



SOCIO-ECONOMIC AND BEHAVIOURAL STUDIES ON HEALTH

Household Spending on Curative Health Care in a Tribal Block of Madhya Pradesh 1987-1988

This study was planned to study the seasonality in sickness, treatment seeking behaviour and to estimate health expenditures by tribal communities of Madhya Pradesh.

The study was conducted in two tribal villages of Narayanganj block of Mandla district of Madhya Pradesh during 1987-88. One of these villages was nearer to PHC (7 kms), while the other one was situated at distance from the PHC (17 kms). Initially, a baseline survey of the population living in these villages was carried out. In the survey, household was taken as a unit of study. Two schedules were used to collect data on social, demographic and household income variables, as well as health expenditure incurred for each family member during the last one year. After the baseline survey, each household was visited fortnightly to collect data on morbidity, mode of treatment and expenditure incurred on treatment.

Total population covered in the study was 1,390 individuals. Nearly three-fourths of the population was illiterate. The main occupation of households was cultivation (57 %), followed by wage labour (30%). But about three-fourths of the households were having agricultural land less than 5 acres. The annual income of 73 % of households was less than Rs 6,400, which indicated the prevalence of high poverty in study population. Health expenditure was about 3 % of income for comparatively high income households, and increased to 10 % for low economic status households. The overall average household expenditure on health was 3.4 % of household income, i.e. Rs 192 per household per annum was spent on curative health care. It was observed that average annual expenditure incurred per sick person on different heads of treatment was about Rs 47. This included Rs 27.0 on medicine, Rs 7.5 on consultation and Rs 2.5 on transport. Per sick person expenditure on health care was modestly higher among higher income groups (Table 1).

Table 1: Sickness, sickness episodes, treatment seeking and average spending per sickness episodes

Household annual income groups (Rs.)	Total sick persons	Total sickness episodes	% sickness episodes received treatment	Av. Expenditure (Rs.)	% spent on curative health care
2,265	217	608	47.9	43.3	10.25
2,266-3,500	214	585	45.5	44.5	6.19
3,501-6,400	267	708	51.8	45.3	3.8
6401	283	698	55.4	54.4	1.93
Total	981	2598	49.5	47.3	3.4

Although it is widely believed that tribes generally prefer to go to traditional healers for the treatment of disease, the data suggested that, beside the confidence that tribal had in traditional treatment, their low economic status might also be an important factor since, often, they do not pay traditional practitioners at the time of treatment. For example, according to Laxman Singh, a 53 years old Gond, resident of village nearer to PHC, guardian of a family of seven members and whose wife passed away due to lack of proper and timely treatment reported that *'It is only with great difficulty that we manage our daily meals. We do not have enough money to spare for the treatment of sickness until it becomes most urgent and unavoidable.'*

It was observed that a chance of getting treatment was higher for head of the household than any other person in the household (by about 10 %). This bias was observed regardless of household income. The higher probability of treatment of head of household symbolizes the special status of household head. Table 2 shows that household heads who were literate took treatment more often than illiterate heads belonging to the same income groups. The percentage of treated cases in both groups increased with household income. If we compare the difference between treated heads of households according to literacy level and income of the household, the gap increases. This implies that literacy along with income plays significant role in decision making regarding the treatment taken by the head of the household.

Table 2: Proportion of illnesses treated

Household annual income groups (Rs.)	Head of household			Total sickness	Other members	
	Treatment given				Treatment given	Total sickness
	Illiterate	Literate	Total			
2,265	51.0	61.5	54.8	146	45.7	462
2,266-3,500	54.9	64.8	58.8	136	24.9	449
3,501-6,400	54.7	67.7	59.9	157	54.3	551
6401	65.4	81.8	71.9	167	56.2	522
Total	56.7	69.7	61.7	606	51.3	1984

Among different kind of patients, pregnant women were given highest priority for treatment (75 %, 15 cases out of 20), followed by lactating mothers (67 %), pre-school children (66%) and aged persons (37%). According to researchers' observation, the priority of treatment were fixed according to the age of patient as adult male, adult female, male child, female child, and aged person. The details of analysis of data according to age and sex of the patient are given in Mishra et al. (1988).

Tribal living in remote village spent more money on their curative health care. The average difference per patient was about Rs 11. They had to pay more for medicines, consultation, transport and so on. For example, the cost of transport to the PHC from a more distant village was more than double the cost from the nearer village-which may affect the decision for treatment at the PHC. People find it difficult to come to the PHC more often and, therefore, might had spent more money on medicine, consultation, special diet and medical checkups for quicker relief.

To study seasonal variation in the treatment of sickness, the total observation period was classified into three seasons: July to October, November to February, and March to June. The seasonal periods were selected keeping in view the incidence of diseases. While number of the episodes of sickness was more in July to October, the percentage of illnesses treated was the least. Observations were similar for all households irrespective of different income groups, though the percentage of treated episodes increased according to the income of the household. The reason behind this

trend might be that tribal economy is mainly depend on agricultural products and they are relatively better off during the months of March to June, i.e. in harvesting period. This fact was substantiated by the figures shown in the last column of Table 3. The expenditure per episode during March to June was about twice the expenditure observed in July to October.

During the rainy season when the accessibility of the PHC becomes difficult, economically weaker people preferred to consult 'Guniya', the traditional medical practitioner. Form the same income group of household in both villages (distant/near), the percentage of episodes of sickness treated by 'Guniya' was lowest in the months of March to June and highest in the months of July to October. It was also pointed out that percentage of episodes treated by private doctors/medical stores was highest during March to June and lowest in July to October. There was little variation in the proportion of illnesses treated at the PHC according to the distance of the village from PHC. These observations indicated that, perhaps people's awareness/faith in treatment at the PHC was poor; they would not have much faith in the treatment given by 'Guniya' but economic constraints and approachability problems compeled them to go to 'Guniya'; and whenever they had money they availed the best possible medical treatment. In this connection, the case of Kamal Singh might be cited. He was a resident of the distant village, aged 35, a wage-earner in a family of six, and suffering from prolong illness (cough and chest pain). He remarked: *'at the PHC we have to wait for hours together with resultant wage loss. Moreover, there we are neither examined properly nor given the necessary medicines free. Most of the times we are asked to buy medicine from the market. So consulting 'Guniya' for treatment by borrowing some cash and on deferred payment is preferable'*.

Thus from the foregoing discussion, it emerged that poverty was one of the significant factors affecting curative health care behaviour. High illiteracy and inhospitable terrain were also important factors affecting their decision making. In general, families gave first priority to treating the illness of earning members. The traditional medicine system was opted for only when access to private doctors/ medical stores becomes difficult and they could not afford to pay cash.

Table 3: Expenditure per episodes of sickness according to seasons and household income

Household Annual income groups (Rs.)	Households studied	July to October				November to February				March to June			
		Average household income	% of sickness episodes to all seasons episodes	% of treated to total sickness episodes	Exp. Per sickness episodes (Rs)	Average household income	% of sickness episodes to all seasons episodes	% of treated to total sickness episodes	Exp. Per sickness episodes (Rs)	Average household income	% of sickness episodes to all seasons episodes	% of treated to total sickness episodes	Exp. Per sickness episodes (Rs)
2,265	55	400.7	42.6	41.3	12.6	520.2	23.2	50.2	10.3	731.4	34.2	54.3	22.6
2,266-3,500	53	625.5	42.5	43.6	12.9	1013.1	24.1	52.5	10.3	1261.5	33.5	57.7	24.8
3,501-6,400	69	1139.8	43.5	46.6	13.0	1631.4	20.2	56.6	10.6	1837.6	36.4	65.5	25.5
6401	65	3513.0	41.7	50.2	17.9	4276.1	22.4	59.7	15.4	4569.3	36.0	71.4	31.8
Total	242	1496.6	42.5	45.6	14.2	1953.9	22.4	54.9	11.7	2193.7	35.1	62.9	26.4



Economic Aspects of Health Care among Tribes of Madhya Pradesh and Chhattisgarh 1995-2000

This study was planned to examine the economic aspects of health care among poor tribes of erstwhile Madhya Pradesh. The centre conducted surveys among different tribal groups during 1995-2000 to study the economic aspect of health care among them. The surveys were planned to estimate household income, expenditure pattern, treatment seeking and expenditure on treatment of sickness. The details of study population, area, survey year, etc are given in Table 4. The data was collected by trained investigators using structured schedules. In-depth data pertaining to their varied sources of income, expenditure, duration of illness, treatment seeking and places of treatment were elicited.

