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Regional Medical Research Centre for Tribals
(Indian Council of Medical Research)
Jabalpur

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Ph. : +91-761-2370800, 2370818
Email : bulletin_rmrct@yahoo.com
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THE AGE AND SEX STRUCTURE OF TRIBAL POPULATION IN CENTRAL INDIA

Alok Ranjan*

INTRODUCTION

Tribal people are commonly known as indigenous people or 'native inhabitants' of a country, state or region. The word 'tribe', however, lacks a satisfactory definition. In the Indian Constitution, the term 'tribe' is no where defined. According to the article 342 of the Indian Constitution, the Scheduled Tribes are the tribes or tribal communities, which may be notified by the President of India. The Hindi word used for the term Tribe is *Adivasi* which comprises of two words *adi* and *vasi* meaning 'aboriginal' and 'inhabitants' respectively.

India has the largest tribal population in the world. According to the 2001 population census, total tribal population in India was 84.33 million which accounted for almost 8.20 per cent of the population of the country. This population is the total number of those tribal communities and groups which have been notified by the President of India at the time of 2001 population census as Scheduled Tribes.

The tribal population of the country is concentrated more in the rural areas than in the urban areas and this is expected. According to the 2001 population census, tribal population accounted for more than 10 per cent of the rural population of the country whereas this proportion was less than 2.5 per cent in the urban areas. Most of the tribal population in India is concentrated in the central and in the north-eastern parts of the country.

The states of Chhattisgarh and Madhya Pradesh have a heavy concentration of the tribal population. Information available from the 2001 population census suggests that the tribal population accounted for more than 33 per cent of the total population of Chhattisgarh and more than 20 per cent of the population of Madhya Pradesh. Total tribal population in the two states enumerated at the 2001 population census was 19.22 million which is more than 22 per cent of the total tribal population of the country. In terms of numbers, Madhya Pradesh has the largest concentration tribal population in the country, numbering 12.23 million at the 2001 population census.

The tribal population is not a socially, culturally and ecologically homogenous entity. Tribal communities and groups belong to different ethno-lingual classes, profess diverse faith and are at various levels of social and economic development. Tribal population range from the hunters and gatherers of forest produce to the urbanised and skilled wage earners. The spatial distribution of the tribal population is characterised by the striking tendency to cluster in few pockets of diverse degree of isolation.

Despite the fact that tribal population constitutes a substantial proportion of the

*'Shyam' Institute.82, Aradhana Nagar,Bhopal, MP-462 003
E mail:aranjan@hotmail.com,

population in Chhattisgarh and Madhya Pradesh, the understanding of the population dynamics of the tribal population is generally poor. Studies pertaining to population, health and nutrition status among different tribal groups and communities in India are very few, patchy and scanty[1]. Tribal people are popularly known as forest people. They largely depend upon forests and forest produce for their survival and livelihood. Since ages, they have been nestling away from the historical 'perennial and nuclear areas' and are placed in relatively isolated niches. This historical pattern seems to have bearings even today. The social and cultural value system including values and status accorded to females in tribal communities is very significantly different from that in non-tribal communities, especially communities which have a very rigid caste and kinship system. Over generations, tribal communities have preferred to remain isolated from the main streams of social and economic development.

Very little is currently known about the population dynamics of the tribal population. There are more myths than hard evidence. Some information about tribal demography is available from the recently conducted National Family Health Survey. This information suggests that in the two states, the total fertility rate in the tribal population is higher than the total fertility rate in non-tribal population other than the scheduled castes population whereas the use of family planning methods in the tribal communities was substantially lower than that in the non-tribal communities. Similarly, levels of under-five mortality in the tribal communities in the two states have been substantially higher than that in the non-tribal communities and one reason is that the neonatal mortality in the tribal communities has been found to be the highest (International Institute for Population Sciences and ORC Macro, 2001).

This paper analyses the age and sex structure of the tribal population in the states of Chhattisgarh and Madhya Pradesh, the states with a very high concentration of tribal population. The analysis concentrates on four aspects of the age and sex structure of the tribal population. The first is the analysis of the quality of age and sex data available from the 2001 population census; the second is the understanding the age and sex composition of the tribal population in the two states; and the third is the analysis of dissimilarity in the age and sex structure of the tribal population in Chhattisgarh and Madhya Pradesh. Lastly, the paper compares the age and sex composition of the tribal population in Chhattisgarh and Madhya Pradesh with that of the non-tribal population in the two states.

