Socio economic problems of tribes in attappadi, with special reference to sickle cell anaemia

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Abstract: The tribal colony of ‘Attappadi’ is situated in the northeast side of Palakkad district in Kerala. It is the first tribal block in India. There are mainly three tribes in Attappadi; they are Irula, Kurumba, and Muduga. By years they are suffering from the poor socio-economic background and related problems. Among them, the total number of people are suffering from a disorder called sickle cell anaemia, which is a genetic disease of red blood cells. This disease transmits from one generation to the next generation, if both parents have sickle cell haemoglobin traits in their bodies. As per some unofficial reports, the tribal people stricken by this disease is more than 1500, and recently a study by the health department of Kerala identified 26 more cases of sickle cell anaemia among the indigenous people of attappadi. Remedial measures are still going on, but situations show that those are not much effective. So this paper tries to analyse the influence of sickle cell anaemia among the tribes of Attappadi and the role of their socio-economic background.

Keywords: Attappadi, Kerala, sickle cell anaemia, socio-economic background

Introduction
Attappadi is the first tribal block of India. Located in Kerala in the district of Palakkad. The total population is 69,723. There are mainly three tribes in attappadi named Irula, Muduga, and Kurumba. In 1951 the total ST population of attappadi were 10, 200 consisting 90.2% of the total population. But according to the latest reports it is just 44 %. (see table 1). By years they are suffering from a deadly genetic disease known as sickle cell anaemia. Sickle cell anaemia is a red blood cell disorder. It is inherited, which means that the disorder passed by the genes from parents to children. There are many forms of sickle cell anaemia. In all forms at least one of the two disordered genes causes a person’s body to make haemoglobin ‘S’. When a person has two haemoglobin ‘SS’ the disease is called sickle cell anaemia. In this disorder, structural deforming occurs in the haemoglobin molecules of red blood cells and when the level of oxygen in the blood decreases red blood cells undergo change in transform in to sickle cell shaped cells. It is common among people who have ancestral relations in sub-Saharan Africa, South America, Cuba, and Central America. Painful or prolonged erection, poor eyesight or blindness, confusion, lung infection, arthritis are some of the major symptoms. It was known in Africa by different names. The scientific research of the disease sparked off by the famous scientist James Herrick in 1910. He found some peculiar, elongated, sickle shaped red corpuscles in a student who were suffering from strong anaemia. The disease further characterized by enlarged speech, painful crisis organ damage, impaired mental functions and increased susceptibility to infection and untimely death. The sickle cell disease was found in 72 districts of central, western and southern India, and current situation of Attappadi tribal colony is a common symbol of them.

Table 1: population details of Attappadi from 1951 to 2011

<table>
<thead>
<tr>
<th>Year</th>
<th>Total population</th>
<th>ST population</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>11300</td>
<td>10200</td>
<td>90.2%</td>
</tr>
<tr>
<td>1971</td>
<td>39181</td>
<td>16536</td>
<td>42.2%</td>
</tr>
<tr>
<td>1991</td>
<td>62033</td>
<td>24228</td>
<td>39.06%</td>
</tr>
<tr>
<td>2011</td>
<td>69723</td>
<td>30460</td>
<td>44%</td>
</tr>
</tbody>
</table>

Source census, 2011

Objective of the study
To find the socio economic problems of tribes in attappadi and how this situation makes tribal life more distressing, especially sickle cell anaemia patients.
Methodology

Both primary and secondary data are used in study. A structured questionnaire was prepared and interviewed the tribal people including sickle cell anaemia patients, doctors, social workers, and hospital faculties. The secondary data for the study is collected from various books, journals, and annual report of ITDP1.

The details of patients were provided by the tribal hospital of attappadi, all the patients follow a routine per week to visit the doctor, as the hospital staff Mr. Kali suggested I interviewed the patients after the consultation time, those patients who were in critical stage I visited their home and consulted with their family members.

The people under study

Kurumba

The Kurumba are foragers and shifting cultivators inhabiting in the forest area of Attappadi valley, and living the dense forest of attappadi valley in Palakkad district. Their dialect is known as Kurumba bhasha2 (bhasha stands for language).