Table 4: The details of studied tribes, areas and sample size

Tribes	Study area (District)	Year of survey	Sample size (households)
Pando	Sarguja	1995-96	315
Kodaku	Sarguja	1997-98	403
Birhor	Raigarh	1998	112
Sahariya	Sheopur	2000	214
Baiga	Mandla	2000	362

Sources of Income: Though, most of tribal population directly and indirectly engaged in agriculture or its allied activities, but a good proportion of them worked as labourer. The main sources of household income in Pando tribe were labour (31%) and cultivation (28%), whereas agriculture labour was the main source of income for Kodaku (65 %) and Sahariya (68 %) tribes. The rope making and its marketing was the main source of livelihood for Birhors, about 70 % of them accrued their income form it. About 56 % Baigas households received their earning form cultivation, besides this other important sources of their income include mask making, trading cattle and birds.

Annual income and expenditure: In these surveys attempts were made to estimate household income and to study tribal expenditure pattern. The estimated annual income of these tribes varied from Rs. 4,611 for Birhors to Rs. 14,000 for Sahariyas. As evident from table 5 that the estimated income was lowest for Birhors, this would be because of most of Birhors were engaged in rope making activities. The estimated annual household income was Rs. 6,771, Rs. 9,012 and Rs. 10,496 for Baigas, Kodakus and Pandos respectively. Tribals spent most of their income and hardly had any annual savings. The most of their expenditure was on food items, the expenditure on food items varied from 64 % in Sahariyas to 85 % among Baigas. The other important items of expenditure were clothing and intoxicants (tobacco and alcohol).

Table 5: Estimated annual income and expenditure

Tribes	Estimated annual income and expenditure (Rs.)		Proportion of income spent (%)	Proportion of total expenditure on food items (%)
	Income	Expenditure		
Pando	10,496	10,160	96.8	65.0
Kodaku	9,012	8,544	94.8	82.6
Birhor	4,611	4,582	99.4	81.5
Sahariya	14,002	13,387	95.6	64.0
Baiga	6,772	6,599	97.4	85.0

Mode of treatment and economic loss associated to sickness

To examine treatment seeking behaviour of tribal communities and their expenditure on curative health, surveys were conducted in three months. All household were re-visited fortnightly to collect information on morbidities and treatment sought, if any. Thus surveys included information on all sick members in household and expenditure on treatment of all persons who become sick in these three months. As far as treatment concerned most of sick tribal people preferred treatment by private doctors. Private sources as a mode of treatment varied from 23 % to 80 % among Baigas and Sahariyas respectively. About half of Birhors and more than one-third Kodakus and Pandos

received treatment for their illness from private facilities. One-fourth Pandos and Baigas got treated at Government sources and only 10 % Birhor and Sahariya visited Government facilities for treatment. These studies also illustrated that some tribes preferred traditional healers (Ojhas / gunia) for treatment. About 40 % Pandos and Birhors and one-third Baigas sick persons received treatment from these traditional healers. Tribal population who did not receive any treatment or received it from traditional healers reported financial constraints as a major reason for not availing any treatment.

Table 6: Sources of treatment and expenditure per patient and wage loss due to illness

Tribes	Sources of Treatment of illness*			Per patient expenditure	Wage loss due to sickness
	Government	Privates	Traditional healers		
Pando	25.3	34.5	40.1	114.5	62.0
Kodaku	20.5	38.5	18.7	124.0	59.5
Birhor	10.0	50.0	40.0	43.5	44.5
Sahariya	10.0	80.0	2.0	328.4	140.1
Baiga	27.5	23.0	33.0	77.4	53.7

* Excluding no-treatment, self and other sources

The study showed that money spent on curative health varied from 2 - 5 % of household income. During three months of survey, the average per patient expenditure varied from Rs. 43.5 in Birhors to Rs. 328.4 in Sahariyas. This clearly illustrated that tribes who had relatively better annual income also spent more on their health. Similarly, the wages loss due to sickness was highest among Sahariyas and it was lesser among Birhors, as Birhors also had lowest household income. Wage losses were quite higher among Sahariyas as compared to other tribes and this would have been because most of them worked as labourer (daily wage workers).

From the above discussion it emerged that most of tribal households were living a life of bare subsistence. They spent almost whole of their annual income on food

items, and had meager proportion for health spending (Table 6). Some of them, who did not receive any treatment or depend on indigenous system, were mainly due to lack of money. Thus it would be a worthwhile to mention here that merely establishing a primary health centre for every 20,000 and a sub centre for every 3,000 population in tribal areas may not be enough to improve the health standard of tribal people, unless their economic status is not effectively improved.



Some Demographic and Cultural Dimensions Pertaining to MCH Among the Tribes of Undivided Madhya Pradesh 1991-2000

On the basis of Pre-agriculture level of technology, low literacy and stagnant/diminishing population, the Government of Madhya Pradesh had identified some tribal groups as primitive. These aboriginal groups belong to different ethnic groups and invariably lead an isolated life away from the mainstream population. To understand the social and demographic characteristics of these tribes, the centre conducted the demographic surveys at different point of time and the data generated will help for micro planning and achieving the health targets. In the decade 1991-2000 some, cross sectional studies were conducted in few primitive and non primitive tribes of the state. The data was collected by trained investigators using structure schedules. The details of the studied population, area and year of survey is mentioned in table 7.

In almost all the tribes, majority of the households were of nuclear type with the average size of household ranging from 3.5 among Birhors to 5.5 in Kodakus (Table 8), except Bharias which had reported almost equal proportion of households as nuclear and joint, with average household size was 6 persons.

Table 7: Tribes under study

Sl. No	Tribes	Primitive/non-primitive	District (area of study)	Year
1	Hill korwa	Primitive	Surguja	1989-91
2	Kols	Non primitive	Satna	1990-91
3	Kamars	Primitive	Raipur	1991-92
4	Bahrias of Patakot	Primitive	Chhindwara	1993-94
5	Khairwar	Non-primitive	Sidhi	1993-94
6	Birhors	Primitive	Raigarh	1993-94
7	Pando	Non-primitive	Surguja	1996-98
8	Kodaku	Non-primitive	Surguja	1998-00

Table 8: Type of Household and mean household size

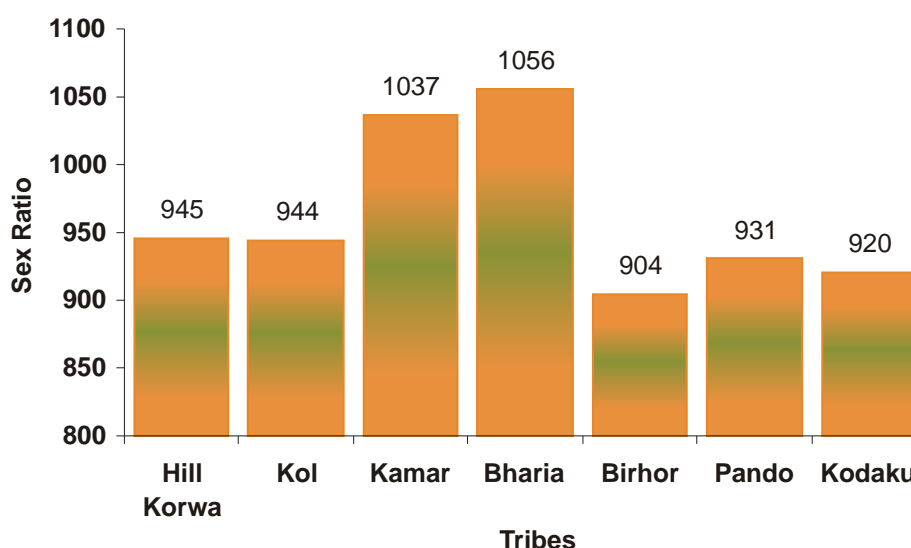
Sl. No.	Tribes	Household studied	Type of household (%)		Mean HH Size
			Nuclear	Joint	
1	Hill korwa	819	62	38	4.3
2	Kols	1296	75	25	5.1
3	Kamars	945	81	19	4.7
4	Bahrias of Patakot	144	45	55	5.9
5	Khairwar	549	66	34	4.9
6	Birhors	247	87	13	3.5
7	Pando	974	61	39	5.3
8	Kodaku	703	56	44	5.5

The broad age distribution suggests that proportion of children was highest among Kamars (42%) and aged population (60+ years) was lowest (4%) among Kamars. While reverse was visualized for the Khairwar tribe (Table 9). The median age ranged from 21 years in Kamars to 28 years in Khairwars. As evident from Fig 1, sex ratio was found lower in all the tribes except Kamar and Bharia.