METHODOLOGY

The most widely known source of information about the age and sex structure of the population in India is the decennial population census. India has the distinction of having unbroken series of decennial population census beginning from 1881 which is unparallel in the developing countries of the world. The Registrar General and Census Commissioner of India has recently made available age and sex data for the conventional quinquennial age groups for the total, scheduled castes and scheduled tribe population on the basis of the information collected during the 2001 population census. This is probably for the first time that the Registrar General and Census Commissioner of India has released the data age and sex for

scheduled tribes and scheduled castes population separately. In any case, the availability of the age and sex data separately for the Scheduled Tribe population provides an opportunity for the analysis of age and sex composition of the tribal population and compares the age and sex composition of the tribal population with the age and sex composition of the non-tribal population.

The age and sex data available from any census and survey are known to be associated with a number of errors. These include errors due to age misreporting, errors due to digit preferences, errors due to selective under enumeration of given sex as well as errors due to the enumerator bias. Any analysis of the age and sex composition of the population, therefore, requires an analysis of the accuracy of the age and sex data. There are a number of measures available for assessing the quality of age and sex data of the population. These measures can be divided into two categories - measures for single year age returns and measures for age and sex data grouped into five-year age groups. Measures in the first category that are most popular are Whipple's index and Meyer's index[2]. On the other hand, the age and sex accuracy index proposed by the United Nations(1955)[3] is most widely used for analysing the accuracy of age and sex data grouped into five-year age intervals.

The age and sex data currently available from the 2001 population census is in five-year age groups. As such, the United Nations age sex accuracy index has been used for analysing the quality of the age and sex data of the tribal as well as non-tribal population in the present analysis.

For understanding the age and sex composition of the population - tribal and non-tribal, the present analysis employs indexes and methods described by Spiegelman (1969)[4] Shryock and Siegel (1976)[2] and Arriaga (1994)[5]. Moreover, the Lorenz curve[6] and associated indexes of dissimilarity have been used for analysing the dissimilarity in the age and sex composition of the tribal population and the non-tribal population in the two states. Mukherjee (1976)[7] has noted that following Gini (1954), the dissimilarity indexes that can be derived from the Lorenz curve for analysing the nature and extent of dissimilarity between two age distributions include: aggregate dissimilarity index, concentration dissimilarity index, net concentration dissimilarity index, partial dissimilarity index and partial concentration dissimilarity index. A description of these indexes and the method of their calculation are given elsewhere along with the interpretation of the indexes (Mukherjee, 1976)[7] and are not repeated here. In the present paper, we use the Lorenz curve and associated dissimilarity indexes to explore the dissimilarity in the age and sex distribution of the tribal population of Chhattisgarh and Madhya Pradesh as well as the dissimilarity between the tribal and non-tribal population of Chhattisgarh and Madhya Pradesh separately. Since the age and sex structure of the population is solely determined by the fertility, mortality and migration processes, the dissimilarity in the age and sex composition of any two populations reflects the dissimilarity in the patterns of demographic transition as well as in the patterns of migration in the two populations. In this way, understanding age and sex composition of population helps in understanding inherent fertility, mortality and migration processes.

The Population Pyramid

The age distribution of the population may be analysed in a number of ways. One way is to analyse the age data separately for the two sexes. The other way is to cross-tabulate the age data by sex. The population pyramid is the most popular method for the analysis of the age data cross tabulated by sex. The population pyramid can be presented in three ways. The first is to use the absolute numbers; the second is to present the population in each age group as proportion to the total population, male and female combined; while the third approach is to present the males in each age group as proportion to total males and females in each age group as proportion to total females. The three ways of presenting the population pyramid have their own way of understanding the age and sex composition. This third approach is most widely used to present the population pyramid.

The population pyramid reflecting males in each age group as proportion to total males and females in each age group as proportion to total females is presented in figures 1 to 3 for the total tribal population as well as separately for the rural and urban tribal populations in the two states. Key summary measures describing the age distribution of the tribal population of the two states are given in table 1. It may be seen from these figures and table that the population pyramid of the two states is triangular in shape with a broad base and a thin top. This population pyramid suggests that the tribal population is young and is characterised by high levels of fertility and high levels of mortality. It is also clear that the age distribution of the tribal population of the two states has an in-built momentum for continued rapid population growth.

Figures 1 to 3 also highlights the dissimilarity between the age distributions of the tribal population of the two states. It is also clear that the tribal population of Madhya Pradesh is younger than the tribal population of Chhattisgarh and this difference is substantial. In Madhya Pradesh, nearly 44 per cent of the tribal population has been found to be below 15 years of age at the 2001 population census. This proportion, in Chhattisgarh, was only about 38 per cent. Similarly, the old population, population with at least 60 years of age was, about 6 per cent of the total population in Madhya Pradesh but 7 per cent in Chhattisgarh. A similar situation may also be observed when rural areas of the two states but, in the urban areas, the proportion of old in Madhya Pradesh are higher than that in Chhattisgarh.

