Chapter-6

Summary

The main objective of the present study was to understand the prevalence of Malaria in the study area, socio-economic status of the population and nutritional evaluation of the community**.**

In consonance with the objectives of the study, the main findings are summarized as below.

6.1 Prevalence of Malaria among community

The projected area is of about 359 population. A total of 116(32.3) people was found positive for malaria without sign and symptoms. They are healthy but anaemic. All the age groups are affected including children. On the other hand, in the control villages, 31 positive cases with malaria symptoms have been found out of 747(0.82%) population. The highest age group affected in 5-14 years (14.2%), followed by 15> years (10.9%) and 5< (7.2%) in the Study Village. In Control Village, the highest case affected in 15> years (0.5%), followed by 5-14 (0.3%) and <5 years (0.02%). So, it had been noticed that both the study areas, there was prevalence of malaria.

The study showed that the prevalence of *P.falciferum* is predominant in the locality. The asymptomatic survey in three top hill villages proved highly endemic zones to the block. More than 40% of population are infected with the malaria parasite. Both adult and paediatric cases are infected. The asymptomatic survey showed that high prevalence of malaria among the community and asymptomatic in nature.

6.2 Socio-economic profile of the respondents

- Age wise distribution: The highest proportion (44.0%) are in the age group and was of 25-35 years in Control Village and 42.5% in 36-45 years in Study Village. The lowest frequency was from the group of 56 and above years of age in both the villages. The proportion of females is slightly higher than the male in the age groups of 25-35, 46-55 years and 56-above.

- Educational qualification: The highest proportion of elected members have studied up to elementary in both villages. Followed by matriculating in control village 27.5%. The proportion of female is considerably higher than the male in the Primary level but lower in other categories. Control Villages are more educated than the study village.
- The Occupational pattern of the respondents: Among the category of respondents, the general occupational pattern of the different categories of respondents. Only the primary occupations have been considered. Among the category of respondents, Cultivation (65.2% and 40%) was found to be more common followed by students 42.5% in Study Village. 22.5% and 20% are housewives in Study and Control Village and 5% of each are retired, business and service in Control Village.
- ST/non-ST status: The proportion of ST is higher than the non-ST respondents. It may be mentioned that the study was mainly confined to villages that have ST population only. However, it was observed that many villages are in fact not homogeneous and in some cases, therefore non-ST are found to represent.
- Income Level: The monthly income of the different groups of respondents showed and 5% in the highest income category up to Rs 12,000 and above) in Control Village. 57.5% and 30% in the highest income category of Rs 3000/ and 25% and 30% in the category of 3001-6000/ in Study and Control Village.
- Marital Status: The highest proportions (57.5%) of members are married in Control Village while 45.5 % are unmarried in Study Village. The proportion of widow is comparatively more among the men compared to women.
- Family Type: The highest proportion 54% comes from nuclear families in Study Village and 51.5 % from joint families in Control Village. There are two male members whose information is not known. The proportion of women members coming from Joint families is higher than male members. Conversely, the proportion of women members is lesser from Nuclear families compared to men.

Knowledge, Awareness of the Respondents

- Heard of Malaria: All the respondents said they had heard of malaria.
- Knowledge of Malaria: Responses relate to whether the respondents have heard of malaria or not, the signs and symptoms, the cause of transmission, preventive measures and the sources of information of malaria and availability of treatment were found more in Control Village than in Study Village.
- Gender differences in knowledge of Malaria: There is a significant relationship between gender and knowledge of malaria. A gender analysis shows that 42.5% and 38% of men and 50% and 48.5% of women had heard of malaria in Study and Control Village. The fact that more men had heard of malaria may be due to their higher mobility within and outside their villages and therefore their wider interactions with people in other locations.
- Knowledge regarding Signs and symptoms of Malaria: About 80% of the respondents in the whole sample identified the body becoming hot or fever as a sign and symptom of malaria. There is a significant difference between gender and signs and symptoms of malaria. Of the women, nearly 75% reported a hot body or fever as a sign or symptom of malaria and nearly 85% of men reported a hot body or fever as a sign and symptom of malaria.
- Awareness of Cause of Malaria: There was a significant difference($p<0.05$) in gender and knowledge of the cause of malaria in Study and Control Village. More men (45%) than women (40%) in Control Village and 29% men than 22.5% in Study Village attributed malaria to a mosquito bite.
- Awareness Knowledge on prevention of Malaria: The analysis reveals a significant difference between village and knowledge of prevention of malaria. Male had more knowledge of preventive measures than females.
- Preventive measures adopted by villagers to cope with Malaria: It was seen that compared to Study Village, in Control Village, people were well known to the preventive measures and they accepted more Govt. Services and the help of health provider. The traditional method is not popular among them and only negligible people go for it. They are concerned about cleanliness, health and

hygiene. Male people are more conscious of about government activities. The analysis showed that people are much aware of health delivery system in the locality. But still few of them neglect and they remain untreated or choose traditional medico's, we can observe a gap which to be rectified by available health delivery program through awareness and people's participation.