Table 9: Age distribution of studied population

Sl. no.	Tribes	Population (%) Age groups (years)			Median age
		0-14	15-59	60+	
1	Hill korwa	33.4	61.8	4.8	23.8
2	Kamars	41.9	54.5	3.6	20.7
3	Bahrias of Patakot	40.1	53.8	6.1	22.3
4	Khairwar	31.4	60.8	7.8	27.9
5	Birhors	39.1	54.4	6.5	23.7
6	Pando	38.0	55.7	6.3	22.0
7	Kodaku	39.0	55.4	5.6	22.5

Fig. 1: Sex-ratio among studied population



As evident from table 10 that in all tribes marriage took place before the legal age of 18 and 21 years in females and males respectively. The mean age at first marriage in studied population ranged from 11.9 years to 15.8 years in females and 14.2 years to 19.6 years in males. The inter spouse age difference at first marriage was 3 years approximately. The fertility indicators were calculated for the period three years preceding the survey. Except Hill Korwa, all other tribes had higher fertility. The details of the analysis has been given in Saha KB, Verma A(2006).

Table 10: Age at first marriage and some fertility indicators

SI no	Tribes	Mean age at first marriage (years)		Difference of age at first marriage (M-F)	Mean no. children born	CBR	TFR
		Male (M)	Female (F)				
1	Hill korwa	17.0	14.2	2.8	1.9	26.6	2.9
2	Kols	14.2	11.9	2.3	-	35.2	4.6
3	Kamars	19.6	15.8	3.8	2.6	32.9	3.67
4	Bahrias	18.7	15.6	3.1	2.6	38.3	-
5	Khairwar	17.1	14.2	2.9	2.8	43.5	4.5
6	Birhors	17.6	14.8	2.8	2.2	34.8	4.1
7	Pando	17.9	14.8	3.1	2.3	30.5	3.8
8	Kodaku	17.4	14.5	2.9	2.4	32.3	4.05

Table 11: Mortality estimates among the studied population

Sl.no.	Tribe	CDR	IMR	Reference year
1	Hill korwa	9.2	93.8	1989-91
2	Kols	22.5	158.2	1990-91
3	Kamars	14.5	155.4	1991-92
4	Bahrias of Patalkot	14.9	164	1993-94
5	Khairwar	12.4	142	1993-94
6	Birhors	17.6	102	1993-94
7	Pando	14.6	159	1996-98
8	Kodaku	12.3	115.3	1998-00

Among the mortality indicators the Crude Death Rate (CDR) and Infant Mortality Rate (IMR) were computed for three-year preceding the survey (Table 11). Again it is evident that except Hill Korwa, all other tribes portray higher mortality rates.

Cultural dimensions of Maternal and Child Health (MCH): Comprehensive studies were undertaken to study various aspects of Maternal and Child Health care practices among various primitive and non- primitive tribes of undivided Madhya Pradesh.

TRIBAL HEALTH IN RETROSPECT

Antenatal Care: When a married woman misses her menstruation period for a month or two, she is considered to be pregnant. All of them consider pregnancy as a natural phenomenon and a gift of God. Further the pregnancy is confirmed with vomiting, enlarged abdomen and nausea. During pregnancy Kamar, Hill Korwa and Birhor women does not consume liquor as it is considered by them harmful for the foetus in the womb. Bharias avoid taking minor millets like '*kodo*', '*bazra*' etc. Fish is avoided by Birhors.



A Baiga woman at work in advance stage of pregnancy

Tribal women continue to do all their routine normal duties including fetching of drinking water from distant source, cutting of fire wood, carrying of load even in advanced stage of pregnancy. Usually tribal women do not take any special food during pregnancy but continue to take regular food items. No change is observed in social behaviour of tribal women during pregnancy. Bharias do not visit hilly places. Khairwar women do not see eclipse. They do not visit '*Samsan*' or do not cross a river. Bharia women reported that they take rest for one or two hours at noon during pregnancy. Most of the tribal groups do not feel necessity of antenatal care. Usually no body is contacted. Khairwars contact '*Chamarin*' and Bharias contact '*Bhumka*' in case of any problem.

Delivery Care & Post-delivery Care: All the tribal groups studied, guess the month of delivery by adding nine months to their last date of menstruation period. Birth of a child is considered as a normal phenomenon and generally no preparation is taken for delivery. However, Bharia women mentioned that as the date of delivery comes closer the proposed place/room where the delivery is to be conducted is cleaned and pasted with cow-dung. Delivery among Birhors is conducted in '*Tada*' a hut, made specially for delivery at the backyard of their house. To reduce the pain during delivery, Bharia

women is administered either tea or mixture of water with Jaggery or Turmeric paste or 'Mahua ka rang'. Khairwar women take warm water, milk and 'khichri' to ease the pain



Baiga traditional healer performing magical activities

during delivery while Kamars use hot water for this purpose. In general delivery is conducted by untrained 'dai' or some elderly ladies of their community. Naval cord is cut by 'Chamarin' among Pandos and Khairwars, while 'Kusrain' among Birhors, and 'Dagrin' among Hill-Korwas.

Delivery is conducted mostly in Squatting position by Birhors, Hill Korwas

and Kamars while sitting posture of delivery is preferred by Bharias and Pandos. Khairwars prefer conducting delivery in lying condition on a cot. In Birhors the naval cord is cut by mother herself with the help of bamboo strip while in Hill-Korwas when a male child is born the cord is cut with bamboo strip, while knife or blade is used in case of girl child. Pandos use blade or knife while Bharias and Khairwars use sickle for cutting the cord. The cord is cut when the placenta is delivered. Pandos apply a paste prepared with the powder of the bark of 'Tendu tree', Hill Korwas apply mixture of turmeric and oil, Birhors apply Mahua to the cutted stump. Kamars apply mustard oil and ash mixture, Bharias apply 'Khapra' and oil mixture, Khairwars put Asafoetida mixed with 'chunkat' (dried soil in the lower part of open hearth) and mixed with oil on the stump.

Child Care: Immediately after birth the baby and the mother is given bath with warm water and soap by the mid-wife. If soap is not available ash is used by Pandos. Body of the mother and the new born is massaged with mustard oil by Hill-Korwas and Bharias. Hot fermentation of turmeric powder is given by Kamars and 'Ajwain' fermentation is given by Birhors.

Usually colostrum is not discarded and the baby is breast fed right from the day of delivery. Khairwars discard it to avoid evil eye of witch and it is considered as stored

milk. Lactating mothers are advised to avoid sour foods, jack fruits, green vegetables and some times cold water for six months of delivery as it is considered that they may adversely affect health of the mother and the child. In Khairwars after delivery mother is allowed to consume water on the third day and food items on fourth day. Mostly they have little awareness of post natal care and immunization of mother during pregnancy and of the child after delivery.

Supplementation of food is generally introduced to a baby after sixth months. Pandos introduce supplementary food to a male child on fifth month onwards while for a female child supplementation age is sixth months. Reverse is seen among Khairwars where females are supplemented on fifth month and male child on sixth months.

Family Planing: Though Family planning is ban on primitive tribes but desirous tribal population undergo family planning operations mostly for the sake of incentives. Herbal medicine (traditional preparation) is being used by Birhor and Khairwar women for permanent stoppage of menstruation period after achieving a desired number of offspring. Mostly tribal are aware of vasectomy and tubectomy. But confusion prevails regarding temporary methods. They prefer mostly tubectomy because of the myth that vasectomy may weaken the man and will reduce to a condition where he will not be able to do physical work for the subsistence of the family.

Low age at marriage among the females coupled with high fertility, benign and harmful traditional birth-related practices of having delivery at home, attended by untrained personnel, cutting the umbilical cord by unhygienic instruments, treatment of umbilical stump by oil, discarding the colostrums and lesser utilization of Government health services are responsible for high CDR and infant mortality among these unprivileged population.



An Anthropological Study to Understand the Health Seeking Behavior of Bhils of Madhya Pradesh 1985-1986

A study to understand the Health Seeking Behavior of Bhils of Madhya Pradesh was initiated in 1985 with an overall objective to understand their perception towards health and diseases, associated causes for occurrence of diseases and how do they manage diseases. Also, utilization and availability of different health services was explored.

An attempt was made to study the social process that influence the health seeking behavior. This includes the understanding of the meaning of health and sickness among the tribes and the management of the health problems i.e., the decision making regarding the treatment of sickness or illness. For this, two Bhil dominated villages from Bagh Block of Dhar district were selected in such a way that one village (Agar) has an easy access i.e., near to PHC, the second (Ghogdhadi) a remote one. After census of both villages, 30 families from each village were selected. The data was collected through interviews, observations, discussions etc.

