

KAP STUDY ON MALARIA
IN PROJECT AREAS OF MALARIA CENTRES OF OVHA
1999-2000

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I. ACKNOWLEDGEMENT

The experience of pleasure and pain while involved in this study is unique and personal. I would like to thank Mr. Khyamakar Swain, Vice President, OVHA and Dr. Md. Jawed Akther, Medical Officer, OVHA for their timely help and guidance during the study.

In the present study on Malaria, OVHA has received extensive support from the NGOs who are running the Malaria Centres of OVHA. The study might not have been completed without the help of these NGOs. I do appreciate their efforts in collecting the data and sending the filled in schedules/master sheets to OVHA.

The most important part of this study could only be covered by the co-operations of villagers and respondents in providing right information to the best of their knowledge. I would also like to thank all the respondents of the study.

I extend my heartfelt thanks to the Principal Investigator of the study Mr. Himansu Sekhar Dutta, Programme Officer, OVHA as well as Mr. Nirakar Sahoo, Programme Assistant, OVHA for tabulation work during the study.

Finally I also thank Bread for the World, Germany for providing necessary funds for the study.

Ajay Tripathy
Executive Director

II. INTRODUCTION

Orissa, one of the constituent states of Indian Union, extends over 4.8 percent geographical area and comprises 3.7 percent population of 31.66 million (1991 census) and estimated to be over 36 million in 1996. In Orissa there are 62 distinct biological isolates (tribes) contributing about 23 percent of the state's population living in varied geo-climatic conditions. Forest, plains, hilly and coastal areas with numerous streams, rivers, mines, ethnic diversity and varied socio-economic conditions pose a formidable challenge to malaria control operations in the state. Besides, there are financial constraints adversely influencing the requirements of the malaria control programme in the state.

The magnitude of problem of malaria in Orissa is very acute. Orissa contributes about 16% of the total malaria cases of the country with 35.80% of Plasmodium falciparum cases and over 12.90% of deaths due to malaria. The problem is more alarming in the tribal areas that contribute 2/3rd of cases of the state's total with 80% plasmodium falciparum cases and 70-80% deaths. Although reasons are multifarious, financial constraints are hampering implementation of the NMEP programme. The Budget provision for NMEP is only 4.2% of the total health budget that again is only 2.74% of the total budget of the state (1994-95) and falls short by almost 50% of the actual requirement. Further, Budget Estimate towards other expenses, wages and materials is far below the actual requirement. Moreover, allotment of funds under different heads are not made in time, resulting delays in spray operation schedules to be conducted from first week of May to first week of September. It is felt that the department of health on its own cannot tackle the problem of control of malaria and should involve other agencies engaged in developmental activities to control the problem of malaria in Orissa.

Features contributing perennial transmission in tribal areas are mainly due to difficult terrain inaccessible during rainy season, prone to frequent flooding, vectors very much potent with high anthropophilic index and frequent man biting habits and above all presence of varying degree of resistance to insecticides and drugs. Out of 1290 PHCs & PHC (new) of the state, 158 PHCs came under tribal area and another 51 PHCs in High-risk malaria area. Although tribal population constitutes only 22.2% of the states population, 2/3rd of malaria cases and 80% of Plasmodium falciparum cases are detected from this population. Thus, malaria if not controlled will seriously undermine the massive effort of the government for achieving rapid socio-economic development of the state particularly in tribal areas. The project areas where construction/developmental activities are taken up, particularly, projects like construction, industry, irrigation and power plants etc. arrangements need to be made for establishing a project malaria centre with requisite staff to take up malaria control activities.

High incidence of malaria has been reported from most of the urban areas of the state. As sanctioned by GOI so far 3 urban malaria units have been established covering Rourkela, Berhampur and Sambalpur towns. Funds under NMEP Budget do not permit inclusion of some more towns under the scheme although qualifying to norms fixed by GOI. It is therefore suggested that institution of urban malaria activities in the following towns having population of more than 20,000 and SPR more than 5% or the ratio of clinical malaria cases to fever cases more than one third as per hospital/dispensary statistics during the last calendar year:- Burla, Hirakud, Brajrajnagar, Jharsuguda, Belpahar, Sundargarh, Rajgangpur, Biramitrapur, Barabil, Joda, Keonjhar, Anandpur, Angul, Phulbani, Titilagarh, Bhawanipatna, Jeypore, Koraput, Bolangir, Rayagada, Sunabeda and Nawrangpur.

Orissa's Malaria situation is of considerable concern and has significant implications, the state being the major contributor of malaria cases (16% of the total 2.9 million cases in India) and deaths due to malaria in the country (12.9%). This can be explained to the predominance of Plasmodium falciparum in Orissa, the species responsible for severe (cerebral) malaria and mortality. 36% of Plasmodium falciparum cases in India come from this state. The four districts that are endemic to malaria are Keonjhar, Sundargarh, Mayurbhanj and Phulbani. These districts together account for 18% of the population of Orissa and, 42% of all cases of malaria in Orissa are reported from these four districts combined. 45% of the Plasmodium falciparum cases in Orissa are recorded from these districts and 36% of the malarial deaths occur here (source DHS 1996). It could be mentioned that Annual Blood Examination Rate (ABER) was 11.97, Slide Positivity Rate (SPR) was 11.85, Annual Parasitic Incidence (API) was 14.46, Slide Falciparum Rate was 10.23 and the percentage contribution from Plasmodium falciparum was 86.33% in the state, for the year 1996 (latest available figure).

OVHA has 20 malaria centres across the state run by its member organisations in their operational areas. Apart from awareness generation the centres also do malaria surveillance work in these areas. Considering all these OVHA thought of a KAP study on malaria in the project areas of its malaria centres.

III. STATEMENT OF OBJECTIVES:

The following are the objectives of the study.

