisition, healing methods, elements of preaching and rituals, future and continuity of the tradition, people’s attitudes, and differences between western biomedicine and their system.

Healers’ perspective of their position in society

The healers were known by few terms but not limited to any one specifically. The *Adivasis* referred to them merely as *avar marundhu kuduppaar*. *Avar* is a gender-neutral term used in a respectful context to address a person. *Marundhu kuduppaar* refers to who practiced herbal medicine. In simple terms, it meant to one who gave medicine. Sometimes the word *marundhu seivar* was also used, which meant the one who prepared medicine. We also came across the word *Vaidyar* being used to denote a healer. The healer did not just treat diseases. He/she was given importance within the commanded *moraippu* (reverence), and the position claimed obedience not only in the family but also in the *paadi* (*Adivasi* hamlet) and the confines of the hamlet boundaries. The social position is localised to the area. This meant that his or her position was also relatively higher than other *Adivasis.*  The other forest-dwelling non-*Adivasi* communities like *Chettis* also respected the healers. The healeralso sometimes was a *kaarnavar[[11]](#endnote-11)* and would be invited by other non-*Adivasi* communitiesfor both auspicious and mourning ceremonies to perform rituals.

Mechanisms of knowledge acquisition

The healing was learned by observation, starting as an apprentice under the guidance of the teacher, who is usually a parent or grandparent, or sometimes under multiple members of the family. The tradition has been practiced for generations and often familial and passed on from *Paattan-paattan[[12]](#endnote-12)* (generation to generation) time. However, there have been no written records. All the healers learned it from their parents or grandparents since their childhood, except one healer who started learning a few years back even though his parents and their parents were practicing it.

Healing methods

The practice of medicine in many ways similar to that of the modern doctor. They usually did not go to a different place and treat. Whoever comes to them are treated. There is a mutual understanding between the healer and the patient, and the relationship is personal. The treatment outcome is uncertain and repeated and tried for a variety of herbal medicines. Maran told us his strategy if the treatment did not work:

*if someone like that comes to asking for me, I will give them some medicines. Then I will say, “If it does not cure, then come again! If it does not heal, come for the second time.” And if it does not heal by then, I will ask them to see another person…there are chances that they will get well, and some people no matter who gives, there will not be any healing. (Rajeev, 06-11-2015)*

When it comes to paying for the services, it is more of a personal offering and above the service provider and consumer relationship. The patients would offer whatever they can afford, and there was no compulsion to pay. Often, the service was returned in kind. Like in the case of Badichi, a 66-year-old Kaattunayaka female healer: ,

*If they wish, they can keep kaanike (offering) or something at that time. Some people give saree and a shirt and a tundu (waistcloth) to tie around for my husband, and some people give us nelavelakku (lampstand) and keep it over the ground. However, we will not take it in our hands directly from their hands. It is kept over the ground, and we take. (Rajeev, 03-07-2018)*

Elements of preaching and rituals

Prayers are an integral part of the healing with the healers. The rituals and timing of the prayers vary from one healer to another. Some offer prayers to their *daivam* (god) in their house before heading out to get herbs, while some offer in the forest before cutting the herbs. Some healers advise the patients to pay a visit to the temple, while Jayakumara a young 29-year-old male Bettakurumba healer had a different take on it:

*I do not offer any particular prayers, but I think of the god and pray in my mind that this medicine should work. I do not do anything openly like offering prayers to kavu (sacred grove), but I just pray in my mind. (Rajeev, 14-06-2016)*

There are no particular days to give or not give medicine. However, the timing of taking medicine was important. According to Keta, the only healer from his Bettakurumba village,

*there are no restrictions to give medicine on the new moon or some days like that. But you must take before the sun rises. It is a practice. (Rajeev, 18-11-2015)*

*Differences with western biomedicine*

The healers’ practices differ from western medicine. They believe that western biomedicine’s effect is short-lived, while traditional medicine takes time to show its effect; it provides a lasting effect. Few healers agreed to go to the hospital for a few ailments, but there is a concern about the inadvertent use of hospital services even for small illnesses that could be treated at the household level. Leshmi, a middle-aged woman healer from the Mullukurumba village complained:

*In our community, people are aware that they should go to the hospital. Herbal medicine is also essential. But now for everything people go to the hospital. We have many herbal medicines. First, they have to use this and then go for that. (Rajeev, 04-07-2018)*

Some of the healers have also worked as health workers. The healing experience with health worker training is additive and has brought positive developments. It becomes an important mechanism to deliver health services because a *vaidya* or a *karnavar* is held in a high position, says Krishnakumar, the *karnavar* from the Panniya community and further adds

*When I was here (as a health guide), many people used to come here with their problems, even if it was their family problems like marital problems. They would come and ask, “there is a problem; please do something.” I go and perform rituals. Then they will feel better. (Rajeev, 14-10-2017)*

Future and continuity of the tradition

The future of thesehealing traditions seems uncertain. Not many youngsters are interested and only a few have picked up. A strong belief among the healers is, the healing is considered an ancestral property, and a common consensus exists on not letting it go off. Some healers maintain secrecy about disclosing the information about herbs and preparation. However, few people spend more quality time learning, practicing, and disseminating it to the next generation. Some fewer healers are engaged in the intergenerational transfer of knowledge. All of this affects the future practice of Indigenous healing. Healers think that although *Adivasis* acknowledge the tradition, the usage has reduced after hospitals came up. For example, hospital-based deliveries have increased in recent years after the introduction of public health programs targeting institutionalised deliveries.

By far, the biggest challenge faced by healers is the availability of herbs. Access to herbs is challenging. The creation of boundaries around the forests like fencing and elephant trenches have created a physical barrier with full restriction of entry by humans. The political action where the boundaries emerged in the interest of wildlife protection across the country and consequently the *Adivasi* communities were rehabilitated out of the forest. The restriction to the forest has caused a direct disconnect with the medicinal plant resources. Loss of forest cover and subsequent rise in tea plantations, use of chemicals in the plantations, lack of space to grow herbs are some of the reasons quoted by Maran.

*We do not grow the herbs. When we need medicine, we get it from the forest. We have to go without being seen (by the forest department officials). Now it is difficult.*

**Understanding oral health conditions or symptom complexes**

The understanding of the anatomy and physiology of oral structures is elusive from a non-*Adivasi* perspective. Nevertheless, the terms such as mouth, teeth, tongue, jaws, and bone are collectively used regarding oral health. *Vaayi* is the term used for the mouth, *pallu* for teeth, *naakku* for the tongue, *elumbu* for bone are used in the local dialect of Tamil[[13]](#endnote-13) , which is spoken by all the *Adivasi* communities. The vernacular terms are given more importance here because they capture the emotion attached to disease or condition or even a structure.

Oral hygiene refers to cleaning and maintaining of the teeth and mouth. The cleaning and brushing of teeth are a daily routine and is carried out in the morning by everybody, reports Maran. He also reported that although the knowledge about cleaning teeth in the night before going to bed is new to the community, it was rarely practised. Similarly, toothpaste and toothbrush have come into their lives only in recent decades. Until then, *aduppu kari* (charcoal) was used, and some of the *Adivasis* still follow it. Charcoal preparedfrom *Nilagiri* (Eucalyptus sp), *Thega* (*Tectona grandis*), *Kaathaadi* (*Grevillea robusta*), *Maanga maram* (*Mangifera indica*)*, Eeti maram* (*Dalbergia sissoo*), *Edala maram (Olea dioica)* and Paddy husk was used. *Karimathi* (*Terminalia crenulata*) *and Nugge (Moringa oleifera)* are not used because they cause mouth ulcers. Charcoal was powdered and mixed with salt and brushed using the forefinger. The detailing of the ingredients of the dentifrice is given importance. For example, salt is used along with charcoal. The following quote by Krishnan, a 25-year-old school teacher at the *Adivasi* School illustrates the reason behind why salt is added:

*What we should think about is what should be used when. Why we use salt is because, if there is a germ in the tooth, then that will die. That is why we use salt. Even in paddy husk, we use salt along with it. (Rajeev, 13-08-2015)*

While everyone acknowledged the use of toothpowder and toothpaste by the *Adivasis*, toothpaste is equated to Colgate[[14]](#endnote-14) and is vernacularly used in communicating by most people. There is a transition from the use of homemade charcoal to commercially available dentifrices. Leshmi told us:

*Earlier, there was no toothpowder or Colgate. Only in the last 30 years, our Adivasi people have started using Colgate heavily. Most people now do not use charcoal. (Rajeev, 13-12-2017)*

The use of *vetthalai pak* (betel quid)[[15]](#endnote-15) is a culturally accepted norm among the *Adivasis*. Some people consume it only after meals to ward off the smell of the breath. It is believed to ward off hunger. (2) Some of the *Adivasis* also chew dried tobacco leaves along with the quid. This habit is commonly seen among the adults and the elderly, while the young adults and adolescents show a liking towards commercially available tobacco sachets. The adverse result of chronic chewing of the betel quid is known, and its habituation was attributed to the family milieu describes Mani, a 43-year-old male Bettakurumba healer :

*If parents were educated, and if the children were chewing, they would say, “You should not chew it.” No one tells them. They say, “It is a child only” and would praise them…whatever parents do, children also learn. (Rajeev, 20-06-2018)*

Toothache is the most common complaint with which people presented to the healers. Dental caries is also understood as the reason behind a toothache. *Kurumolagu* (Piper nigrum) and *Nelli Pattam* (bark of *Phyllanthus embilica*) and *Lavangam* (*Syzygium aromaticum*) are used to reduce the pain in the teeth by most healers.

Swelling in the oral cavity is also a common complaint reported to the healers. Healers explained the associated symptoms like inability to open mouth and chew food. Dental caries is not seen in all, but healers notice a rise in dental caries among the children, compared to their childhood times. They identify it as a black discoloration on the tooth. It progresses to a level, what they describe it as ‘*eating away the entire tooth.’* The reason for dental caries is observed as eating sweets. Maran describes the cause of dental caries as

*.. in some people, there will be a gap between teeth. There will be sali (calculus) in the gap between the teeth, which causes sothu (decay)…. But, in some people, there could be some problem in the elumbu (bone) itself, or if there is less raktham (blood) if there is less koluppu (fat) which can lead to many diseases. (Rajeev, 14-09-2016)*

Poor oral hygiene results in the weakening of gingiva and periodontal tissues. Shivan, a Panniya healer, who is in his mid-fifties spoke about the awareness of brushing teeth twice daily

*That is because of eating vetthalai pak (betel quid), and also not brushing teeth properly, and not brushing before sleep. People only brush their teeth in the morning (Rajeev, 01-07-2016)*

Cancer of the oral cavity is noticed often, and Ketan reported that he is coming across more cases recently:

*It begins as Vaayi punnu (ulcer) and grows to become cancer and complain of an inability to eat*. *The reason for its occurrence is chewing a lot of vettalai pak (betel quid), smoking cigarette and beedi[[16]](#endnote-16). Cancer is also seen in those who do not eat vetthalai pak or drink saarai (Liquor). In this case, it could be because of raktham sambandham pattadhu (Blood-related). (Rajeev, 21-05-2016)*

When it came to extracting teeth, there was apprehension and fear associated with the extraction of teeth. This fear let them leave the tooth until it fell off. This belief has evolved to get the teeth extracted because of the belief that rotten teeth will spread to other teeth as reported by Maran:

*no one was taking the tooth out. When it becomes rotten, it will fall on its own. Scared to take out. Now they have started doing it and feel if they do not take out the bad one, it will spread. (Rajeev, 14-09-2016)*

Loose teeth were removed off by themselves and were seen as a pain reliever, as explained by Maran.