It was found that the Bhils of this area believe that spiritual power governs a man's health and sickness. The occurrence of any disease is only due to effect of an angry or spells of an evil eye or due to vengeance of god. Consequently tribal prefer to take treatment from local health leader (Badwa) i.e. within the inner realm of social set-up. Neither care during pregnancy of any sort was taken, nor any institutional delivery was conducted, nor was any other Maternal and Child Health (MCH) services utilized. Utilization of govt. health services for diseases & MCH were far below the satisfactory level, firstly because the Bhils have more faith in local healer; secondly due to fear of undergoing sterilization forcibly, and thirdly they associated their each disease to evil eye/ spirit / vengeance of god and lack of faith in allopathy.

The present study concluded that the health services provided by the Government were largely ignored while the indigenous folk medicine, the magic sacred medicines were adopted irrespective of the distance of the village from PHC. There is a need to alter the attitude and perception of these tribe to bring about a desired level of health and to promote utilization of govt. health services.



Study of Men as Supportive Partners in Reproductive and Sexual Health: An Investigation among the Khairwars of Sidhi District of Madhya Pradesh 2002-2003

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Household Profile and Personal Profile of the Respondents: Β-A*ÁAABUáx^Sã®
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two-third of the population (66 %) reside in nuclear families.

The mean age of the sample respondents (Currently married males) is calculated to be 31 years and is found to be older than household population by 10 years. The mean age at first marriage for males (17.9 years) exceeds the same for female (16.2 years) by almost two years. But both the age at marriage is below the legal age at marriage set by the constitution. About 69 % of the respondents were found to be literate. Among this literate group about 26 % of them were non-formally educated and about 70 % had studied up to class 10th standard.

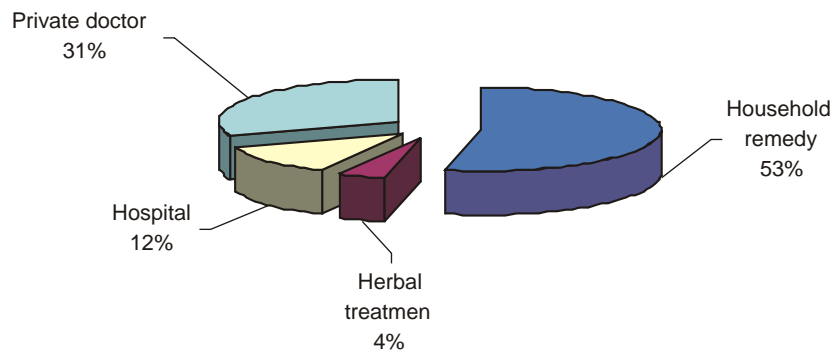
Awareness and Participation of Man in Different Aspects of Reproductive Health :

About 74 % of the respondents have heard about reproductive tract infections (RTI) but very few among them have proper knowledge of its transmission. The commonly reported reproductive morbidities were ulcer in the genitals and white discharge. Only 17 % of the respondents have ever heard about HIV/AIDS and most of them does not have proper knowledge about its mode of transmission and prevention. Regarding causes of infertility a sizeable number of male referred the same due to god's wishes (37 %). About 41 % could not shed any light towards cause of infertility. As regard reproductive health needs of the man it was found that nearly 23 % of the respondents suffered from different sexual health problems. Among them almost three-fourths availed some form of treatment. Only 10 % of them consulted doctors at PHCs. About 30 % seek treatment from private doctors/registered medical practitioners (RMP) available in market places adjacent to their residential villages. Five percent of the respondents also took treatment from compounders at medical shops and the rest took recourse to self treatment or treatment from traditional folk doctors. Even many respondents reported that their wives suffered from one or the other reproductive health problems but handful of them had ever utilized reproductive health services for treatment. As reported about 32 % of the respondents discussed with some person regarding their sexual health problems. The persons consulted were mainly friends (65.1%), wife (39.8%), PHC doctor/health workers (9.6%), traditional healer (20.5%) and others (3.6%).

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Fig.2: type of treatment availed (N=186)



The main reasons cited for not taking interest in the reproductive health problem of the wife are- heavy workload (49 %), presence of others members in the family who can take care of the wife (40 %) and man's ego/ not man's job (40 %). However, out of the total sample males about 71 % of them reported that it is husbands' responsibility to take care of wife's reproductive problems and about 64 % also reported that they are encouraged by their family members to take care of their wife's health problems. But in reality they do not take part in reproductive health matters. Further they also have indifferent attitude towards different sexual health matters, be it a problem related to menstruation, nightfall or other sexual activities of life. About seven percent of them had availed Government health facilities during three months preceding the survey. The reasons cited for not availing the government health facilities were not-felt-need (76.6%), health center not conveniently located (17.9%), non-availability of doctors/health workers (8.8%), medicine not given/rarely given (10.8%) etc. The figures definitely points to the facts that there is a need to generate demands for reproductive health services among the Khairwar males by using a need based IEC strategy. At the same time it is also necessary to strengthen the health delivery system


at the remote areas of their habitat. The study specifically suggested that-

For generation of demand for services it is essential to-

- Strengthen IEC strategies to raise men's awareness of reproductive health.
- Educate young men about sexual responsibility.
- Encourage fathers to share in the daily responsibilities of parenthood.
- Encourage planned families where both parents provide for their children.

And for strengthening health delivery system, it is suggested to-

- Widening outreach services in difficult terrains and maintenance of its consistency.
- Train health professionals to counsel men and couples.
- Provide male oriented services, including condom education and treatment of RTI/STDs/ HIV/AIDS.



**Men's Participation in Reproductive and Sexual
Health: A Study among the Primitive Tribes of
Undivided Madhya Pradesh
2003-2006**

The study aim to generate baseline data on men's knowledge, attitude and practice and participation in different aspects of reproductive health, design need based IEC strategy and make intervention of the same and assess its effect.

The survey was undertaken among 400 currently married males of primitive Baiga tribe of Dindori district of Madhya Pradesh during 2003-06 by canvassing a pre-designed interview schedule. Beside survey a need based men oriented IEC Kits were designed and its intervention was made in the study area for one year regularly and then

assessing the effect of intervention by undertaking resurvey in the study area by adopting a quasi experimental research design such as before and after with control design. Suitable test of significance are undertaken to show the homogeneity of the intervention and control group before intervention and the difference that exist after IEC intervention.

Some of the key indicators and the estimated net intervention effect are shown in table 12. The estimated net IEC intervention effect as shown in the table reveals that awareness for reproductive health has increased considerably among the Baiga men. The mean age at intercourse is significantly lower than their age at first marriage ($t=4.66$, $p<0.001$) suggesting a prevalence of premarital sex relationship widely prevalent among the tribe. In this condition the lower awareness to RTI/STI and particularly HIV/AIDS is a matter of concern. There is significant improvement in awareness to RTI in intervention group (47%) compared to control group (19%) ($Z=4.41$, $p<0.05$), for STI 51% in intervention group compared to 16% in control ($Z=5.64$, $p<0.05$) and for HIV/AIDS it is 70% in intervention group compared to 19% in control ($Z=8.45$, $p<0.05$). The ideal family size concept though hypothetical, but it indirectly influences the actual reproductive outcome of a group. The table shows that the mean ideal family size is significantly higher than children actually born and living ($t=9.596$, $p<0.001$). The main reason for preference towards higher fertility is higher infant and child mortality among them as 44% of the respondents had experienced under 5 child mortality of one or more children in their life. Thus they are less concern for the use of family planning particularly the spacing methods. Though there is a decline in the ideal family size concept with IEC intervention, but the decline is not significant. Further the estimated net intervention effect shows that IEC could improve the awareness to modern family planning by 5%. Though the improvement appears to be small but it is notable, since awareness to family planning was already higher (84%) before intervention. So any increment above such high figure is always difficult. The current use of family planning was also improved by 5%. There is a significant improvement in the awareness to antenatal care services among the intervention group

(65%) compared to control group (38%) ($Z=4.02$, $p<0.05$). About 62% of the respondents also expressed a felt need for reproductive health services for the problem they suffered. The utilization of the government health services has also improved significantly among the intervention group (49%) compared to control group (34%) ($Z=2.16$, $p<0.05$). Thus it is evident that the IEC strategy adopted in the study does have an effect in improving the knowledge, attitude and utilization/participation of the male in the reproductive health and may be replicated to other Baiga villages not studied for wider male participation for improving reproductive health among the tribe.