1. To measure the KAP of community members on malaria, its control and prevention
2. To suggest suitable mode of intervention plan for malaria control and prevention in the area.

IV. METHODOLOGY:

1. Data collection activity was done carried out by the malaria centres of OVHA in their project areas. The following points were followed while carrying out the data collection activity. The schedule of enquiry was provided to the malaria centres of OVHA.
2. One revenue village/Hamlet at random from the project area was selected by all the malaria centres
3. 50 schedules were administered in the village in the following way by interviewing about 25 male respondents and 25 female respondents. A little over 50 schedules was administered if required.
4. A sample size of 50 households was selected by the systematic sampling method.
5. If there are around 50 households in the village/hamlet then all the households were selected. One male and one female adult respondent from each household were interviewed alternatively.

V: STUDY AREA

The study was conducted in the project areas of the malaria centres of OVHA. The study area along with the names of district, block, Grampanchayat and village/hamlet were shown in the table 1.

VI. TABULATIONS

The results of the study were shown in a tabular form, which are self explanatory in nature.

TABLE 1: STUDY AREA

Collaborating agency	Name of the District	Name of the Block	Name of the GP	Name of the Village or Hamlet
VYK	ANGUL	KISHORENAGAR	URUKUKA	GHANPUR
ASWASANA	ANGUL	KANIHA	SAMAL	JADUNATHPUR
BEIP	ANGUL	KISHORENAGAR	DHAURAPALI	JEIRAT
SCRS	BOUDH	HARBHANGA	TALAGAON	DAKAPADAR
VIKALPA	BOLANGIR	TUREKELA	KHAGSU	ANDALPURI
IPS	BOLANGIR	BOLANGIR	-----	KHUJANPALI
ARUNA	GANJAM	ASIKA	GANGAPUR	SAHASPUR
SEWA	JHARSUGUDA	KOLABIRA	SAMASINGHA	BHOGRAPALI
OGUP	JAJPUR	SUKINDA	SUKINDA	PATHARKATA
IYDP	KHURDA	BOLAGARH	DHALAPATHAR	THANAPALLY
JSSS	KALAHANADI	M. RAMPUR	BARABANDHI	PUJILADU
SRM	KEONJHAR	GHASIPURA	GOHIRA	OSTAPURA
VARASA	KEONJHAR	HARICHANDANPUR	BHAGAMUNDA	BHAGAMUNDA
ORRISSA	KANDHAMAL	CHAKAPADA	CHAHALI	RAHGAMATIA
GUC	NAYAGARH	GANIA	CHHAMUNDIA	BENTAPADA
BASSANTA	SAMBALPUR	JUJUMURA	JAYANTPUR	BAIRAGIPALI

This table explains the study area comprising of name of collaborating agencies, the name of the corresponding district, block, GP and Village/Hamlet. The study was conducted in 16 villages/hamlets of Orissa.

TABLE 2: AGE DISTRIBUTION OF THE RESPONDENTS

Name of the Village or Hamlet	18-25	%	25-40	%	40-55	%	55+	%	Total
GHANPUR	3	6.38	18	38.3	22	46.81	4	8.51	47
JADUNATHPUR	5	10.00	29	58.00	13	26.00	3	6.00	50
JEIRAT	1	2.08	32	66.67	12	25.00	3	6.25	48
DAKAPADAR	3	6.12	27	55.10	12	24.49	7	14.29	49
ANDALPURI	5	10.00	36	72.00	8	16.00	1	2.00	50
KHUJANPALI	3	6.12	34	69.39	9	18.37	3	6.12	49
SAHASPUR	4	8.33	19	39.58	14	29.17	11	22.92	48
BHOGRAPALI	13	26.00	17	34.00	15	30.00	5	10.00	50
PATHARKATA	0	0.00	29	58.00	20	40.00	1	2.00	50
THANAPALLY	10	20.41	20	40.82	12	24.49	7	14.28	49
PUJILADU	2	4.76	38	90.48	2	4.67	0	0.00	42
OSTAPURA	2	4.17	10	20.83	23	47.92	13	27.08	48
BHAGAMUNDA	11	22.00	22	44.00	16	32.00	1	2.00	50
RAHGAMATIA	9	18.00	22	44.00	11	22.00	8	16.00	50
BENTAPADA	2	3.85	26	50.00	21	40.38	3	5.77	52
BAIRAGIPALI	12	25.53	16	34.04	10	21.28	9	19.15	47
Total	85	10.91	395	50.71	220	28.24	79	10.14	779

This table shows the age distribution of the respondents. All the respondents are adults i.e. over the age of 18. We found that 10.91% respondents are between age 18-25, 50.71% between age 25-40, 28.24% between age 40-55, 10.14% above age 55. In all there are 779 respondents.

TABLE 3: SEX DISTRIBUTION OF THE RESPONDENTS

Name of the Village or Hamlet	MALE	%	FEMALE	%	Total
GHANPUR	20	42.55	27	57.45	47
JADUNATHPUR	38	76.00	12	24.00	50
JEIRAT	25	52.08	23	47.92	48
DAKAPADAR	26	53.06	23	46.94	49
ANDALPURI	25	50.00	25	50.00	50
KHUJANPALI	23	46.94	26	53.06	49
SAHASPUR	30	62.50	18	37.50	48
BHOGRAPALI	25	50.00	25	50.00	50
PATHARKATA	26	52.00	24	48.00	50
THANAPALLY	24	48.98	25	51.02	49
PUJILADU	21	50.00	21	50.00	42
OSTAPURA	24	50.00	24	50.00	48
BHAGAMUNDA	24	48.00	26	52.00	50
RAHGAMATIA	47	94.00	3	6.00	50
BENTAPADA	26	50.00	26	50.00	52
BAIRAGIPALI	24	51.06	23	48.94	47
Total	428	54.94	351	45.06	779

This table shows the sex distribution of respondents. 54.94% are male and 45.06% female respondents are covered. A highest of 94% male respondents was covered in Rahagamatia followed by 76% in Jadunathpur and 62.5% in Sahaspur. A low of 6% female respondents was covered in Rahagamatia followed by 24% in Jadunathpur and 37.5% in Sahaspur.