The difference in the age distribution of the population of Madhya Pradesh and Chhattisgarh is very well reflected in the difference in the dependency ratio in the two states as may be seen from table 1. The observation that the tribal population of Madhya Pradesh is younger than the tribal population of Chhattisgarh is reflected in the higher dependency ratio (young and old combined) in Madhya Pradesh as compared to the dependency ratio in Chhattisgarh. The higher dependency ratio in Madhya Pradesh is primarily due to higher young dependency ratio as the old dependency in Chhattisgarh is higher than that in Madhya Pradesh. Since, the young dependency in Madhya Pradesh is substantially higher than the young

dependency ratio in Chhattisgarh, the combined dependency ratio in Madhya Pradesh is substantially higher than that in Chhattisgarh. The scenario in the rural areas is also more or less similar but in the urban areas, the striking difference is that old dependency in Madhya Pradesh is also higher than that in Chhattisgarh. The relatively higher older dependency ratio in Madhya Pradesh appears to be the result of relatively lower adult mortality in Madhya Pradesh as compared to that in Chhattisgarh.

The very fact that the proportion of the young population in Madhya Pradesh is substantially higher than that in Chhattisgarh is also reflected in the child-woman ratio. A comparatively higher child-woman ratio in Madhya Pradesh also indicates that fertility levels among tribals of Madhya Pradesh are comparatively higher than the fertility among tribals of Chhattisgarh. The difference gets wider in the rural areas but, in the urban areas, this difference narrows down.

Table 1: Summary measures of the age and sex composition of tribal and non-tribal population of Chhattisgarh and Madhya Pradesh, 2001

Measure		Chhatisgarh						Madhya Pradesh					
		Tribal			Non-Tribal			Tribal			Non-Tribal		
		Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Dependency Ratio													
Combined	P	816	827	640	781	848	623	980	995	784	811	881	677
	M	813	827	610	771	843	606	982	1000	752	795	866	660
	F	819	827	673	793	854	641	978	990	820	929	897	696
Young	P	689	696	573	651	702	530	862	874	706	677	733	568
	M	698	708	553	652	709	520	871	886	684	671	728	561
	F	679	684	595	650	694	540	852	861	730	684	740	577
Old	P	127	131	67	131	146	98	118	121	78	134	147	109
	M	115	119	56	119	133	86	110	114	68	125	138	99
	F	140	143	79	143	160	101	126	129	91	145	158	120
Proportionate Distribution													
0-14 years	P	37.9	38.2	34.9	36.5	37.9	32.7	43.8	43.8	39.6	37.4	39.0	33.9
	M	38.5	38.8	34.4	36.8	38.5	32.4	43.9	44.3	39.2	37.4	39.0	33.8
	F	37.3	37.4	35.6	36.3	37.4	32.9	43.1	43.3	40.1	37.4	38.9	33.9
15-59 years	P	55.1	54.5	60.9	56.2	54.1	61.6	50.5	50.1	56.1	55.2	53.2	59.6
	M	55.2	54.9	62.1	56.5	54.3	62.3	50.5	49.9	57.2	55.7	53.6	60.2
	F	55.0	54.7	59.9	55.9	53.9	60.9	55.6	50.3	54.9	54.7	52.7	58.9
60+ years	P	7.0	7.2	4.1	7.33	7.9	5.7	5.9	6.1	4.4	7.4	7.4	6.5
	M	6.3	6.5	3.5	6.71	7.2	5.3	5.6	5.7	3.9	6.9	7.4	5.9
	F	7.7	7.9	4.7	7.9	8.6	6.2	6.4	6.5	4.9	7.9	8.3	7.0
Child-woman ratio													
CWR1		557	565	424	552	572	403	722	734	553	545	606	427
CWR2		667	674	553	622	669	506	848	857	716	684	741	571

Age Ratios

The age composition of the population may also be examined in terms of age ratios for five-year age groups (United Nations, 1955)[3]. An age ratio in any 5-year category is the ratio of the population in that age group to the average population of adjacent (preceding and following) age groups, and are presented as the multiple of 100. In the absence of any major fluctuations in fertility and mortality and with insignificant levels of migration, the age ratios should be fairly similar across the age categories (Arriaga, 1994)[5]. This means that if there are no violent fluctuations in fertility and mortality

Figure 1:Age and sex distribution, 2001 - Tribal population (Total)