Table 12: Key indicators

Key indicators	Respondents (Baseline data)	Net IEC intervention effect	Direction of change
Aware of RTI	18%	24.2%	+ ve
Aware of STI	22%	34.2%	+ ve
Aware of HIV/AIDS	10%	48.6%	+ ve
Mean age of 1 st Intercourse	17.5±3.12	-	-
Mean age of 1 st marriage	18.0±3.20	-	-
Ideal family size concept	3.62±1.09	0.3	+ ve
Actual family size	2.77±1.99	-	-
Experience child death under five years of age	44.0%	-	-
Aware of Modern FP	84.3%	4.8%	+ ve
Aware of female sterilization	98.5%	0.6%	+ ve
Aware of male sterilization	95.3%	3.5%	+ ve
Aware of IUD	8.3%	3.0%	+ ve
Aware of oral pills	14.8%	11.3%	- ve
Aware of condom	30.9%	17.7%	+ ve
Current use of FP	35%	5.2%	+ ve
Aware of ANC	32.0%	20.6%	+ ve
Avail any Government health services during preceding 12 months	27.0%	7.8%	+ ve

Some IEC Activities



Explaining the reproductive health issues



Explaining and distribution of condoms



Writing messages on the wall



Pasting posters in public places



Formation of male involvement committees

An Evaluation of Current Fertility Status among Khairwar Tribe of Sidhi District of Madhya Pradesh 2002

The present study was undertaken in the year 2002 to understand the change in demographic scenario particularly related to fertility of the community after 10 years (since 1992). The study was carried out in six villages of Kusmi Block of the Sidhi district with aimed to estimate fertility levels among Khairwar tribe. A similar study was conducted by RMRCT, Jabalpur in 1992-93 in Kusmi block of Sidhi District indicated low fertility among the tribe and one of the worst affected village was Harrai.

In the present study a total of 1305 persons were covered from 284 households. The sampling unit and sampling frame was household. A total of 173 households of the Khairwar tribe and 111 households of a non-Khairwar tribe were studied. Among these 133 eligible couples from the Khairwar tribe and 99 eligible couples from other tribes were studied. The sex ratio was 1053 (female/1000 male) in the Khairwars and it was 882/1000 in other tribes. The proportion of children population (0-14 years) among Khairwar population was lower than the same in other tribes. Dependency ratio among Khairwar population was higher (80% than non-Khairwar (77%). The children ever born among Khairwars and other tribes were 2.8 and 2.5, respectively. The fertility of Khairwar women in Harrai village was estimated to be 1.3, which is significantly lower than the fertility of other villages of the area ($Z=3.72$, $p<0.05$). The study also reveals high infant and child mortality among the Khairwars compared to other tribes. A comparative analysis of current age specific fertility data in terms of children ever born with the earlier study at 1992 revealed that fertility in the age group (15-19) has reduced from 0.67 to 0.18 among Khairwar while in other tribes it has increased. In all other age groups fertility has increased among Khairwar whereas it has decreased among other tribes. There is also a marked improvement in the proportion of children below 15 years of age during the same period i.e. 8 percentage point in Kusmi block and 10 % point specifically in the village Harrai.

Study of Population Growth and Health Status among Kamars: A Primitive Tribe in Raipur District of Chhattisgarh 2006-2007

Comprehensive research studies pertaining to Maternal and Child Health (MCH) care practices among primitive tribe in the state of Chhattisgarh are scanty and often completely lacking.

The study was carried out among Kamar tribe in the year 2006-07 to know the vital statistics and health morbidity in Gariaband, Mainpur, Chhura and Nagari blocks of Chhattisgarh. A cross sectional survey was undertaken by adopting probability proportion to size sampling method. A total population of 4521 and 1026 households was surveyed in 48 villages. Average household size was found to be 4.4 persons and sex ratio 1059 female/1000 males. Most of the population lived in nuclear family (71.8%). The male population was higher by 2.6% points compared to females. The children in the age group 0-14 years were 42 %. Dependency ratio was computed to be 76.5 %. The source of drinking water is important because waterborne diseases including diarrhea and dysentery are prevalent in tribal areas. It has been found that nearly 7 % of the household used drinking water from stream/river. About 57 % pregnant women had taken antenatal care and about 73 % children were immunized. The population growth rate (natural growth) was 1.82%. The Crude Birth Rate and Crude Death Rate computed to be 30.1 and 11.9 respectively. The total fertility rate was 2.8 and infant mortality rate 98. Maternal age (correlation coefficient $r = - 0.57$) and maternal education ($r = - 0.67$) have substantial effect in reducing infant mortality. Overwhelming majority of the deliveries (98%) were conducted at home by untrained personnel (52.3%).

A total of 1101 individuals were clinically examined to assess the health status. About 55 % adult individuals were suffering with chronic energy deficiency. Thirty two % individuals were found suffering with various clinical conditions and diseases. Acute respiratory infections 12 %, arthritis 4 %, fever 2 %, diarrhea 0.5 %, leprosy 0.5 %, pulmonary tuberculosis 0.4 % etc. were found during clinical survey.



OTHER INFORMATION



IMPORTANT RESEARCH PROJECTS/STUDIES UNDERTAKEN

Year 1984-1986

1. Studies on malaria and its vector biology in Mandla district, Madhya Pradesh
2. Health seeking behavior among the Bhil and Gond tribes of Madhya Pradesh
3. Personal hygiene and sanitary habits of Bhil and Bhilala of Madhya Pradesh
4. Prevalence of sickle hemoglobin and Glucose-6-Phosphate Dehydrogenase deficiency in Bhils of Madhya Pradesh

Year 1986-1988

1. A comprehensive study on health and nutritional status of primitive Baiga tribe of Baigachak area, Madhya Pradesh
2. Availability, efficiency and utilization of health care services in tribal area of Madhya Pradesh
3. An investigation of the dwindling Khairwar tribe of Sidhi district of Madhya Pradesh
4. Survey of health and nutritional status in the draught affected areas of Madhya Pradesh
5. Bio-environmental control of Malaria in tribal district Mandla, Madhya Pradesh.
6. Outbreak of Falciparum malaria in villages of Kundam Block, Jabalpur district (M.P.)
7. Short term entomological and epidemiological studies on malaria in primitive tribe of Baigachak, Mandla district (M.P.)
8. Etiology of acute diarrhea in hospital attending children of Jabalpur
9. Dysentery epidemics in Bastar and Bilaspur districts, Madhya Pradesh
10. A study on growth of tribal children of Baiga tribe of Baigachak area of Madhya Pradesh
11. Prevalence of sickle hemoglobin and G-6-PD deficiency in the different ethnic groups of Dhar district of Madhya Pradesh

12. Prevalence of sickle hemoglobin and G-6-PD deficiency in a non-tribal population of Jabalpur
13. Prevalence of hemoglobins and G-6-PD deficiency in tribal population of Mandla district, Madhya Pradesh
14. Prevalence of hemoglobins and G-6-PD deficiency among the primitive Baiga tribe of Baigachak area of Mandla district, Madhya Pradesh
15. Collection of vital events through VHGs
16. Some aspect of age specific fecundity among the tribal women of Madhya Pradesh
17. A comprehensive study of fertility performance among the tribal and non-tribal women in rural Madhya Pradesh
18. Young women's health and development program
19. Birth related practices among the tribals and non-tribals of Madhya Pradesh
20. Comprehensive study on health and nutritional status of Abhujmarias of Baster district, Chhattisgarh
21. Evaluation of qualitative aspects of MCH and family welfare services at PHC level
22. KAP studies on health and nutrition aspect among tribes of Madhya Pradesh
23. A longitudinal study of morbidity profile of tribal preschool children of Mandla district, Madhya Pradesh
24. Status of tribal women and their role in decision making regarding health and family planning
25. A cross-sectional study on the effect of sickle cell on growth of tribal children of Mandla district

Year 1988-1989

1. Investigation of malaria situation in Kundam PHC, Jabalpur district (M.P.)
2. Studies on the mosquitoes breeding in rice field and its role in malaria transmission in Mandla district, Madhya Pradesh
3. Integrated disease vector control of Malaria
4. Effect of Oral Rehydration Solution supplemented with Lactobacilli on diarrheal

- morbidity pattern of infectious diseases in a tribal population of Mandla district
5. A study on the effect of antimicrobial therapy and hand washing on prevalence of shigellosis in a tribal block
 6. Hereditay anemia and genetic markers among tribes of Bastar district
 7. Study of age-sex structure of tribal of Madhya Pradesh
 8. A Study of scio-cultural characteristics of Gonds of Mandla district of Madhya Pradesh
 9. An exploratory sudy of PHCs in tribal setting a case study of Primary Health Centres in Mandla district, Madhya Pradesh
 10. Value of children and its implication on fertility behavior among the tribals of Madhya Pradesh
 11. A study of grass root level perception on family welfare program in tribal area of Madhya Pradesh
 12. A Study on the Impact of rural development program (Poverty alleviation) in a block of Mandla district
 13. A study of anti-poverty programs with reference to women's development

