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BIOLOGY PROJECT

CASE STUDY-INFANT MORTALITY AT ATTAPADI

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1. INTRODUCTION-‘HEALTH SYSTEM IN ATTAPADI’

There are three government primary health centres (PHC) one each in Pudur, Sholayur and Vattulukki and one community health centre (CHC) in Agali. There are 28 sub-centres in this 745-km² block. Besides, there is a 54 bedded tribal Specialty hospital in Kootathara set to provide specialist care to tribal people. Around 85 ASHA had been appointed to assess the needs of the tribal community and to distribute essential medicines at their doorsteps. There are 172 anganwadis in Attappady to take care of pregnant women and tribal children. There are three Health mobile units providing medical help to the tribal hamlets, especially in the remote areas. Attapadi is currently in the limelight because of the infant deaths reported among the tribe.

2. REASONS FOR POOR HEALTH

The table below details reasons for poor health conditions in general, based on random inspections conducted on 84 villagers.

SL.N O	REASONS FOR HEALTH ISSUES	PERCENTAGE.OF RESPONSES
1	Alcoholism	19.04
2	Nutrition deficiency	23.80
3	Excess use of chemicals	14.28
4	Poor economic condition	21.42
5	Lack of health instrumental issues	21.42

Table 1: Reasons for poor health

1.1 MALNUTRITION

A survey of the Attapadi tribal belt in Kerala reveals that a large number of tribal children are born underweight and affected by malnutrition. This is because of poor and inadequate health facilities, and ineffective functioning of the health and social welfare departments at the grass root level. The infant mortality rate is 6600 per 100,000 against the state figure of 14.1 per cent.

The problem of tribal people is the food they consume and how it is offered. According to tribal welfare department officials in charge of local development schemes, the tribal people do not take ration items sent for distribution nor do they appear to be interested in cooking.

Based on newspaper reports, the food items distributed as part of the mid-day meal program are unfit for human consumption. An analysis of the rice sample found that it does not conform to the regulations of food grains under the Food Safety Service Regulation Act 2011(FSS), with unsafe food being unfit for consumption.

1.2 SICKLE CELL ANEMIA

Sickle cell disease is caused by a mutation in the hemoglobin-Beta gene found on chromosome 11. Haemoglobin transports oxygen from the lungs to other parts of the body. Red blood cells with normal haemoglobin (hemoglobin-A) are smooth and round and glide through blood vessels

A survey conducted in Attappadi by the Health Department (January 2018) has identified 26 more acute cases of sickle cell anaemia among the region's tribal population and the total number of tribal people suffering from an acute form of the dreaded genetic disorder has now gone up to 153.

In addition, the department has found 199 carriers of the disorder and their condition may turn worse if immediate treatment and rehabilitation measures are not initiated.

Among the Kurumba, Irula, and Muduka tribal communities in the region, many cases of the disorder are not getting reported. As per unofficial estimates, the number of tribal people vulnerable to the disease in the region is more than 1,500.

Panchayat	No. Tested	Sickling +ve	%
Pudur	79	21	26.6
Sholayur	110	32	29.1
Agali	72	4	5.6
Total (All Irulas)	261	57	21.8

Table 2: Positive Sickle Cell Cases (The year 2018)

1.3 CUSTOMS AND INBREEDING

Marriage is normal at ages 12 to 14 years and includes many rituals and ceremonies. It is normal and acceptable for an adolescent to marry their first or second cousin or even the second spouse of a parent. The occurrence of in-breeding is up to 80%, resulting in a significantly high combined in utero, infant and child mortality rate of 38%. (2019)

Consanguinity study was carried out in the Mudugar and Irular tribal groups in the Palakkad district of Kerala. The frequency of inbreeding in them was 78.74 % and 72.20%

The detrimental effects associated with inbreeding are caused by the expression of lethal or sub-lethal recessive genes inherited from the common ancestor, and hence inbreeding is expected to elevate the frequency of such recessive homozygotes in consanguineous groups

1.4 ALCOHOLISM

Dr.Prabhu Das the nodal officer of Attapadi says children are born in attapadi with genetic disorders, which he feels, could be due to alcoholism and drug addiction prevailing in the hamlets. Compared to non-drinkers, fathers who drank during the three months before conception were 44% more likely to have babies born with congenital heart disease.

Previous research has shown that alcohol exposure changes the DNA in developing sperm and changes sperm activity.