TABLE 4: MARITAL STATUS OF THE RESPONDENTS

Name of the Village or Hamlet	Married	%	Unmarried	%	Others	%	Total
GHANPUR	45	95.74	2	4.26	-	-	47
JADUNATHPUR	39	78.00	11	22.00	-	-	50
JEIRAT	48	100	-	-	-	-	48
DAKAPADAR	47	95.92	1	2.04	1	2.04	49
ANDALPURI	50	100	-	-	-	-	50
KHUJANPALI	47	95.92	2	4.08	-	-	49
SAHASPUR	47	97.92	1	2.08	-	-	48
BHOGRAPALI	40	80	10	20.00	-	-	50
PATHARKATA	50	100	-	-	-	-	50
THANAPALLY	38	77.55	10	20.41	1	2.04	49
PUJILADU	42	100	-	-	-	-	42
OSTAPURA	43	89.58	-	-	5	10.42	48
BHAGAMUNDA	43	86.00	7	14.00	-	-	50
RAHGAMATIA	47	94.00	2	4.00	1	2.00	50
BENTAPADA	52	100	-	-	-	-	52
BAIRAGIPALI	36	76.59	10	21.28	1	2.13	47
Total	714	91.65	56	7.19	9	1.16	779

This table corresponds to the marital status of the respondents. 91.65% respondents are found to be married, 7.19% are unmarried. 100%-married respondents were found in Jeirat, Andalpuri, Patharkata, Pujiladu and Bentapada.

TABLE 5: LITERACY DISTRIBUTION OF THE RESPONDENTS:

Name of the Village or Hamlet	ILLITERATE	%	LITERATE	%	Total
GHANPUR	30	63.83	17	36.17	47
JADUNATHPUR	24	48.00	26	52.00	50
JEIRAT	9	18.75	39	81.25	48
DAKAPADAR	38	77.55	11	22.45	49
ANDALPURI	38	76.00	12	24.00	50
KHUJANPALI	-	-	49	100	49
SAHASPUR	17	35.42	31	64.58	48
BHOGRAPALI	24	48.00	26	52.00	50
PATHARKATA	10	20.00	40	80.00	50
THANAPALLY	13	26.53	36	73.47	49
PUJILADU	12	28.57	30	71.43	42
OSTAPURA	23	47.92	25	52.08	48
BHAGAMUNDA	35	70.00	15	30.00	50
RAHGAMATIA	10	20.00	40	80.00	50
BENTAPADA	16	30.77	36	69.23	52
BAIRAGIPALI	14	29.79	33	70.21	47
Total	313	40.18	466	59.82	779

This table represents the literacy of the respondents. 40.18% of the respondents are found to be illiterate followed by 59.82% literate. Low literacy is found in Dakapadar 22.45%, Andalpuri 24% and Bhagamunda 30%. High literacy is found in Khujanpali 100%.

TABLE 6: EDUCATIONAL STATUS OF THE RESPONDENTS

Name of the Village or Hamlet	NIL	%	1-7	%	8-Matric	%	Matric +	%	Total
GHANPUR	-	-	15	88.24	1	5.88	1	5.88	17
JADUNATHPUR	-	-	12	46.15	10	38.46	4	15.39	26
JEIRAT	22	56.11	11	28.21	5	12.82	1	2.56	39
DAKAPADAR	4	36.36	5	45.46	2	18.18	-	-	11
ANDALPURI	-	-	12	100	-	-	-	-	12
KHUJANPALI	-	-	27	55.10	11	22.45	11	22.45	49
SAHASPUR	-	-	21	67.74	8	25.81	2	6.45	31
BHOGRAPALI	-	-	16	61.54	5	19.23	5	19.23	26
PATHARKATA	-	-	33	82.50	6	15.00	1	2.5	40
THANAPALLY	-	-	18	50.00	10	27.78	8	22.22	36
PUJILADU	-	-	10	33.33	14	46.67	6	20.00	30
OSTAPURA	-	-	15	60.00	2	8.00	8	32.00	25
BHAGAMUNDA	3	20.00	3	20.00	3	20.00	6	40.00	15
RAHGAMATIA	9	22.50	28	70.00	2	5.00	1	2.50	40
BENTAPADA	-	-	34	94.44	1	2.78	1	2.78	36
BAIRAGIPALI	11	-	13	39.40	5	15.15	4	12.12	33
Total	49	33.33	273	58.58	85	18.24	59	12.66	466

This table represents the educational status of the respondents. Education Nil is found in 33.33% respondents followed by 1-7 standard in 58.58%, 8 standard to Matric in 18.24% and Matric above in 12.66% respondents. The educational status can thus be considered to be low among the respondents.