Year 1989-1990

1. Evaluation of Yaws eradication program in Abhujmaria of Bastar district
2. Hereditary anemia status and genetic structure of tribal of Patalkot valley of Chhindwara district, Madhya Pradesh
3. A study of the health and nutritional profile of Sahariyas a primitive tribe
4. In vitro sensitivity of the Oxydent drugs on G-6-PD deficient subjects
5. A study of migration characteristics among the tribal with special reference to its effect on the health of their wives and children

Year 1990-1992

1. Hemoglobinopathies among the Gond tribal groups of Central India: Interaction of Alpha and Beta thalassemia with Beta chain variants
2. Detection of antibody to know the prevalence of Shigellosis in endemic tribal area of Madhya Pradesh

3. An epidemiological and microbiological study to determine prevalence of Pulmonary Tuberculosis in a primitive tribe of M.P.
4. Epidemiology of Filariasis in Panna district (M.P.)
5. A study of socio-cultural, demographic and economic aspects of health care, and morbidity profile of Hill Korwas a primitive tribe
6. Hereditary anemia and genetic structure in a primitive tribe-Saharia of Madhya Pradesh
7. A study of migration characteristics among the Tribal-The Kols of Satna district
8. Testing of Oral Polio vaccine samples to determine their potency and efficacy of cold chain system

Year 1992-1993

1. An epidemiological study to determine the prevalence of Genu-valgum in Abujhmaris of Bastar
2. Prevalence of Hemoglobinopathies and Glucodse-6-Phosphatase Dehydrogenase enzyme deficiency among the primitive tribe of Madhya Pradesh
3. A Study of demographic characteristics of Kamar Tribe
4. A study of socio-cultural, demographic and economic aspects of health care, and morbidity profile of Kamar a primitive tribe
5. Epidemiological, immunological and entomological study of Filariasis in tribal and non-tribal population of Panna district
6. A Study of impact of health education and genetic counseling on prevalence of hereditary anemia in Gond tribe of Jabalpur district
7. Epidemiological survey of endemic Goitre and endemic Cretinism in Bharias of Patakot

Year 1993-1994

1. A study of socio-cultural, demographic and economic aspects of health care, and morbidity profile of Birhors of Raigarh district
2. A study of socio-cultural, demographic and economic aspects of health care, and morbidity profile of Khairwars of Sidhi district

Year 1994-1996

1. Hemoglobinopathies in Kols and Pradhans and other backward communities of Jabalpur
2. A study of socio-cultural, demographic and economic aspects of health care, and morbidity profile of Gonds
3. A randomized community trial on effect of intestinal parasites on growth pattern of children and adolescents in Gond tribe of M.P.
4. Investigation of causes of persistence of Yaws in Abujhmaria, Bastar
5. Epidemiological survey of endemic fluorosis in Tilaipani and Hirapur villages of Mandla
6. Malaria outbreak in Lamta PHC, Balaghat
7. A study of socio-cultural, demographic and economic aspects of health care, and morbidity profile of Pando tribe of Sarguja
8. Socio-economic aspects of Malaria in Kundam block

Year 1996-1998

1. Prevalence of Hemoglobinopathies in Halba tribe of Madhya Pradesh
2. Prevalence of α -thalassemia with special reference to Scheduled Caste communities in Jabalpur area
3. Epidemiology of malaria in primitive tribes of Madhya Pradesh
4. A study of expectation of life in tribal population of Madhya Pradesh
5. Epidemiological survey of endemic Fluorosis in Mandla district with special reference to nutritional aspects, particularly Calcium and Vitamin E intake and Fluoride

Year 1998-2000

1. Prevalence of Hemoglobinopathies among tribes and Scheduled Castes of Betul, Seoni and Mandla districts
2. Prevalence of β -Thalassemia with special reference to Scheduled Caste communities in Jabalpur area
3. Impact of health education and genetic counseling on prevalence of hereditary

anemia in Sindhis of Jabalpur

4. Morbidity profile of sickle cell disease and related disorders in Central India a cohort study
5. A study of socio-cultural, demographic and economic aspects of health care, and morbidity profile of Kodaku tribe of Sarguja
6. Epidemiology of malaria in primitive tribes of Madhya Pradesh: Bharias of Patalkot valley
7. Epidemiological survey of endemic Fluorosis in Mandla a tribal district
8. A Randomized community trail on the effect of helminthic infestation on growth patterns of children and adolescents among Gond tribe of Madhya Pradesh
9. A study on the effect of Vitamin-A supplementation in preschool children admitted in pediatric ward of Medical College, Jabalpur
10. Economic consequences of sickle cell disease
11. A study of decadal change in demographic parameters in Gond tribe of Jabalpur

Year 2000-2002

1. Pilot study on prevalence of Hemoglobinopathies and rare markers among the primitive tribe population
2. Differential diagnosis of Cercarial dermatitis and Scabies with possible control measures in tribal area of Madhya Pradesh
3. Health and nutritional status of Saharia a primitive tribe of Madhya Pradesh
4. Investigation on cause of death, verbal autopsy among Baigas of Dindori district: A pilot study
5. Malarial morbidity and its prevention in tribal setting, Baigas of Baigachak area - a pilot study
6. Economic factor in context of curative health care among Saharia tribe of Madhya Pradesh
7. Investigation of dysentery epidemic in Junnardev, Chhhindwara and Wadrafanagar, Sarguja

Year 2002-2003

1. Prevalence of Hemoglobinopathies among the Scheduled Tribes and Scheduled Caste of Chhindwara district of Madhya Pradesh
2. Bancroftian Filariasis in Panna district of Mahdya Pradesh: Clinical, Parasitological and Immunological approach (A follow up after 11 Years)
3. An evaluation of current fertility status among Khairwar tribe of Sidhi district of Madhya Pradesh
4. Study of Men as a supportive partner in reproductive and sexual health- An investigation among the Khairwars of Sidhi district of Madhya Pradesh
5. Malaria control in Betul using existing tools
6. Evaluation of effect of intervention (safe drinking water and nutritional supplementation) on skeletal and dental Fluorosis in Mandla

Year 2003-2004

1. Prevalence of Hemoglobinopathies among the Scheduled Tribes and Scheduled Caste of Shahdol District of Madhya Pradesh
2. Morbidity Profile of sickle cell disease in Central India
3. Community control program of Hemoglobinopathies
4. Impact of health education and counseling on Knowledge, Attitude and Practices on Sickle Cell Anemia in Baiga Tribe of Dindori District
5. Investigation of cause of deformities suspected due to high Fluoride level in drinking water in villages of Didhi Block district. Sonbhadra, U.P.
6. Impact of ICDS input on health and nutritional profile of preschool children in Kundam block of Jabalpur district
7. Assessment of Iodine deficiency disorders in Baigachak area of Dindori district
8. Nutritional status of adolescents in tribal areas of Madhya Pradesh
9. Transmission dynamics of malaria in tribal areas
10. Prevalence of Dengue vector and infection in Jabalpur
11. Epidemiological and Etiological study of acute diarrhea disease in preschool children of tribal area of Madhya Pradesh
12. A Study of Markers of Hepatitis B, C and HIV in Tribes of Orissa

13. Concomitant Infection of Intestinal Parasites with Filariasis
14. Community Prevalence and Etiology of Sexually Transmitted Infection in Tribal Area of Madhya Pradesh
15. Men's participation in Reproductive and Sexual Health. A study among the Primitive Tribes of Undivided Madhya Pradesh

Year 2004-2005

1. Prevalence of Hemoglobinopathies among the Scheduled Tribes and Scheduled Caste of Nimar Area of Madhya Pradesh
2. An outbreak of Chickenpox in Binjha village of Bargi, Jabalpur, Madhya Pradesh
3. Evaluation of National Malaria Surveillance System in Bijadandi block, Mandla district, Madhya Pradesh
4. Evaluation of National Immunization Program in Bijadandi block of Mandla district, Madhya Pradesh
5. Feasibility of Iron-folic acid supplementation among tribal adolescent girls, Mandla district, Madhya Pradesh

Year 2005-2006

1. Seasonal variation in Plasmodium species: Case study of rural peripheral hospital from Central India
2. Prevalence of Pulmonary Tuberculosis in tribal population of Madhya Pradesh
3. Epidemiology of Viral Hepatitis in tribal populations of Orissa/Madhya Pradesh/Chhattisgarh/Jharkhand
4. Impact assessment of the total sanitation in the health of the villagers living in Nirmal Gram as compared to the Non-Nirmal Gram villagers

Year 2006-2007

1. Prevalence of common Hemoglobinopathies and G-6-PD deficiency in Scheduled Caste and Scheduled Tribe of district Damoh of Madhya Pradesh
2. Evaluation of first response combo malaria Ag card test (P2DH/HrP2)
3. Preparation of a field site for malaria vaccine trial in and around Jabalpur, Madhya Pradesh