*If there was a loose tooth, they will only make it much looser and remove it out. If they knew how to remove it, they will grab it and remove it slowly. Then there will be a little relief. (Rajeev, 14-09-2016)*

**ORAL HEALTH CARE AT CROSSROADS**

The oral health delivery system is still following the inverse square law in India. (25) The health system operates on a biomedical model that causes cross-cultural conflicts that may mediate with accessibility, availability, and acceptability. According to the Central Bureau of Health Intelligence statistics, India has 5278 dentists working at Government hospitals. (26) There is no data available on the number of dentists working in a rural area.

Similarly, there is no census data of the healers who treat oral diseases in India. The Dentist-Population ratio is 1:10,120.85, and dentists served only 59% of the Indian population. (26) Traditional healers and professional dentists co-exist in their own space with little or no interaction on the professional front. With an acute shortage of professional dentists, healers play a lateral role in filling the gaps in the health delivery system. (1) Providing oral health care in such a situation becomes more challenging and therefore requires a strong political priority.

Healers are aware of their limitations and operate at the periphery of the health system. Legitimacy issues, lack of interest among the younger generation in the healer families are some of the dire issues questioning the continuity of the tradition. In terms of oral health, the care provided by them is at the primary level, where they provide herbal treatments to underlying oral health issues. For eg, some healers and elders in the community remove extremely loose teeth in children.

During the fieldwork, we met with Vimala, the only non-*Adivasi* healer in our study. She had accompanied her relative to the local *Adivasi* hospital, who was suffering from severe tooth pain. Dr. Sanju, a 34-year-old young male dentist who has been working the *Adivasi* community hospital for almost a decade, on examination of the oral cavity, reported a grossly decayed upper left first molar which required immediate extraction. Vimala told us about her healing practice during her relative’s treatment, and we followed up with her later. Vimala did not extract teeth since she feared the sight of blood. Kamala is in her early 50s and works as a tea picker in a nearby tea plantation near Gudalur town. She and other healers asked the patients to visit a dentist if they required further treatment or if they could not figure out. This example signifies the integration of health systems in practice.

Take the case of a Panniya elderly healer, Maran. He would grind the leaves of *Acmella oleracea* to a pasty consistency and ask the patients to apply near the paining tooth. This, he said, gives relief from the pain and also would give time to take off from work and arrange for money to visit the dentist at the community hospital few miles away, which he strictly advised. The knowledge of how much care to provide and what to do in case of those things that they cannot manage is crucial for achieving smooth service delivery without coercion. The primary care provided is affordable, available locally, adaptable to the growing demands, and acceptable to the *Adivasi* community. There is cultural ownership of the local health tradition, and the sense of ownership of the healing tradition was ubiquitous among the Gudalur *Adivasis*.

The professional dentists were empathetic to the increasing oral disease burden among the *Adivasis*. Dr. Sanju noticed a gradual increase in dental caries, particularly among children. Maran also made a strikingly relevant point related to the increase in caries. The number of sweet candy and chocolate consumption has increased gradually in the last three decades. It is coinciding with improvements of the *Adivasis’* economic conditions, and consequently, accessibility and availability of sugar substances contribute to the silent epidemic of non-communicable diseases, which includes oral diseases also. Another dentist, Dr. Manjula, a 30-year-old female dentist who also worked at the same community hospital, explained her strategy of treating oral conditions that require invasive interventions. She would admit the patients as inpatient and treat them. She did this mainly to prevent the attrition of the patients because of the multiple visits involved in dental treatments. She said, ‘*patients will not return if they have to visit 3-4 times in case of root canal treatment*’. The local organisation for *Adivasi* development also had a community health insurance where inpatient treatment costs were covered. A separate dental treatment funding came from another foundation. Dr. Manjula reported that despite the financial support, access to oral health treatment among the *Adivasis* remained low because of little awareness.