The Kurumba families are nuclear. They used to marry from another clan of their community. According to Mathur (1977) the Kurumba had a dual organisation, moieties, having altogether eight clans. The polygamy often results in the formation of compound families where a husband and his wives and their live together with old aged family members. Their society is politically acephalous.

As a primary economic activity they were doing shifting cultivation. Major crops are, Red gram, Chama, maize, and ground nuts. Their Mooppan (leader) Andmannukkaran (priest cum agricultural specialist) will predominate them to do cultivation and other activities. Nowadays selling of the forest products such as honey, wax, herbs, turmeric, and wild ginger uphold their livelihood.

Muduga

They are believed to be the earliest migrants to attappadi from Coimbatore district of Tamil Nadu about 15th century. This indigenous group distributed in to Pudar and Agali panchayats of Palakkad district. They speak muduga bhasa which have similarities with Tamil and Malayalam.

Mudugar are also non vegetarian, but unlike Kurumba they refuse to eat beef. Hunting gathering and trapping were their primary dependency for survival. But now in the changed situation as other tribes of India they have many restrictions to hunt and gather. Ragi (finger millet) is their staple food. Apart from this rice, wheat, wild roots, and tubers are also a part of their diet.

They are the practisers of exogamy and marrying from Kurumba community is very common among them. Family structure of this community is nuclear. Their religious believes are similar to Hinduism, and they worship Malleswaran (lord Shiva of the Malleswaram peak).

Irula

Irula is one of the major indigenous communities in Kerala. They belong to the race Negrito which is very common in India and believed as true African race. The word Irula stands for the dark one (Derived from the Tamil word ‘Irul’ which means dark). Besides attappadi they inhabit in the areas of adjoining attappadi in Tamilnadu and Karnataka.

Once they were hunter gatherers and shifting cultivators, now majority of Irula are concentrates on basket and mat making, animal husbandry etc. they also gather some minor forest materials to sell in the outside market.

They have eleven sub clans, Vizarumooppan, Sambar, Karatti, Kurungan, Vellanka, Devana, Kuppill, Kupperpunter, Perathara and Uppli. They used to do interracial marriage from all their clans. Like Mudugar and Kurumba their family organisation is also nuclear. Their leader is called Mooppan, he takes control over the Irula society by giving advice in compliment situations, and decision making.

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1 Integrated Tribal Development Project established in 1976 and was the first one in Kerala having the specific objectives Reducing Poverty, Improving Educational Status, Eliminating exploitation of Tribal families

2 ‘Bhasha’ also said as ‘Bhasa’ stands for language
Socio-economic backwardness

Socio economic status encompasses income, educational attainment, financial security, health status. It can also encompass quality of life attributes as well as opportunities and privileges afforded to people within society. Exaltation of a society is always based on the strength in socio economic status.

The block of Attappadi came into exist in 1962. Attappadi Block consisting of Agali, Puthur and Sholayur Grama Panchayats spreads over an area of 745 Sq. Km. As it shares its boundary with Tamilnadu, the accessibility to Tamilnadu influences its Socio-economic and cultural life.

Economic Background

In common way tribal societies have very simple economic activities. The tribal population is characterized by a heterogeneous cultural pattern with variegated conditions and activities largely depending on nature. Major income source of tribes living in this area is from agriculture allied sectors and collection of minor forest materials. They collect minor forest products such as soap nut, dammar resin, cardamom, gooseberry, oil seeds, honey, bee wax etc. Rearing is also very important. Major chunk of minor forest produce collected in Kerala is from Attappadi. But the deforestation seizes their income source.

Lack of water sources and deforestation are now serious threat to Agricultural Development in this area. The main water sources are the river Bhavani, Siruvani and Varagar. In summer season these rivers are almost remain lean and dry. The people resort to rain water and small rivulets for drinking water and irrigation purposes. In some areas people pay 1500/unit except the transportation fee. Due to poor transportation condition they have to pay extra to the drivers. This is very swingeing condition for them. except rearing and gathering badly they get some minor jobs for 10–15 days per month. During this period, they spend the major share of their income only for arranging water.