TABLE 7: DISTRIBUTION OF RESPONDENTS ACCORDING TO RELIGION:

Name of the Village or Hamlet	Hindu	%	Muslim	Christian	%	Others	Total
GHANPUR	47	100	-	-	-	-	47
JADUNATHPUR	50	100	-	-	-	-	50
JEIRAT	48	100	-	-	-	-	48
DAKAPADAR	49	100	-	-	-	-	49
ANDALPURI	50	100	-	-	-	-	50
KHUJANPALI	47	95.92	-	2	4.08	-	49
SAHASPUR	48	100	-	-	-	-	48
BHOGRAPALI	50	100	-	-	-	-	50
PATHARKATA	50	100	-	-	-	-	50
THANAPALLY	49	100	-	-	-	-	49
PUJILADU	42	100	-	-	-	-	42
OSTAPURA	48	100	-	-	-	-	48
BHAGAMUNDA	50	100	-	-	-	-	50
RAHGAMATIA	49	98.00	-	1	2.00	-	50
BENTAPADA	52	100	-	-	-	-	52
BAIRAGIPALI	47	100	-	-	-	-	47
Total	779	99.61	-	3	0.39	-	779

This table represents the distribution of respondents according to religion. A high of 99.61% Hindu respondents was found followed by Christian 0.39%. In all the villages we found 100% Hindu respondents except Khujanpalli and Rahgamatia where 2 and 1 Christian respondents were found.

TABLE 8: CASTE WISE DISTRIBUTION OF THE RESPONDENTS

Name of the Village or Hamlet	SC	%	ST	%	OBC	%	GEN	%	Total
GHANPUR	-	-	13	27.66	-	-	34	72.34	47
JADUNATHPUR	8	16.00	2	4.00	40	80.00	-	-	50
JEIRAT	5	10.42	7	14.58	16	33.33	20	41.67	48
DAKAPADAR	27	55.10	16	32.65	6	12.25	-	-	49
ANDALPURI	5	10.00	37	74.00	8	16.00	-	-	50
KHUJANPALI	9	18.37	-	-	36	73.47	4	8.16	49
SAHASPUR	-	-	-	-	26	54.17	22	45.83	48
BHOGRAPALI	8	16.00	8	16.00	34	68.00	-	-	50
PATHARKATA	7	14.00	36	72.00	-	-	7	14.00	50
THANAPALLY	-	-	3	6.12	26	53.06	20	40.82	49
PUJILADU	9	21.43	29	69.05	1	2.38	3	7.14	42
OSTAPURA	-	-	43	89.58	2	4.17	3	6.25	48
BHAGAMUNDA	3	6.00	36	72.00	11	22.00	-	-	50
RAHGAMATIA	24	48.00	26	52.00	-	-	-	-	50
BENTAPADA	26	50.00	-	-	26	50.00	-	-	52
BAIRAGIPALI	5	10.64	24	51.06	15	31.92	3	6.38	47
Total	136	17.46	280	35.94	247	31.71	116	14.89	779

This table represents the caste-wise distribution of the respondents. We found 17.46% SC, 35.94% ST, 31.71% OBC and 14.89% General caste respondents. High General caste respondents are found in Ghanpur 72.34%. High OBC respondents are found in Jadunathpur 80% and Khujanpalli 73.47%. High ST respondents are found in Ostapura 89.58%, Andalpuri 74%, Patharkata and Bhagamunda 72% each. High SC respondents were found in Dakapadar 55.10% and Bentapada 50%.

TABLE 9: OCCUPATION WISE DISTRIBUTION OF THE RESPONDENTS

Name of the Village or Hamlet	HH	%	Agr	%	Service	%	Business	%	Others	%	Total
GHANPUR	16	34.04	18	38.3	2	4.26	3	6.38	8	17.02	47
JADUNATHPUR	5	10	9	18	1	2	3	6	32	64	50
JEIRAT	14	27.17	24	50	1	2.08	-	-	9	18.75	48
DAKAPADAR	2	4.08	16	32.65	1	2.04	-	-	30	61.23	49
ANDALPURI	6	12	19	38	-	-	2	4	23	46	50
KHUJANPALI	25	51.02	4	8.16	3	6.12	8	16.33	9	18.37	49
SAHASPUR	13	27.08	14	29.17	2	4.17	5	10.42	14	29.16	48
BHOGRAPALI	18	36	16	32	-	-	-	-	16	32	50
PATHARKATA	7	14	43	86	-	-	-	-	-	-	50
THANAPALLY	21	42.86	6	12.24	6	12.24	7	14.29	9	18.37	49
PUJILADU	-	-	36	85.71	-	-	-	-	6	14.29	42
OSTAPURA	17	35.42	10	20.83	3	6.25	-	-	18	37.5	48
BHAGAMUNDA	5	10	25	50	4	8	1	2	15	30	50
RAHGAMATIA	-	-	48	96	1	2	1	2	-	-	50
BENTAPADA	24	46.16	13	25	1	1.92	1	1.92	13	25	52
BAIRAGIPALI	12	25.53	10	21.28	3	6.38	1	2.13	2	44.68	47
Total	185	23.75	311	39.92	28	3.59	32	4.11	223	28.63	779

This table represents the occupation wise distribution of respondents. Agriculture was found to be the predominant occupation 39.92% followed by Others 28.63%, Household work 23.75%, Business 4.11% and Service 3.59%. Agriculture occupation is particularly high in Rahgamatia 96% Patharmata 86% and Pujiladu 85.71%.

TABLE 10: DISTRIBUTION OF THE RESPONDENTS ACCORDING TO ANNUAL FAMILY INCOME

Name of the Village or Hamlet	Below 11,000	%	Above 11,000	%	Total
GHANPUR	25	53.19	22	46.81	47
JADUNATHPUR	28	56	22	44	50
JEIRAT	26	54.17	22	45.83	48
DAKAPADAR	48	97.96	1	2.04	49
ANDALPURI	49	98	1	2	50
KHUJANPALI	29	59.18	20	40.82	49
SAHASPUR	12	25	36	75	48
BHOGRAPALI	20	40	30	60	50
PATHARKATA	3	6	47	94	50
THANAPALLY	33	67.35	16	32.65	49
PUJILADU	11	26.19	31	73.81	42
OSTAPURA	38	79.17	10	20.83	48
BHAGAMUNDA	44	88	6	12	50
RAHGAMATIA	49	98	1	2	50
BENTAPADA	49	94.23	3	5.77	52
BAIRAGIPALI	18	38.3	29	61.7	47
Total	482	61.87	297	38.13	779

This table represents the Annual Family income of the respondents. 61.87% has annual family income below 11,000 and only 38.13% above 11,000. So 61.87% of the respondent families are below the poverty line. Respondent families below the poverty line is above 90% in Dakapadar, Andalpuri, Rahgamatia and Bentapada.