Similar to low awareness, fear of dental treatment was another reason for low access. For example, Uma, a 23-year-old young *Adivasi* school teacher who complained of recurring pain in the lower right back teeth region, approached the first author for her tooth pain, and a deep carious lesion in the lower right second molar was observed. The first author asked her to visit the dentist urgently, but she did not go. Uma was scared of the instruments and the sounds of the dental clinic. Uma had earlier accompanied children from the school to the dental clinic and witnessed the children’s reactions to tooth extractions. This dental phobia requires conditioning to unlearn associated fear and modify behavior. The junior medical doctors also complained that many patients are visiting them for dental complaints instead of a dentist. They mentioned that the patients would demand an analgesic because the dentist would insist on treating the oral disease, which meant inviting fear and anxiety.

In such a socio-environmental paradigm, it is vital to consider the cultural influences of oral health for treatment at the chairside to prevent or mitigate oral diseases in the community setting — particularly that of local health traditions, an essential and crucial cultural part of the *Adivasis.* The Indigenous communitieshave an informal and insufficiently organised health system. (27) but can offer solutions to bridge the gap in growing oral health inequalities. At the outset, Indigenous health systems enjoy limited financial support and lack specific strategy but are culturally defined, resilient, and responsive to the local health needs. They are inclusive, locally relevant, and use natural and locally available materials. Health forms an integral part of all the dimensions of well-being and not considered a separate entity. The cultural perceptions of professional mainstream dental care need to be considered in providing better treatment options. At the delivery level, the health system does not reach the Indigenous communities in the hilly regions. LHT constitutes an informal health system at the local village level, and people often seek healers help for common diseases.

Oral health in Indigenous communities is studied less. The beliefs and illness behavior related to oral health problems were studied in the *Orang Asli* Indigenous group in Malaysia. The traditional healer, who is called *Tok Halaq’s* role in prevention and health promotion, was crucial. (10) To understand this phenomenon of health culture among the *Adivasis,* we usedgrounded theory. Going into the field with a pre-set of questions to find answers would not work to understand health traditions that are intertwined in a complex process that result in the well-being of the community rather than an individual. Oral health is not distinctly seen from the rest of the body’s health as one of the healers complained to us about our worldview of the separation of oral health and the body as different entities. Scambler noted that symptoms that present in a “striking” way (such as a toothache in this study) are more likely to be interpreted as illness and more likely to receive prompt attention than those which present less dramatically. However, given the number of symptoms and illness experienced by people, it is apparent that most are treated by self-medication. Most families have some knowledge of how to treat common illnesses. (28) This also applies to treat toothache in the *Adivasi* community. Dental caries, tooth pain, and swelling in the oral cavity were the commonly noticed symptom complexes. One possible reason could be because dental caries and toothache was the most easily recognised and can significantly disrupt one’s life routine.

For periodontal disease, anecdotal reports on its high prevalence among the adults have to be explored. Although there is knowledge about improper oral hygiene and its causes, the proper knowledge about prevention and promotion is lacking. This is due to the low impact of periodontal disease on their routine life as compared to a toothache due to caries. This is also coupled with the availability and affordability of herbal oral hygiene aids such as Neem twigs. The availability of toothbrushes and toothpaste is still out of reach for the *Adivasis.*

Oral hygiene is only limited to cleaning teeth. There was no mention of other hygiene measures such as gargling and tongue scraping, as told by Uma, the young teacher. The extensive use of betel quid and tobacco is another cause of poor oral hygiene. It is not surprising that oral cancer is commonly encountered in this community with the common habit of betel quid chewing laced with tobacco, lime, and betel nut. These are known risk factors for oral cancer and pre-cancer lesions since betel quid chewing was extensively practised in this community. The awareness of oral cancer is essential; self-examination on how to detect early signs of oral cancer should be taught to the healer and the community in general. A survey of oral cancer/pre-cancerous lesions within the community will help to know the incidence and the determinants.