Health Sector

Health and nutrition are the two important part of social development and also Nutrition has widely recognized as a basic pillar for social and economic development. Without them basic health is a distant dream. Infant death and malnutrition among Attappadi tribes is very strong. Nutrition is essential in childhood to ensure healthy growth, good immune system and neurological development. Economic growth and human development needs well-nourished population, who can think critically and creatively. ‘Child malnutrition impacts cognitive function and contribute to poverty through impeding individual’s ability to lead productive lives. In addition, it is estimated that more than one-third of under–five deaths are attributable to under nutrition’ (Liu et al; Black et al, 2008).3

In Attappadi tribal health condition is eminently deplorable. Their life is distressing because of unhealthy condition. Malnutrition is the main cause of most of all the problems in Attappadi. Many women in this area are suffering from chronic malnutrition. Pregnancy induced hypertension, indoor air pollution, anaemia infant death are the other major health problems. Another notable one is most of the hamlets lack basic facilities for maintaining sanitation and environmental hygiene. This also a major reason for health problems in Attappadi.

Table.2 Tribal population details attappadi

<table>
<thead>
<tr>
<th>No</th>
<th>Community</th>
<th>No. of families</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Irular</td>
<td>9370</td>
<td>13161</td>
<td>13747</td>
<td>26908</td>
</tr>
<tr>
<td>2</td>
<td>Kurumbar</td>
<td>666</td>
<td>1295</td>
<td>1256</td>
<td>2551</td>
</tr>
<tr>
<td>3</td>
<td>Mudugar</td>
<td>980</td>
<td>1645</td>
<td>1852</td>
<td>3497</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>11016</td>
<td>16101</td>
<td>16855</td>
<td>32956</td>
</tr>
</tbody>
</table>

Source ITDP Report

3 Levels & Trends in Child Malnutrition, UNICEF-WHO-The World Bank Joint Child Malnutrition Estimates. See https://www.who.int/nutgrowthdb/jme_unicef_who_wb.pdf?ua=1
Education

Education is the most important thing to do for the betterment of the entire society; unfortunately, the educational background of Attappadi is extremely poor. In Attappadi half of the represents still remaining illiterate and the majority are women. It is possible to enhance the quality of tribal life through elementary education. Education helps to reduce poverty, making them aware of health and nutrition, overcoming exploitation by middle man, awareness regarding upliftment schemes, discourage early marriages, etc. ‘a score of studies during 1960’s: Sen (1966), Banerjee (1962), Bapat (1966), Saxena (1964), Srivastava (1966), Sachidananda (1967) pointed out that ‘poverty and ignorance are the basic reasons of the backwardness of the tribes and emphasized the need of education for the tribal children.’(Tribal education trend and future scenario, B C Das p no: 42). Here they explore the need of mother tongue as a medium of instruction.5 The other reasons which impede the tribal from getting education are lack of accessibility, poor health, early marriage, financial problems, and lack of hostel facilities. The government offers them a major part of the fee, but students are not willing to join these institution as distance and other barriers persists.

Table 3 details of students in various institutions

<table>
<thead>
<tr>
<th>INSTITUTION</th>
<th>NO. OF STUDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Lower Primary</td>
<td>1653</td>
</tr>
<tr>
<td>2 Upper Primary</td>
<td>1026</td>
</tr>
<tr>
<td>3 High Schools</td>
<td>988</td>
</tr>
<tr>
<td>4 Higher Secondary</td>
<td>618</td>
</tr>
<tr>
<td>5 V H S E</td>
<td>190</td>
</tr>
<tr>
<td>6 Under Graduate</td>
<td>221</td>
</tr>
<tr>
<td>7 Post Graduate</td>
<td>9</td>
</tr>
<tr>
<td>8 Poly Technic</td>
<td>2</td>
</tr>
</tbody>
</table>

Marriage and suffusion of the disorder

The institution of marriage is socially sanctioned and in most of all the communities it is not a free choice. Marriage and family are key structure in most societies.Tribes of Attappadi follow both exogamy and endogamy. Exogamy can be defined as a social rule that requires an individual to marry from his/her own community. It is defined through kinship rather than ethnicity. Exogamy is the system which a person requires to marry from his/her own community. The occurrence of endogamy is not as common as exogamy; there is no particular universal type of social group to which the endogamous rules apply unlike exogamy. In modern social situations endogamy is not rare. Rural people especially indigenous communities follow this as their traditional way of life.