1.5 POOR MATERNAL HEALTH

Pregnant women work till their child is born, and then return to work a few days after delivery. Hard work, lack of proper food and rest, repeated pregnancies, violence at home and no peace of mind at the end of the day—all this leads to poor physical and mental health among women.

A high incidence of severe maternal anaemia, obstetric complications, and deliveries by untrained people all contribute to the number of infant deaths among tribal communities.

1.6 MILK ASPIRATION

Doctors at GTSH attributed milk aspiration as the cause for five of the 13 infant deaths in 2018. Milk aspiration is a condition, where milk accidentally enters the infant's windpipe rather than the food pipe or oesophagus. In case of infants, especially when they are unwell if a large amount of milk enters the windpipe during breastfeeding, it can lead to severe choking and ultimately death.

1.7 A CASE STUDY

“Njan vishwasichila. Oru kozhapum illatha kutty aayirunnu (I didn't believe it. The child was perfectly okay),” said Raman as he recalled trembling with shock when a nurse at the Government Tribal Speciality Hospital (GTSH) in Kottathara informed him that his child was no more. His baby boy, for whom he hadn't even thought of a name, lived all of three days before he died unexpectedly on November 22, 2018.

On November 19, Raman's wife Bindu had given birth to a perfectly healthy boy who weighed 2.86 kgs at birth. As a precaution, the mother and child were advised to spend a few days at the hospital, mainly to improve Bindu's haemoglobin levels (doctors said she was anaemic) and monitor the infant's health. His son was behaving like any other newborn would, Raman said, drinking milk at regular intervals, sleeping for long hours and showing no signs of discomfort. On the morning of Nov 22, when Raman was outside somewhere, he said a nurse took the baby to check his weight and returned a few minutes later with the baby in tears. Immediately, Bindu was asked to feed him, but as he was being fed, she noticed the infant shivering. The nurse was called and informed of the baby shivering, upon which he was transferred to the Intensive Care Unit (ICU).

“Twenty minutes later, they returned to say that my son had died. At first, they did not specify a reason but later said the death was due to milk aspiration. But when we checked the baby's nose, there was no presence of milk,” said Raman.

1.8 Ignoring Cultural Pleas

In the guise of providing 'good quality' treatment, healthcare officials often dismissed these traditional medicines and replaced them with modern medicines. They were also generally uninformed about the indigenous cultural practices and beliefs, leaving these people feeling stigmatized and alienated. Thus, although free, the present approach to providing healthcare wasn't successfully integrated with the community and was not meeting their needs.

Much of their land was lost to settlers from the outside. As a result, the nutritious food cultivated by these communities dwindled, resulting in malnutrition, and impacting livelihoods. However, when tribal people brought up these issues, healthcare providers often dismissed them as causes of concern.

The above issues have resulted in a lack of trust in doctors and the healthcare system for the local communities. Although they are aware of free healthcare schemes, they hesitate to access them due to marginalization and lack of integration with their culture.

3. SOLUTION

The various solutions are categorized as a Long term and Short-term interventions and are listed below.

a. Long-term Interventions

1. Proper land distribution program allotting land for Adivasi cultivation
2. The permanent solution to the problems of tribes is to enable them to cultivate the land they own with their traditional crops. In order to achieve this, an approach, which combines the plus points of their traditional method of cultivation, and modern agricultural technique which is acceptable to the natives need to be adopted.

b. Short-term intervention

1. High-risk cases like anaemia, pregnancy-induced hypertension, intrauterine growth retardation etc. should be identified immediately by antenatal check-up either through sub-centres or through Mobile health units. Appropriate care including inpatient care should be provided to the identified high-risk pregnant women.
2. Nutritional rehabilitation centres should be established in CHC and tribal speciality Hospitals. Malnourishment should be detected among pregnant

women, lactating women and under five children by utilizing the ICDS machinery. Severe cases of malnutrition should be hospitalized in these centres and managed.

3. Enabling Test to screen for SCD using aqueous multiphase systems (AMPSs).An AMPS designed to target the density (Sickle cells are denser than normal RBCs) signature of sickle cell anaemia.
4. The vacant positions of doctors and other staff in various centres should be filled at the earliest.
5. The staple food of tribal people like ragi and maze should be distributed through the ration shops instead of rice. Also, pulses should also be distributed to meet the protein requirement.
6. The employment guarantee scheme should be restarted to ensure employment to tribal.

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