**Conclusion**

Oral health is perceived to be less critical by the Gudalur *Adivasis* while competing with several dire issues. The locally relevant LHT is filling the gap within the health system, where the state has not been able to provide care. It is interstitial compared to Bocchi’s study, which was interstitial and translocal. (1) Integrating healers into the health system will play a crucial role in solving dental care shortage in remote forest-dwelling societies where access to health care is exigent. The interaction of the care provided by the local healing traditions and the inadequate state support in health and other social issues has resulted in ‘local biology’ effects where oral health inequalities arise from differing biological factors as well as culture, diet, environment. (29) Therefore a culturally appropriate oral health program that takes into account all these factors is essential to reduce oral health inequalities. An earlier recommendation has been made to develop an integrated model that allows different systems to co-exist harmoniously. (30)

In a community where health facilities, including dental treatment, are not easily accessible, alternative care should be made available, especially in cases of emergency pain relief. The healer could be involved in promoting healthier oral self-care practices. Health promotion strategy should focus on oral health placed within the general health framework. Therefore, a healer could play a role in primary oral health care. Addressing social determinants of the *Adivasis*, for instance, access to safe drinking water and other domestic purposes involved strong political support and, in such conditions, advocating for brushing their teeth twice a day is a challenge. For an *Adivasi*, there were more pressing basic needs to be fulfilled, such as getting adequate food, clothes, and a better housing condition. Buying toothbrushes and toothpaste must be very low in their order of priority. Hence the relevant agencies need to improve the overall economic, educational, and social needs of the Gudalur A*divasis*.

This ethnography study focussed on the *Adivasi* healers who provided oral health care relevant to the local needs at the periphery of the existing health care system. The diagnosis, treatment, and prognosis of oral diseases are affected by the existing oral health infrastructure, including LHT. The structural and social determinants of oral health need to be taken into cognisance in the entire process of understanding the health-disease spectrum. As mentioned in the London Charter on Oral Health Inequalities, LHT is a local and sustainable solution that should be integrated into a unified approach to solving oral health problems along with other social issues to empower the communities. (31) The current model has to be re-worked to become more inclusive, sensitive, and culturally responsive to all communities. Community-based health systems inclusive of local health traditions make a responsive people-centered health system.

**Notes**

WHO defines oral health as “a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual’s capacity in biting, chewing, smiling, speaking, and psychosocial well-being.” We use the term oral health instead of dental health as ‘dental’ restricts to teeth alone as compared to oral health, which includes teeth and the entire oro-facial structures. See The World Oral Health Report 2003.

2 The term means, literally, first settlers; it refers to Indigenous communities. Henceforth, Adivasi will be used in the paper

3 Dai is a colloquial term for Traditional midwives

4 Diseases of underdevelopment- Malnutrition, communicable diseases, maternal and child health problems; diseases commonly seen in the ST population- Sickle cell disease, animal bites, accidents, and diseases of modernity- hypertension, high consumption of alcohol and tobacco and stress.

5 The administrative unit within a district consisting of a group of villages

6 Pre-agriculture level of technology, stagnant or declining population, extremely low literacy and a subsistence level of economy

7 Adivasi Munnetra Sangam, Gudalur which includes ACCORD, VBVT School and ASHWINI Hospital (www.adivasi.net)

8 This healer was accidentally discovered and agreed to be interviewed

9 Herbal Medicine

10 The first author’s command over the Local languages- Tamil and Malayalam were good. He sought the help of the Adivasi coordinator with vernacular words.

11*Karnavar* is a religious head in the *Adivasi* community

12Practised beyond the grandparent’s time till date

13Official language of Tamil Nadu state

14Popular commercially available toothpaste

15Areca nuts are placed, and lime paste is smeared on the betel leaf folded neatly into a quid.

16*Beedi* is an Indian cigarette filled with tobacco flake and wrapped in a *Tendu* (*Piliostigma racemosum*) leaf tied with a string at one end.

**Acknowledgments**

The research team wants to thank the healers and *Adivasi* community members of Gudalur as well as the staff members of SOCHARA, ACCORD, VBVT, ASHWINI, and AMS who cooperated during the field visits. We would like to express our sincere gratitude to Giovanni Bochi for providing insightful comments while drafting the paper.