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5 29 Informants shared their view on difficulty of studying in both Malayalam and English mediums.
The function of endogamy is probably to regulate marriage in a way that preserves the cultural identity of a group. Irula and Mudugar are traditionally exogamists. They marry from outside of their communities. But Kurumba are primarily endogamists, in earlier period it was very strict rule to marry from their own community. Unlike earlier time this generation shows the tendency to practice exogamy.

If a couple with AA\textsuperscript{6} and SS\textsuperscript{7} genotype marry, all their children will be AS\textsuperscript{8}, and AS marry SS, there is 50% chance their children will be SS. When SS marries SS all their children will be SS. In this area people with SS genotype is more, and many of them are unaware about this problem.

![Gender wise details of patients](image)

**Figure 2: Gender wise details of patients**

**Communication problems**

A language is a way of expressing feelings and ideas. The trio has their own and unique language, Mudugar speaks Muduga bhasa which is a mixed combination of Tamil and, Malayalam. Kurumba speaks Kurumba bhasa. The language of Irula has similarities with Tamil, Malayalam, and Kannada. As settlers of the inside area, they won’t get many opportunities to interact with mainstream society, except fewer people. Commonly they are not very good at speaking Malayalam and Tamil. They interact with the mixture language of Malayalam and Tamil. This lack of communication leads to a lack of representation in civic bodies, lack of education and awareness among tribes; they are not availing treatment from hospitals or actively seeking cures and other hurdles in combating the condition.

**Educational backwardness**

“Education is the most powerful weapon which you can use to change the world,” says Nelson Mandela. Illiteracy reflects in every aspect of their social life. Illiteracy prevents society from developing at a steady rate, and it gives a huge opportunity to the people to exploit them. It also increases poverty in the society. Illiterate people always earn low wages in society. If they find a job also; it is a job of unskilled labour. The total literacy rate of Attappadi is 53%. Even educated people are not doing any skilled jobs. Gathering and pastoring helps them to wear through a day.

**Table 4, literacy rate**

<table>
<thead>
<tr>
<th>Community</th>
<th>Literacy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irula</td>
<td>60.01%</td>
</tr>
<tr>
<td>Mudugar</td>
<td>56.36%</td>
</tr>
<tr>
<td>Kurumba</td>
<td>69.92%</td>
</tr>
<tr>
<td>Total</td>
<td>62%</td>
</tr>
</tbody>
</table>

*Source: sesnsex2011*

An anaemic patient needs the best nutritional food to live a healthy life, without a job of good wage it is hard to maintain. And the malnourished situation makes their life thicken, especially people with sickle cell traits in their bodies. The youngsters of Attappadi don’t want to concentrate on studies, they are finding time to involve in jobs and other activities. Lack of accessibility, health

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\textsuperscript{6} Individuals Hematologically normal (AA)  
\textsuperscript{7} Individuals with sickle cell anemia (SS)  
\textsuperscript{8} Individuals with sickle cell trait (AS)
condition distance to educational institutions from home, early marriage, poor economic background are the basic reasons for non-proliferation of education in this area.

**Remedial measures**

**Camps held in schools**

After the death of Manikandan 8th class student of Sholapur tribal high school conducted physical screening for anaemia using medical officers in 33 schools of Attappadi. They screened 9800 students and out of them 554 were found to be anaemic (less than 10gm %). Out of that 29 students were found to be less than 7gm%, four students with ‘HB’ less than 5gm% were admitted and given blood transfusion in G T S H Kottathara.

A joint venture was held focusing on health awareness coordinated by Santhi medical information centre with the support of the Oruma health club. The main objective was to achieve a target of “18/45” (to achieve a body weight of 45 within 18 years.) It started on 14/10/2016 and covered all the schools and completed on 2/11/2016. During these screening investigations including haemoglobin estimation, blood grouping, and BMI calculations were arranged.

**Table.5 Details of camps held in school**

<table>
<thead>
<tr>
<th>Source primary data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total schools covered</td>
</tr>
<tr>
<td>Total students</td>
</tr>
<tr>
<td>Total samples collected</td>
</tr>
<tr>
<td>Total samples tested</td>
</tr>
<tr>
<td>HB below 10gm%</td>
</tr>
<tr>
<td>HB below 7gm%</td>
</tr>
<tr>
<td>HB below 5gm%</td>
</tr>
</tbody>
</table>

**Nutrition kit per patient**

The government provides a nutrition kit per patient worth Rupees 500 in every month. People with sickle cell traits in their body, children, pregnant woman are benefited. This kit includes: Finger millet powder, Wheat powder, Kidney bean, Coconut oil, Iodised salt, Currant, Dates, Molasses, and Soyabean.