TABLE 11: KNOW ABOUT A DISEASE CALLED MALARIA?

Name of the Village or Hamlet	Yes	%	No	Total
GHANPUR	47	100	0	47
JADUNATHPUR	50	100	0	50
JEIRAT	48	100	0	48
DAKAPADAR	49	100	0	49
ANDALPURI	50	100	0	50
KHUJANPALI	49	100	0	49
SAHASPUR	48	100	0	48
BHOGRAPALI	50	100	0	50
PATHARKATA	50	100	0	50
THANAPALLY	49	100	0	49
PUJILADU	42	100	0	42
OSTAPURA	48	100	0	48
BHAGAMUNDA	50	100	0	50
RAHGAMATIA	50	100	0	50
BENTAPADA	52	100	0	52
BAIRAGIPALI	47	100	0	47
Total	779	100	0	779

This table shows whether people know about a disease called malaria or not. We found that 100% respondents know about a disease called malaria.

TABLE 12: SIGNS AND SYMPTOMS OF MALARIA?

Name of the Village or Hamlet	Fever	Head and body ache	Shivering and chill	Sweating	Vomiting	Others	Total
GHANPUR	21	26	-	-	3	3	47
JADUNATHPUR	46	32	-	7	-	-	50
JEIRAT	38	17	-	-	7	1	48
DAKAPADAR	33	5	15	4	9	10	49
ANDALPURI	50	34	22	21	4	-	50
KHUJANPALI	49	-	48	-	-	-	49
SAHASPUR	29	4	-	-	-	17	48
BHOGRAPALI	17	14	2	-	-	24	50
PATHARKATA	50	20	-	-	-	-	50
THANAPALLY	37	36	2	1	8	21	49
PUJILADU	38	35	-	-	-	-	42
OSTAPURA	42	33	-	11	1	16	48
BHAGAMUNDA	50	5	-	-	3	3	50
RAHGAMATIA	50	18	16	35	8	-	50
BENTAPADA	50	33	7	22	11	-	52
BAIRAGIPALI	35	30	-	-	8	4	47
Total	635 (81.51%)	342 (43.90%)	112 (14.38%)	101 (12.97%)	62 (7.96%)	100 (12.84%)	779

This table represents the knowledge about the signs and symptoms of malaria of the respondents. Highest of 81.51% respondents identified fever as a symptom of malaria followed by head and body ache 43.90%, Shivering and chill 14.38%, Sweating 12.97%, Others 12.84% and Vomiting 7.96%. This shows that the respondents have good knowledge on signs and symptoms of malaria.

TABLE 13: TEST NEED TO BE DONE TO DETECT MALARIA:

Name of the Village or Hamlet	Blood test	%	Others	%	DK	%	Total
GHANPUR	28	59.57	-	-	19	40.43	47
JADUNATHPUR	32	64	-	-	18	36	50
JEIRAT	36	75	6	12.5	6	12.5	48
DAKAPADAR	36	73.47	-	-	13	26.53	49
ANDALPURI	50	100	-	-	-	-	50
KHUJANPALI	49	100	-	-	-	-	49
SAHASPUR	46	95.83	-	-	2	4.17	48
BHOGRAPALI	19	38	2	4	29	58	50
PATHARKATA	14	28	1	2	35	70	50
THANAPALLY	42	85.71	2	4.08	5	10.21	49
PUJILADU	37	88.1	-	-	5	11.9	42
OSTAPURA	41	85.42	-	-	7	14.58	48
BHAGAMUNDA	38	76	-	-	12	24	50
RAHGAMATIA	50	100	-	-	-	-	50
BENTAPADA	41	78.85	-	-	11	21.15	52
BAIRAGIPALI	39	82.98	2	4.26	6	12.76	47
Total	598	76.76	13	1.67	168	21.57	779

This table represents the knowledge of respondents on the tests needs to be done to detect malaria. A high of 76.76% respondents said that blood test needs to be done followed by don't know 21.57% and others 1.67%. In others people said mostly about urine test the percentage of which is negligible.

TABLE 14: CAUSE OF MALARIA

Name of the Village or Hamlet	Mosquito Bite	%	Malaria parasite	Unsanitary environment	Drinking unsafe water	Others	DK	%	Total
GHANPUR	45	95.74	-	1	-	1	1	2.13	47
JADUNATHPUR	43	86	1	-	-	-	7	14	50
JEIRAT	47	97.92	-	-	-	1	-	-	48
DAKAPADAR	39	79.59	-	7	-	-	9	18.37	49
ANDALPURI	50	100	-	-	-	-	-	-	50
KHUJANPALI	-	-	49	-	-	-	-	-	49
SAHASPUR	24	50.00	-	-	-	10	13	27.08	48
BHOGRAPALI	22	44.00	-	-	-	1	28	56	50
PATHARKATA	27	54.00	-	18	-	-	4	8	50
THANAPALLY	49	100	1	-	1	-	1	2.04	49
PUJILADU	21	50.00	16	-	-	-	5	11.90	42
OSTAPURA	38	79.17	-	-	1	-	9	18.75	48
BHAGAMUNDA	25	50.00	3	-	-	2	19	38	50
RAHGAMATIA	50	100	-	-	-	-	-	-	50
BENTAPADA	43	82.69	-	-	-	-	9	17.31	52
BAIRAGIPALI	-	-	9	4	-	4	30	63.83	47
Total	523	67.14	79	30	2	19	135	17.33	779

This table represents the knowledge of respondents on cause of malaria. A high of 67.14% identified the cause of malaria as Mosquito bite followed by 17.33% said that they do not know the answer. We also have few answers like malaria parasite, Unsanitary environment, drinking unsafe water and others.