**References**

1. Bochi G. Exploring Pluralism in Oral Health Care : Dom Informal Dentists in Northern Lebanon. *Med Anthropol Q*. 2014; Vol 29 (1): 80–96. DOI: [10.1111/maq.12066](https://doi.org/10.1111/maq.12066).
2. Gandhi S, Verma VR and Dash U. Health Seeking Behaviour among Particularly Vulnerable Tribal Groups : A Case Study of Nilgiris. *J Pub Health Epi.* 2017; Vol 9(4): 74–83. DOI: 10.5897/JPHE2017.0911.
3. Iris V, Joseph J, Janakiram C and Mohamed S. Oral Health Status and Treatment Needs of Paniya Tribes in Kerala,” *J Clin Diag Res.* 2016. Vol 10 (10): 12–15. DOI: [10.7860/JCDR/2016/21535.8631](https://dx.doi.org/10.7860%2FJCDR%2F2016%2F21535.8631).
4. Vivek S, Jain J, Sequeira P S, Battur H, Tikare S and Amit M. Understanding oral health beliefs and behaviour among Paniyan tribals in Kerala, India,” *J Int Oral Health*. 2012; Vol 4 (1): pp. 23-28.
5. Shankar D. Agenda for Revitalisation of Local Health Traditions, New Delhi: Voluntary Health Association of India; 2001.
6. Unnikrishnan P and Hari Ramamurthy G. Local Health practitioners in India, In: Abraham V S (Ed), Medical Pluralism in Contemporary India, New Delhi: Oriental Blackswan; 2012. pp. 279-304.
7. Lambert H. Medical Pluralism and medical marginality: Bone doctors and the selective legitimisation of therapeutic expertise in India. *Soc Sci Med*. 2012; Vol 74: 1029-1036. DOI: 10.1016/j.socscimed.2011.12.024.
8. Ward KS. Women, and Health in Rural India: An Anthropological Perspective,” Oberilin College, University of Ohio; 1988. <https://etd.ohiolink.edu/rws_etd/document/get/oberlin1316525608/inline>.
9. Deka K and Nath N. Application of Local Health Traditional Knowledge in Oral Health and Hygiene among the Ethnic Tribes of Nalbari and Barpeta Districts of Western Assam (North-East India). *Int. J. Pure App. Biosci.* 2014; Vol2 (5):107–14.
10. Saub R and Jaafar N. A Dental-Anthropological Study of Health and Illness Behaviour among Orang Asli of the Semai Tribe: The Perspective of Traditional Healers,” *Med J Malay*. 2001; Vol 56 (4): 401–7.
11. Agbor AM and Naidoo S A Review of the Role of African Traditional Medicine in the Management of Oral Diseases, *Afr J Traditional, Complemplementary and Alternative Medicine*. 2001; Vol 13 (2): 133–42. http://dx.doi.org/10.4314/ajtcam.v13i2.16.
12. Agbor AM and Naidoo S. Knowledge and Practice of Traditional Healers in Oral Health in the Bui Division, Cameroon, *J Ethnobiology and Ethnomedicine.* 2011;Vol 7 (6):1-8. DOI: [10.1186/1746-4269-7-6](https://doi.org/10.1186/1746-4269-7-6).
13. WHO. The World Oral Health Report, 2003. Continuous improvement of oral health in the 21st century- the approach of the WHO Global Oral Health Programme, Geneva: World Health Organisation, 2003a.
14. Mehta A. Trends in Dental Caries in Indian Children for the Past 25 Years Trends in Dental Caries in Indian Children for the Past 25 Years. *Ind J Dent Res.* 2018;Vol 29(3): 323-328. DOI: 10.4103/ijdr.IJDR\_615\_17.
15. Christensen LB, Petersen PE and Bhambal A. Oral health and oral health behaviour among 11-13-year-olds in Bhopal, India. *Community Dent Health.* 2003; Vol 20:153-158.