4. A study on HIV infected individuals to understand how to manage enhancement of asymptomatic period and delay symptomatic stages
5. Study of population growth and health status among Kamars- a primitive tribe of Raipur district of Chhattisgarh

Year 2007-2008

1. Molecular epidemiology of community acquired *S.aureus* strains from primitive tribes of MP
2. *Aedes aegypti* pupal demographic survey and dengue virus activity in Barela town in Jabalpur
3. Alpha Thalassaemia in relation to common Haemoglobinopathies in some tribes of MP
4. Integrated Disease Surveillance project NCD risk factors survey in MP and Maharastra
5. Tobacco related disease in the tribal population of Kundam block, Jabalpur
6. Newborn care among tribes of Madhya Pradesh: A case study of Bhils of Dhar district

Year 2008-2009

1. Prevalence of haemoglobinopathies and G6PD deficiency in Scheduled Tribes and Scheduled Castes of district Damoh, M.P.
2. Prevalence of pulmonary tuberculosis in Jabalpur District of Madhya Pradesh
3. Prevalence of Infertility in India (ICMR Multicentric Task force Project)
4. Evaluation of the introduction of insecticide treated mosquito bed nets (ITMN) for malaria control in tribal population of Central India



REGULAR ACTIVITIES

Integrated Counseling and Training Centre (ICTC) and State Referral Laboratory (SRL) for HIV

This is an ongoing activity pertaining to HIV testing and counseling. It started as HIV surveillance centre in the year 1987 and was renamed as Voluntary Counseling and Testing Centre (VCTC) in the year 2002. During 2007-08 it was again renamed as Integrated Counseling and Testing Centre (ICTC). The centre is also recognized as State Referral Laboratory. Under this it participates in External Quality Assurance Scheme (EQAS) whereby samples from different ICTC's and Blood banks of the state are tested for quality controls. Trainings are also organized under EQAS for laboratory technicians and medical officers. This year clients numbering to 1057 were tested for HIV, of which 121 turned out to be reactive. The centre also works as a testing centre for the sentinel surveillance program every year. A total of 7000 specimens were tested in 2007 from 19 sentinel sites for ANC, STD and FSW.



Blood collection for HIV testing



National Nutrition Monitoring Bureau, MP Unit

National Nutritional Monitoring Bureau (NNMB) Madhya Pradesh unit is functioning from this institute since 1987 covering both Madhya Pradesh and Chhattisgarh under administrative control of National Institute of Nutrition, Hyderabad. From time to time NNMB M.P. unit participated in the following studies:

1. Nutritional status of adolescents.
2. Nutritional status of elderly.
3. Food and nutrient intakes of individuals.
4. Prevalence of micronutrient deficiencies.
5. Urban survey Slums (1993-94).
6. Diet and nutritional status of rural population.
7. Prevalence of vitamin A deficiency among preschool children in rural area.
8. Diet & Nutritional status of population and prevalence of hypertension among adults in rural areas.
9. Nutritional status of rural population.
10. Diet and nutritional status of tribal population.
11. Nutritional status of rural population repeat survey.

Detailed reports are available at www.nnmb.org/downloads.html or at National Institute of Nutrition, Hyderabad.

In the year 2007-08 “ Assessment of Diet & nutritional Status of the Tribal Population Second Repeat Survey” has been planned by the central team at NIN, Hyderabad. Apart from collection of current dietary information, anthropometric assessment of the tribal population, it has also been planned to assess the prevalence of different morbidity, obesity and hypertension among adult males and females above 20 years. A total of 4269 households from 108 villages were covered from Madhya Pradesh and Chhattisgarh for anthropometry and clinical signs. A total of 1080 households were covered for the diet survey. Data analysis is in progress.



Sickle Cell Clinic

Centre runs a sickle cell clinic at N.S.C.B. Medical College, Jabalpur and offers the facilities for diagnosis of haemoglobinopathies to the patients of the areas since 2002. During the period of 2007-08, a total of 824 persons suspected to be suffering from hemolytic anaemia and referred by various public sector hospitals were analyzed for haemoglobinopathies. During the period 116 persons were identified as sickle cell disease, 92 as sickle cell trait, 46 as α -thalassaemia trait, and 8 as α -thalassaemia major. These patients and their parents were briefed about presentation and possible prognosis of the disorders and the preventive measures.



Sickle cell clinic at NSCB Medical College, Jabalpur



Library

The library of the centre continues to cater the documentation and information needs of the scientists, other research staff of RMRCT as well as other local institutes like NSCB Medical College, Veterinary College, Home Science College, Rani Durgawati Vishwavidyalaya, etc. It also extent services to research personnel from other universities /institutes of national and international standard.

Library is now providing the LAN facilities to scientists and other research staff of the centre through broadband connection for literature search for their research work.

Now library has acquired modern furniture, air-conditioners and compactors for its reading rooms. The library is also a member of recently launched consortium of Ministry of Health and Family Welfare (MoHFW) and National Medical Library (NML), New Delhi which facilitates accessing to 1500 journal including 850 e-journals. Library has following resources:

New Additions	
Books/Journals	341
Total subscription	54
Total Library collection	
Books	1097
WHO publications	605
Bound Foreign Journals	1113
Bound Indian Journals	778
MEDLINE CDs	21
Others CDs	22
Census Floppies	60



PH.D STUDENTS (ENROLLED/AWARDED)

Ph.D Students Currently Enrolled at the Centre

Name of Student	Study title	Status	Affiliation
Dinesh Kumar	A Study of Population Growth and Health Status among Kamars- A Primitive Tribe in Raipur, Chhattisgarh	Thesis Submitted	Bundelkhand University, Jhansi
Vidhan Jain	Hospital based study on immunopathogenesis of cerebral malaria.	Ongoing	Rani Durgavati Vishwavidyalaya, Jabalpur
Gyan Chand	A study on factors that determine malaria transmission in tribal areas.	Ongoing	Rani Durgavati Vishwavidyalaya, Jabalpur
Puspendra Pal Singh	Immunological response associated with protection & pathogenesis in malaria during pregnancy in central India.	Ongoing	Jiwaji University Gwalior
Rakesh Patel	Study on genetic polymorphism of vaccine candidate Antigens gene (CSP, EBA175 and RAP -1) in central India.	Ongoing	Jiwaji University Gwalior
Shiv Kumar	Child health care practices among the gond tribe of mandla district of madhya pradesh	Synopsis submitted	Rani Durgavati Vishwavidyalaya, Jabalpur

Ph.D Awardees Worked in RMRCT

Name of Student	Study title	Year of award	Affiliation
Deepchand Jain	A study of fertility and family planning behaviour among the Gonds of M.P.	1997	Dr. Harisingh Gour University, Sagar
Bal Krishna Tiwari	Socio-cultural aspects of healthcare among the Kol tribe of Satna district	1999	Rani Durgavati Vishwavidyalaya, Jabalpur
Arvind Verma	A study of socio-cultural determinants of population growth in a primitive tribe- the Baigas of M.P.	1999	Rani Durgavati Vishwavidyalaya, Jabalpur
Jyotirmoy Roy	Socio-cultural determinants of fertility behaviour of Khairwars of M.P.	1999	Rani Durgavati Vishwavidyalaya, Jabalpur
Alpana Abbad	Socio-cultural determinants of maternal and child healthcare practices among the Bharias of Patakot valley	2000	Rani Durgavati Vishwavidyalaya, Jabalpur
N.K.Choudhari	Role of socio-cultural practices in accepting the MCH and FP services among Gond population of Jabalpur district	2000	Rani Durgavati Vishwavidyalaya, Jabalpur
Rakesh Chandra Mishra	A study of Socio-cultural factors affecting literacy in Baiga tribe of Mandla district	2002	Dr. Harisingh Gour University, Sagar
Praveen Kumar Bharti	Study on nature and extent of polymorphism in vaccine candidate antigens (MSP1, MSP2 & MSP3) and drug resistance gene (Pfcrt) of <i>Plasmodium falciparum</i> in central India	2009	Rani Durgavati Vishwavidyalaya, Jabalpur

SYMPOSIA/WORKSHOPS ORGANIZED

- A workshop on Management of Severe and Complicated Malaria was organized during 31st August to 2nd September 2001.



- Workshop on IPR and WTO issues was organized on 16th and 17th February 2004. The workshop was sponsored by ICMR and WHO.



- WHO workshop on Rapid Assessment Tools for Malaria in Pregnancy for South East Asian Countries during 26th -29th April 2004



- INDO-US workshop on Cerebral Malaria Associated Neurological Disorders in India was organized during 3rd-5th October 2004. The workshop was sponsored by Malaria Research Centre and US Department of Human and Health Services.