TABLE 15: MODE OF TRANSMISSION OF MALARIA

Name of the Village or Hamlet	Mosquito bite	%	Water	%	Others	%	DK	%	Total
GHANPUR	40	58.11	-	-	-	-	7	14.89	47
JADUNATHPUR	35	70	-	-	-	-	15	30	50
JEIRAT	16	33.33	-	-	22	45.83	10	20.84	48
DAKAPADAR	25	51.02	-	-	3	6.12	21	42.86	49
ANDALPURI	50	100	-	-	-	-	-	-	50
KHUJANPALI	49	100	-	-	-	-	-	-	49
SAHASPUR	17	35.41	-	-	11	22.92	20	41.67	48
BHOGRAPALI	11	22	-	-	8	16	31	62	50
PATHARKATA	44	88	2	4	-	-	4	8	50
THANAPALLY	30	61.23	4	8.16	4	8.16	11	22.45	49
PUJILADU	34	80.75	-	-	-	-	8	19.05	42
OSTAPURA	28	58.33	-	-	9	18.75	11	22.92	48
BHAGAMUNDA	44	88	-	-	-	-	6	12	50
RAHGAMATIA	50	100	-	-	-	-	-	-	50
BENTAPADA	49	94.23	-	-	-	-	3	5.77	52
BAIRAGIPALI	38	80.85	1	2.13	1	2.13	7	14.89	47
Total	560	71.89	7	0.9	58	7.45	154	19.77	779

This table represents the mode of transmission of malaria as told by the respondents. A high of 71.89% said mosquito bite followed by 19.77% said they do not know the answer, 0.9% said that water is the mode of transmission of malaria. 7.45% stated other modes of transmission of malaria.

TABLE 16: TREATMENT OF MALARIA

Name of the Village or Hamlet	Chloroquine	%	Medicine	%	Witchcraft	Herbal – Medicine	Others	DK	Total
GHANPUR	19	40.43	25	53.19	-	-	1	2	47
JADUNATHPUR	14	28	15	30	-	4	3	14	50
JEIRAT	17	35.42	18	37.5	-	-	3	10	48
DAKAPADAR	32	65.31	1	2.04	-	2	-	14	49
ANDALPURI	50	100	-	-	-	-	-	-	50
KHUJANPALI	5	10.21	3	6.12	-	41	-	-	49
SAHASPUR	2	4.17	10	20.83	-	-	7	29	48
BHOGRAPALI	9	18	8	16	-	-	2	31	50
PATHARKATA	10	20	36	72	-	-	-	4	50
THANAPALLY	17	34.69	25	51.02	-	-	1	6	49
PUJILADU	31	73.81	5	11.91	-	-	-	6	42
OSTAPURA	12	25	35	72.92	-	1	-	-	48
BHAGAMUNDA	22	44	19	38	3	-	-	6	50
RAHGAMATIA	27	54	23	46	-	-	-	-	50
BENTAPADA	25	48.08	26	50	-	-	-	1	52
BAIRAGIPALI	15	31.92	28	59.57	-	-	1	3	47
Total	307	39.41	277	35.56	3	48	18	126	779

This table represents the treatment of malaria as told by the respondents. 39.41% said that Chloroquine is the treatment of malaria where as 35.56% said that some medicines should be taken. We also have few other answers like Don't know, which craft, herbal medicine and others out of which don't know is the most common answer 126 respondents (16.17%).

TABLE 17: PLACE OF TREATMENT WHILE SUFFERING FROM FEVER

Name of the Village or Hamlet	Institutional	%	Private Practitioners	Quack	Home remedy	FTD	Others	DK	Total
GHANPUR	-	-	-	1	-	-	28	18	47
JADUNATHPUR	50	100	-	-	-	-	-	-	50
JEIRAT	44	91.67	-	-	1	-	-	3	48
DAKAPADAR	34	69.39	1	2	7	-	1	4	49
ANDALPURI	50	100	-	-	-	-	-	-	50
KHUJANPALI	49	100	-	-	-	-	-	-	49
SAHASPUR	16	33.33	32	-	-	-	-	-	48
BHOGRAPALI	36	72	11	-	-	-	1	2	50
PATHARKATA	43	86	2	-	4	-	1	-	50
THANAPALLY	25	51.02	3	-	11	-	8	2	49
PUJILADU	37	88.10	-	-	-	-	2	3	42
OSTAPURA	45	93.75	1	-	2	-	-	-	48
BHAGAMUNDA	42	84.00	4	2	1	-	-	1	50
RAHGAMATIA	10	20	-	-	-	-	40	-	50
BENTAPADA	31	59.61	17	2	2	-	-	-	52
BAIRAGIPALI	14	29.79	-	-	-	-	33	-	47
Total	526	67.52	71	7	28	-	114	33	779

This table represents the answer to question on the place of treatment they visit while suffering from fever which is mostly malaria. The most common answer was Institutional (67.52%). There are also few answers like Private practitioners, quack, home remedy, fever treatment depot and others. Some persons also could not answer to the question. We put them under don't know column.