- Findings on Causes of Malaria Persistence: The studied area favors the transmission of malaria. Tea garden, forest, foothills are the surrounds the area. The people living in that area are specially tea tribes and tribal and their socio-economic conditions are too poor for which they are more affected.

6.3 Nutritional Evaluation of the Community

BMI status of the <=15 years of children

The result showed that Control Village is more normal in BMI than Study Village (55 and 49) and Study Village is more undernourished and severely undernourished than Control Village. In both, the village boys have normal BMI. Age distribution on BMI status shows 0-5 years have normal BMI in both the village. In Study Village it was reported more numbers were normal BMI association with malaria, whereas without malaria less numbers of Normal BMI and higher numbers of malnourished children(<BMI). On the other hand, in control village, with malaria normal BMI and lesser BMI is almost equal. Whereas, without malaria more normal BMI was observed.

Study and Methods of Preparation

The native of Study Village in sub-tropical forest environments are based on cassava, banana/plantains, *colocasia*, corms, tubers, papaya/flower, neem, justice and widely cultivated and wild types of ecologically available vegetables and high quality of proteins comes from fermented fish. It appears low energy and protein than control village. So, low caloric density compares to Control Village where energy derivates are higher due to maximum consumptions of pork but in both the village it was seen that diets are not balanced. It was also seen that in the Study Village there is a

maximum number of diets was consists of rooted vegetable corm, cassava, fermented fish.

Nutritional Evaluations (Moisture Determination and Chemical Analysis)

This study describes the determination of the nutritional potential of dishes consumed by communities living in a forest area, which is a high prevalence of asymptomatic malaria endemic zone called Suali Lukua Hills and also another control village in the plain area adjacent hill which is malaria endemic but shows symptomatic malaria zone called Hazongbari Village. Moisture, ash, proteins, fat, and carbohydrates were determined by Food Safety and Standards Act (FSSAI). The percentage was used for the results obtained (f.w for moisture and d.w for ash, proteins, fats, and carbohydrates). This study revealed that a higher consumption of dishes made from tubers, fermented fish, green leafy vegetables in the study village which have more anti-malarial properties and tolerant to the malaria parasite.

In the Study Village, it is seen the moisture content ranges from 7.83% (sesame) to 92.4% (Colacasia stem with fermented fish). The ash level ranges from 0.38% (Bean) to 16.33% (Fermented fish). Protein content ranged from 1.1% (Banana flower) to 37.02% (Fermented fish). The highest carbohydrate found in 73.74% (Rice), Taro, 30.75% (sesame) and food items prepared by it.

Similarly, in the Control Village, tuber, green chilies, Khar, ginger and green vegetables carry more amounts of carbohydrate and ashes, fat content ranged from 0.04% (Colocasia stem) to 36.26% (Pork gravy with different vegetables/rice flour). All higher amounts of protein are derived from fish and pork gravy. Carbohydrate ranges from 1.33% (Black gram gravy) to 72.3% (Aijong Rice). The moisture content ranges from 22.56% (Fermented fish) to 92.93% (Black gram gravy); ash 0.45% (mix green vegetables) to 5.56 % (ginger); proteins, 0.03% (Colocasia stem) to 51.98 % (Fermented fish).

Phytochemical Analysis

In the Study Village, the common diets included locally grown plants such as, Carica papaya, *Manihot esculentum, Aka colocasia, Musa paradisiaca* L, families of Zingiberaceae, families of Poaceae, Capsicum and the many other green vegetables like, neem, bitter guard, drumstick, other wild vegetables. The qualitative and qualitative analysis showed the presence of higher number of phytochemicals in the study. The presence of the phenolic content, total flavonoid content, alkaloid was observed in most of the species. Similarly, tannin was present in *Carica papaya, Oryza sativa.* Terpenoid and carotenoid were present in *Capsicum frutescens, Capsicum annum*. The comparative analysis of phytochemicals from food diets of Study and Control Villages shows that flavonoids levels of diet constituents were significant at ($0.01 \leq p \leq 0.05$) compared to Control Village. This high content of flavonoids in Study Village diet may have contributed to anti-malarial response. From all the plants which are locally available and frequently consumed by the communities in the study area, which possesses an antimalarial capacity and may have indirectly provided tolerance to the malaria parasite. The study also showed that good numbers of respondents still rely on traditional different plant species herbal remedies. The study identified 10 different plant species during the period of house visits in the study areas and found different households usually consume there in either raw or cooked form.