- National symposium on Tribal Health was organized on 19th and 20th October 2006.



TRIBAL HEALTH IN RETROSPECT

- International workshop on Molecular Epidemiology and Immunology of Malaria and other Vector Borne Diseases was jointly organized by the centre and NIMR-FS, Jabalpur during 16th-19th October 2007.



- International symposium on Tribal Health to be held from 27th February -1st March 2009.



Trainings organized

- Training on mandatory pre-transfusion serological testing for Anti HCV antibody was organized in three batches during May and June 2000.



- Integrated Fluorosis Mitigation reorientation training for Medical Officers was organized during 4th-10th September 2008. The training was sponsored by Department of Tribal Welfare, Govt. of M.P.



- Centre organizes regular trainings on External Quality Assurance Scheme (EQAS) in HIV testing for Medical Officers and Laboratory Technicians of Blood Banks and Integrated Counseling and Training Centre (ICTC).



- Induction and reorientation trainings on HIV/AIDS are regularly organized for laboratory technicians of ICTC's.

- Regular trainings are jointly organized with NIMR-FS, Jabalpur for Medical Officers on Malariology.



FACILITIES DEVELOPED

Malaria/Vector borne disease Laboratory

Equipments available:

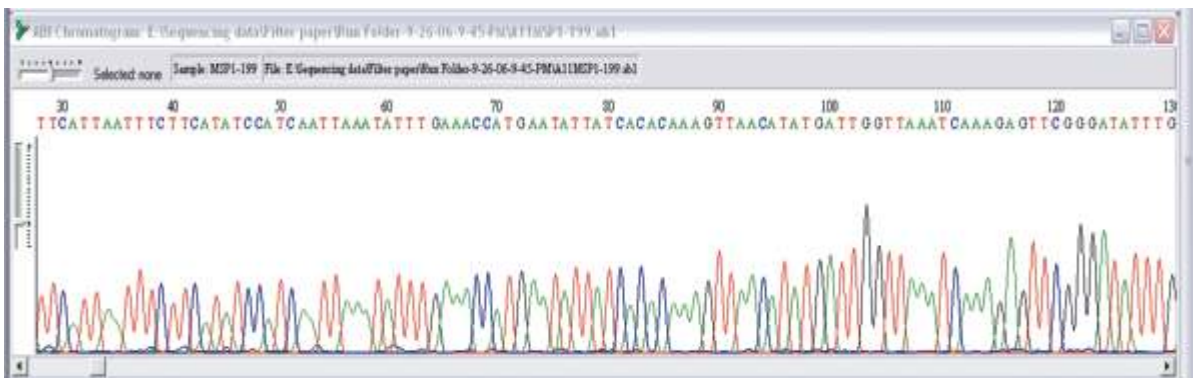
- **Binocular and inverted light Microscope** - Detection of parasites
- **ELISA Reader**- Detection of antigen/ antibody for Malaria, Dengue & Filaria
- **Thermalcycler** - Amplification and detection of the DNA
- **RT PCR**- Gene expression and quantification
- **DNA Sequencer**- Sequencing of genes
- **Flow cytometer** - Cells sorting and quantification

TRIBAL HEALTH IN RETROSPECT

- **Cell harvester** - Harvesting of cultured cells
- **Liquid Scintillation Counter** - Estimation of Radio active incorporation in cultured cells
- **Culture facilities for *Plasmodium falciparum***
- **Multiplex system** - Cytokines estimation



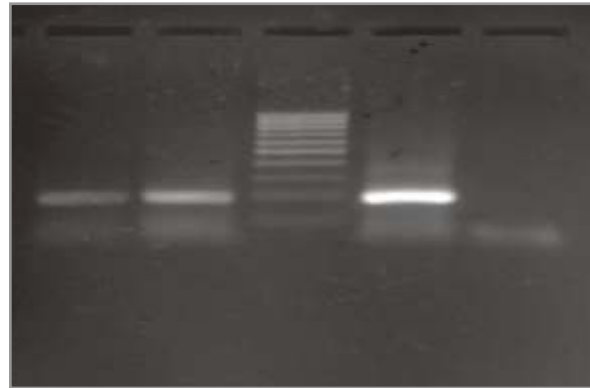
Malaria/Vector borne disease Laboratory



Electrophogram of Merozoite Surface Protein (MSP) of *P. falciparum*

Genetics Laboratory

- **Electrophoresis** - Detection of abnormal haemoglobins
- **Gel documentation**- Preservation of gel images
- **HPLC**- Identification and separation of proteins
- **Automatic blood cell counter**- Three & Five part differential counter
- **PCR**- Mutation detection & analysis
- **Cold centrifuge**- Carry out centrifugation at 10,000g



Microbiology Laboratory

- **BS III cabinet** -Culture of AFB for tuberculosis and drug sensitivity pattern
- **BS II cabinet** -Culture of bacteria
- **Gel electrophoresis**- Separation of different proteins of various organisms
- **Walk in incubator**- Incubation of large numbers of samples
- **Western blot apparatus**- Identification of proteins
- **PCR**- Amplification and mutation detection



HIV laboratory

- **FACS counter-** CD4 and CD8 cell count for monitoring of ART
- **ELISA reader-** Detection of antibody/antigen for HIV/AIDS



Fluoride Testing Laboratory

- **Ion Specific pH meter-** for detection of fluoride in water & urine and different food stuffs.



Central facilities

- **Liquid nitrogen plant-** for continuous supply of liquid nitrogen required for storing and transportation of blood samples in -120°C
- **Cold room** - Conducting experiment at low temperature
- **Deep Freezer-** -70°C , -80°C storage of biological samples
- **Central Library-** Air-conditioned library with more than 1500 books, 400 WHO publications. There are also 50 foreign journals and 60 Indian journals and periodicals.
- **Data management system-** Centralized management of data
- **Power backup** - 24 hrs electricity supply with power backup.



Conference Facility

- Air conditioned auditorium with all modern electronic projection facility
- Two air conditioned conference hall with all modern electronic projection facilities



PUBLICATIONS

Tribal Health Bulletin

The Tribal Health Bulletin was started in 1992 with an aim to publish original papers, review articles, notes and communication on various aspects of tribal health. It is published biannually in both English and Hindi version. So far 23 issues have been published.



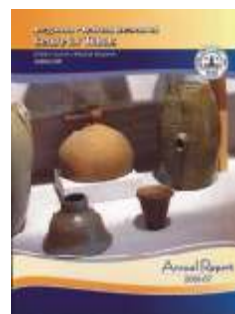
RMRCT UPDATE

It is a newsletter of the centre and published biannually. It was started in the year 2003 and so far published 9 issues.



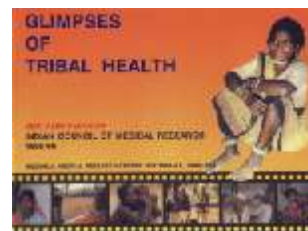
Annual Report

The centre publishes since inception the annual reports depicting scientific as well as other activities of the centre during the financial year 1st April to 31st March. It has published 21 such reports so far.



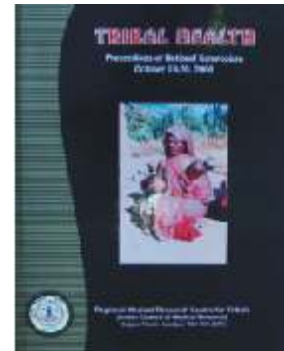
Booklet

On the eve of 85th Anniversary of Indian Council of Medical Research during 1995-96 the centre published the booklet GLIMPSES OF TRIBAL HEALTH which depicts the highlights of the tribal health problems particularly among the primitive tribes.



Proceedings

Centre published proceedings of National Symposium on Tribal Health held during 19th -20th October 2006.



Brochure

1. National Symposium on Tribal Health held during 19th -20th October 2006.
2. International Workshop On Molecular Epidemiology and Immunology of Malaria and other Vector Borne Diseases held during 16th - 19th October 2007.
3. International Symposium on Tribal Health supposed to be held on 27th February-1st March 2009.



Flyers

The centre from time to time prints flyers on different health aspects such as on HIV/AIDS, reproductive health issues, filariasis, malaria, tuberculosis, nutritional aspects, etc. to generate awareness among the masses.



RECENT DEVELOPMENTS

- The web site of RMRCT (www.rmrct.org) launched



Home page of the web site

- The centre/scientists are recognized for Ph.D by Rani Durgawati Vishwavidyalaya, Jabalpur.
- The centre has submitted necessary documents for its recognition as WHO Collaborative Centre.
- Close linkages established with Tribal Welfare Department, Government of India as well as Government of Madhya Pradesh for providing technical support to their studies and also for receiving financial support for the studies conducted at RMRCT.