**Available treatments**

**Hydroxyurea therapy, iron tablets, folic acid tablets**

This therapy can ameliorate the clinical course of sickle cell anaemia. ‘In some adults with three or more painful crises per year. Maximal tolerated doses of hydroxyurea may not be necessary to achieve a therapeutic effect. The beneficial effects of hydroxyurea do not become manifest for several months, and it must be carefully monitored. The long term s safety of hydroxyurea in patients with sickle cell anaemia is uncertain’. This is the most common treatment used in attappadi for SSA patients. And they distribute iron and folic acid tablets too. It helps them to maintain their health.

There are 3 primary health centres in Attappady. Each of them is settled in three villages, Sholayur, Puthur and Vattulukkai. And one community health centre in Agali panchayat. There are 5 mobile medical units to distribute the medicines to the door step. Block PHC (primary health centre) is also a dependable source for the tribes. And around 60 Asha workers are appointed to access the need of Tribes and to guide them in to governmental offers. Through 175 anganvadis the government distributes nutritional food for the pregnant women.

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9 A total number of 40 teenagers were interviewed only to understand the educational condition of this area, out of them 29 people responded that they are not going school or attending any other educational institution due to the distance and transportation problems.

10 Government Tribal Speciality Hospital, Kottathara.

11 This data is collected from hospitals. it is verified from informants they reported of availability of procurements from Anganvadi centres of the village

Blood transfusion

This process is done when the patient gets a HB of below 5%. Regular blood transfusions are used for primary and secondary stroke prevention children with sickle cell anaemia. Immediate blood transfusion provides when severe sudden anaemia strikes due to acute splenic sequestration. It is also helpful in acute chest syndrome, preoperatively and during pregnancy.

Table 6 health institutions of attappadi

<table>
<thead>
<tr>
<th>Health Institutions of Attappadi</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Primary Health Centre</td>
</tr>
<tr>
<td>2 Community Health Centre</td>
</tr>
<tr>
<td>3 Tribal Specialty Hospital</td>
</tr>
<tr>
<td>4 Mobile Medical Units</td>
</tr>
<tr>
<td>5 Family Welfare Sub Centre</td>
</tr>
<tr>
<td>6 Ayurveda Dispensary</td>
</tr>
<tr>
<td>7 Homeo Dispensary</td>
</tr>
<tr>
<td>8 Anganwadis</td>
</tr>
</tbody>
</table>

CONCLUDING REMARKS

- Provide enough fund to improve the literacy rate, government should provide all the expenses of tribal students.
- Transportation facility in government expense, especially for the students.
- Opening schools in the inner areas of attappadi will help reduce the dropout rate.
- There are 108 social kitchens started to provide the tribes nutrition food, they are not functioning well due to lack of funds. The government should make arrangements to solve this problem on time.
- Lack of good roads is a life or death factors for the tribal patients. There must be some necessary actions to improve the transportation facilities.
- Necessary funding to the housing schemes.
- Improve the facilities of Government College, especially hostels.
- Door step blood tests.
- Supply of free water in summer period.

Dr Feroze M suggests the permanent solution of problems of tribal is enabling them to cultivate the land they own with their traditional crops. In order to achieve this approach which, combine the plus points of their traditional methods of cultivation and modern agricultural technique which acceptable to the natives need to be adopted.  
- To ignore the exploitation of middle men, the government should establish direct collection centres in this area.
- Currently there are only three ambulances in attappadi. Government must allow at least two ambulances per hamlet.
- The condition of government college hostel is terrible; they should regeneration of the hostel may bring more students in to the college.
- The supply of rice through ration stores should replace by their traditional foods such as ragi (food-grass) and pulses.
- Introduce treatments such as born marrow transplantation and genetic therapy, which is scientifically proved as a permanent cure for sickle cell anaemia.

References


13 ‘SICKLE CELL DISEASE AMONG TRIBALS OF ATTAPPADY’ a study conducted for Integrated Rural Technology Centre, Palakkad, led by Feroze M Assistant Professor in Pathology, medical college, Calicut.