16. International Institute for Population Sciences (IIPS). National Family Health Survey (NFHS-4), 2015-16: India. Mumbai: IIPS; 2017.
17. Kumar ST, Dagli RJ, Mathur A, Jain M, Gowthan B, Prabhu D and Suhas K. Oral Health Status and Practices of Dentate Bhil Adult Tribes of Southern Rajasthan, India: *Int Dent J*. 2009; Vol 59(3):133–40. <https://doi.org/10.1922/IDJ_2054Kumar>.
18. Kumar G, Tripathi RM, Dileep CL, Trehan M, Malhotra S and Singh P. Assessment of Oral Health Status and Treatment Needs of Santhal Tribes of Dhanbad District, Jharkhand. *J Int Soc Prev Comm Dent*. 2016; Vol 6: 338–43. DOI: 10.4103/2231-0762.186798.
19. Shrivastav A, Maurya R, Shukla C and Sahu T. Oral Hygiene and Periodontal Status in the Primitive Hidden Tribe of Patalkot, a Tribal Area in Central India. *J Indian Soc Periodontol*. 2018. Vol 22: 55–59. DOI**:** 10.4103/jisp.jisp\_153\_16.
20. Ministry of Tribal Affairs: Statistical Profile of Scheduled Tribes in India, New Delhi: Government of India; 2013. https://www.tribal.nic.in/ST/StatisticalProfileofSTs2013.pdf.
21. Ministry of Tribal Affairs. Report of the high-level committee on socioeconomic, health and educational status of Tribal communities of India, New Delhi: Government of India; 2014.
22. WHO. Report on the WHO Traditional Medicine Strategy, Geneva: WHO; 2003b.
23. CEHAT. Ethical guidelines for social science research in health. Mumbai: Centre for Enquiry into Health and Allied Themes. 2000)
24. People’s Health Movement (PHM). Research for People’s Health, Bangalore: SOCHARA; 2005, p 8.o z q bC
25. AIIMS. National Oral Health Care Programme Implementation Strategies*.* New Delhi: AIIMS. 2001.
26. CBHI. Central Bureau of Health Intelligence - National Health Profile, New Delhi: Ministry of Health and Family Welfare. 2013.
27. Eder K and Garcia Pu M M. Model of Indigenous Maya Medicine in Guatemala. Chimatenango: ASECSA; 2003.
28. Scambler G. Health and Illness behaviour, In: Scambler G (Ed) Sociology applied to medicine, London: Bailliere Tindall;1991.pp. 33-46.
29. Horton S and Judith CB. Stigmatised Biologies: Examining the Cumulative Effects of Oral Health Disparities for Mexican American Farmworker Children. *Med Anthropol Q*. 2010; Vol 24 (2):199–219. DOI: [10.1111/j.1548-1387.2010.01097.x](https://doi.org/10.1111/j.1548-1387.2010.01097.x).
30. ICCSR. The Alternative Model: General Principles. In: Health for All: An Alternative Strategies. Pune: Indian Institute of Education; 1981. pp. 99.
31. Watt RG, Heilmann A, Listl S and Peres MA. London Charter on Oral Health Inequalities” *J Dent Res*. 2016; Vol 95 (3): 245– 247. DOI: 10.1177/0022034515622198.

1. [↑](#endnote-ref-1)
2. [↑](#endnote-ref-2)
3. [↑](#endnote-ref-3)
4. [↑](#endnote-ref-4)
5. [↑](#endnote-ref-5)
6. [↑](#endnote-ref-6)
7. [↑](#endnote-ref-7)
8. [↑](#endnote-ref-8)
9. [↑](#endnote-ref-9)
10. [↑](#endnote-ref-10)
11. [↑](#endnote-ref-11)
12. [↑](#endnote-ref-12)
13. [↑](#endnote-ref-13)
14. [↑](#endnote-ref-14)
15. [↑](#endnote-ref-15)
16. [↑](#endnote-ref-16)