TABLE 18: PEOPLES ACTIONS TO PREVENT MALARIA IN THE AREA

Name of the Village or Hamlet	Sanitary Measures	Mosquito Net	Insecticides spray	Mosquito repellant use	Other	Nil	Total
GHANPUR	1	-	-	-	-	46	47
JADUNATHPUR	-	15	1	5	11	18	50
JEIRAT	17	8	-	-	4	19	48
DAKAPADAR	8	6	3	-	-	32	49
ANDALPURI	23	-	-	-	3	24	50
KHUJANPALI	-	-	-	-	-	49	49
SAHASPUR	8	-	-	-	-	40	48
BHOGRAPALI	1	14	-	-	-	35	50
PATHARKATA	-	-	-	-	-	50	50
THANAPALLY	9	10	-	-	-	30	49
PUJILADU	3	-	-	-	-	39	42
OSTAPURA	8	2	-	1	11	26	48
BHAGAMUNDA	-	15	-	1	17	17	50
RAHGAMATIA	-	-	-	-	15	35	50
BENTAPADA	10	16	-	-	9	17	52
BAIRAGIPALI	22	13	-	-	7	5	47
Total	110 (14.12%)	99 (12.70%)	4	7	77 (9.88%)	482 (61.87%)	779

This table describes the people's action to prevent malaria in the area. In most cases there are no actions to prevent malaria in the area (61.87%). In some places (10-15% each) people have taken sanitary measures and used mosquito nets. In negligible cases people sprayed insecticides and used mosquito repellents.

TABLE 19: WHERE DO PEOPLE COLLECT MALARIA MEDICINE FROM?

Name of the Village or Hamlet	Govt. Health Facility	%	Private Practitioner	Quack	FTD	Others	DK	Total
GHANPUR	-	-	-	-	25	-	22	47
JADUNATHPUR	50	100	-	-	-	-	-	50
JEIRAT	15	31.25	-	-	1	32	-	48
DAKAPADAR	8	16.33	31	1	-	6	3	49
ANDALPURI	50	100	-	-	-	-	-	50
KHUJANPALI	49	100	-	-	-	-	-	49
SAHASPUR	18	37.5	30	-	-	-	-	48
BHOGRAPALI	43	86	6	-	-	-	1	50
PATHARKATA	50	100	-	-	-	-	-	50
THANAPALLY	43	87.76	1	-	2	1	2	49
PUJILADU	2	4.76	-	-	-	40	-	42
OSTAPURA	27	56.25	-	-	3	18	-	48
BHAGAMUNDA	18	36	5	-	27	-	-	50
RAHGAMATIA	-	-	-	-	-	50	-	50
BENTAPADA	44	84.61	5	1	-	2	-	52
BAIRAGIPALI	5	10.64	-	-	-	39	3	47
Total	422	54.17	78	2	58	188	31	779

This table represents the place from where people being malaria medicines. People mostly found to be collecting malaria medicine from Government Health Facility (54.17% cases). In some cases people are found to collect the same from miscellaneous sources like private practitioners, fever treatment depots, quacks and others. Some answers of don't know is also found here also.

TABLE 20: FREQUENCY OF HEALTH WORKERS VISIT?

Name of the Village or Hamlet	0-15 Days	%	15-30 days	1-6 months	6+ months	Never	%	Total
GHANPUR	-	-	-	-	-	47	100	47
JADUNATHPUR	-	-	-	7	6	37	74	50
JEIRAT	1	2.08	-	-	4	43	89.59	48
DAKAPADAR	-	-	16	20	1	12	24.29	49
ANDALPURI	-	-	-	-	-	50	100	50
KHUJANPALI	49	100	-	-	-	-	-	49
SAHASPUR	44	91.67	3	1	-	-	-	48
BHOGRAPALI	-	-	6	1	2	41	82	50
PATHARKATA	-	-	-	-	-	50	100	50
THANAPALLY	27	55.10	1	-	-	21	42.86	49
PUJILADU	40	95.24	-	-	-	2	4.76	42
OSTAPURA	48	100	-	-	-	-	-	48
BHAGAMUNDA	-	-	24	-	-	26	52	50
RAHGAMATIA	-	-	-	-	50	-	-	50
BENTAPADA	9	17.31	-	-	27	16	30.77	52
BAIRAGIPALI	-	-	-	-	5	42	89.36	47
Total	218	27.98	50	29	95	387	49.68	779

This table represents the frequency of visit of the health workers to the area. In about half cases people reported that they never visit the area (49.68%). 27.98% reported that they visit in 0-15 day interval. Some also reported their visit in 15-30 day interval, 1-6 month interval and 6 month interval. The ideal 0-15 day interval is very low.

VII. THE STUDY TEAM

Person power

Qualifications

Consultants:

Mr. K. K. Swain	MA, Economics (Utkal)
Mr. Ajay Tripathy	BA, DCHM
Md. J. Akhter	MBBS (Utkal)

Principal Investigator

Himansu Sekhar Dutta	MSc, Statistics (Utkal)
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Field Supervisor cum Tabulator

Mr. Nirakar Sahu	BA
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Field Investigators

Malaria centres of OVHA

VIII. LIMITATIONS:

During these survey we have certain limitations that may have affected the study results. These limitations were:

1. As the sample size is small, i.e. 779 respondents were covered it may have affected the study results.
2. All though utmost care has been taken to collect accurate and authentic data, some amount of interviewer bias and mis reporting by respondents can not be ruled out. This may have affected the study results.

IX. CONCLUSIONS AND RECOMMENDATIONS:

The literacy rate of the respondents is 59.82% among those 12.66% have gone above matric. The population have 17.46% SC, 35.94% ST, 31.71% OBC and the rest General caste. While enquiring about the respondents occupation we found that 23.75% are household labours, 39.92 agriculture other categories being insignificant percentage. 61.87% of the population of the area are below poverty line. Due to poverty and deprivations of essential needs, the tribal people's living condition is very poor.

While enquiring about the KAP level of the respondents on malaria we found that 100% heard about the disease called malaria. About signs and symptoms of malaria Most of Them Identified Fever followed by Headache and body ache. When asked about the test that needs to be done to detect malaria about 76.76% said, "Blood test" and most of the rest said "Don't

know”. About cause of malaria majority said “mosquito bite” and most of the rest do not know the cause. About mode of transmission 71.89% said “Mosquito bite and most of the rest did not know the mode of transmission. About knowledge of treatment about 39.41% said “Chloroquine” and 35.56% said “Medicine”. About place of treatment 67.52% preferred institutional treatment. About action of people to prevent malaria in the area majority have no action followed by very few cases of sanitary measures, use of mosquito nets etc. About place of availability of malaria medicine 54.17% said Government Health Facility. About Frequency of Health Workers visit we found that 49.68% never visit followed by 27.98% visit in 0-15 day intervals.

Knowledge of malaria is moderate but the malaria prevention activity by people is very poor. The malaria workers/health workers often never visits and if visits, does so occasionally.

Further it can be concluded that the situation of malaria, its extent and magnitude is quite deplorable in the area. The reason may be attributed to various factors. Low level of educational status, rampant ignorance about the cause, treatment and prevention of malaria, poor socio economic background contributes a lot to the cause of malaria. Besides this indifferent attitude towards health care services provided by Government, which is absolutely negligible for the public compounded the situation dramatically. Inadequate health care services that added by people’s ignorance with socio economic instability makes the disease more infectious in the region. The KAP study indicates that in the study villages the services provided by Govt. is quite dismal.

The study compels us to devise a good number of suggestions in strengthening the actions and interventions for control of malaria. Regular and periodic intervention in the form of health education to bring an attitudinal and behavioural change and provision of better health care services in the study villages can only bring about a qualitative change in control of malaria in the study region.

It is basic knowledge for dissemination to all that man mosquito contact is to be avoided and vector mosquitoes should be prevented to breed in water for arresting their proliferation. This can easily be achieved through personal protection by making breeding places unsuitable for mosquito breeding by the local bodies or project authorities by elimination. Covering, modification, introduction of biological control agents or treatment with larvicides and by making facilities available for an early treatment of malaria cases will be useful. Educating people, training of officials that engaged in developmental activities and incorporation of health component in all developmental projects by all concerned could do this.

Providing water supply and disposal should be done. Improvement of rainwater drainage is a must. Source reduction of peri-domestic water bodies by drainage will help tremendously in decreasing of mosquito breeding. Indoor spray of chemicals should be done in and around the village. Weekly anti-larval measures should be done.

Apart from the above, the following measures can also be useful. Door to door visits by the health workers in the malaria endemic areas should be encouraged to impart education to the family. By the help of traditional folklore and street plays community should be imparted education. School children with school health programmes should be imparted knowledge on malaria.

Voluntary organisations of the area can take up presumptive treatment of cases with or without infrastructural support. Clearly acceptable and accurate message should be developed by the organisations realising custom and cultures of the community to help educate the community in malaria control.

Apart from these vector control activities can also be useful. Voluntary organisations can take up anti-larval measures and environmental sanitation. They can also promote environmental measures. Work in co-ordination and collaboration with Government will help in successful intervention of the programme.

Nowadays the malaria control strategy is more or less primary health care oriented approach. So as to ensure the linkages and involvement of the community in building up the first line of health care is of inescapable necessity.

To make the malaria control activities more effective and result oriented the following suggestions are made.

- The community must be accepted at all levels of control strategy as an active partner.
- Community leaders should be involved in planning and organisation of activities.
- The focus of the activities should not be confined only providing package of services but empowering them to participate in the decision making process.

Empowerment of the community is essential in control of malaria. To facilitate community capacity building the following measures will be useful.

- Providing knowledge on malaria, its cause, treatment and prevention.
- Stressing the importance of early diagnosis and treatment.
- As the PF% is quite high the malaria control measures should take into account the above fact.
- It is quite difficult for Government alone to achieve good result in control and prevention of malaria. So Government should find suitable ways of involving NGOs of the area in the activities of control and prevention of malaria.
- NGOs of the area should take initiative in starting malaria control and prevention activities.
- Mosquito net use should be promoted among the population.

People in some places are dependent on quacks for treatment of malaria that could not cure the disease. Often incomplete doses are taken for malaria. Once fever subsides people often stop taking medicines.

- To aware people more.
- To change the attitude of people for check up and blood testing by qualified doctors.
- To promote immediate treatment
- To take complete doses
- Accumulation of wastewater should be stopped.
- As we have not tested the DDT response in the area so it can be used as first choice. If it is not effective then other chemicals can be sprayed.

GUIDELINES FOR REPORTING FOR MALARIA CENTRE HOLDERS

All malaria centre holders are requested to follow the following guidelines for reporting purpose.

1. The project period of the malaria centres for this year is 1st November 2001 to 30th September 2002.
2. You should submit activity reports in two parts for the period of November 2001 to February 2002 and March 2002 to September 2002 respectively. After the end of project period you should send the audit report and utilisation certificate within 15 days of completion of the project period.
3. The malaria surveillance data should be maintained for each month in the malaria form given below. This should also be send along with the activity reports.

Area	Population	BSC	BSE	+ VE	Pv	Pf	Others	PT	RT

The following enclosures should be submitted along with the reports.

1. Xerox copies of registration records of 20 village meetings.
2. Xerox copies of certificates from Head Master of schools where 10 malaria education programmes were conducted.
3. Xerox copy of Surveillance Records (in the format).
4. Records of referral of complicated malaria cases to nearest referral unit, if any
5. Photographs of activities.

Terminology

BSC:	Blood Slides Collected
BSE:	Blood Slides Examined
+ Ve:	Malaria Positive
Pv:	Plasmodium Vivax
Pf:	Plasmodium Falciparum
PT:	Presumptive Treatment Given
RT:	Radical Treatment Given