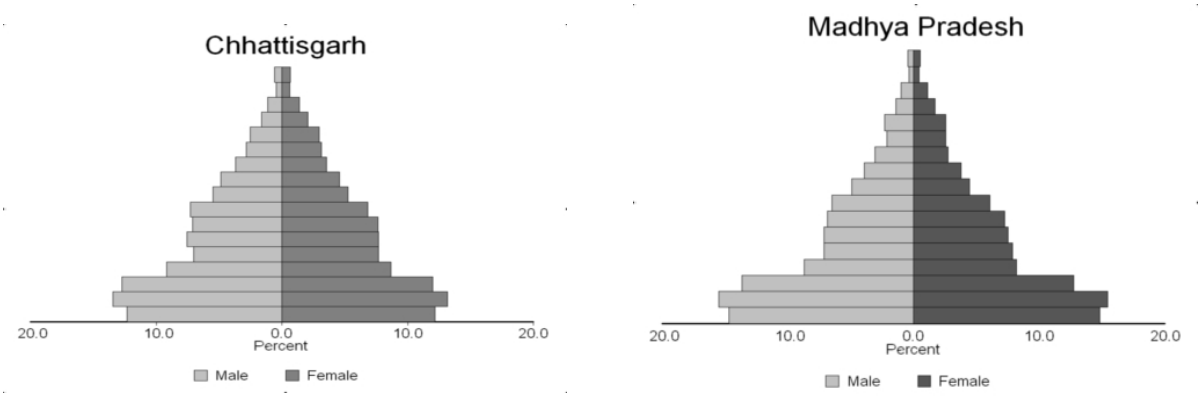


Figure 2: Age and sex distribution - Tribal population (Rural)

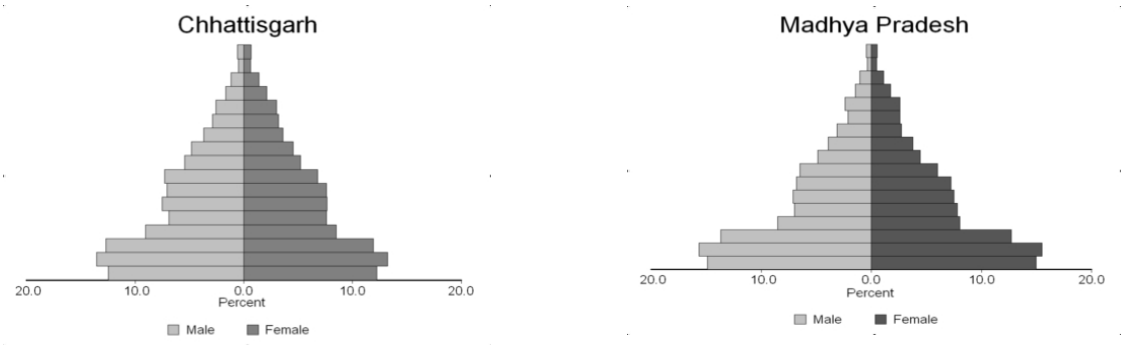
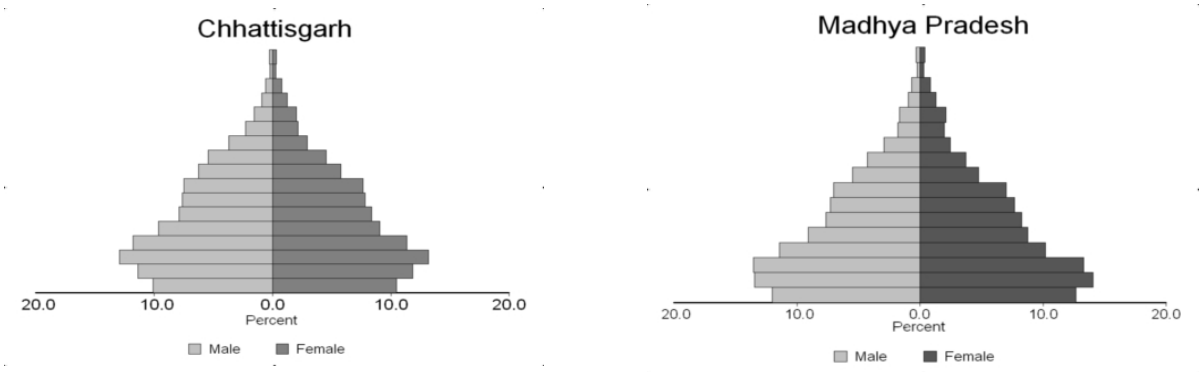


Figure 3: Age and sex distribution - Tribal population (Urban)



or big waves of migration (which is often age-selective), and if the number of persons in successive age-groups gradually deplete through the incidence of mortality, the age ratio for any age group should be approximately 100. By contrast, if there are fluctuations in fertility and mortality or if migration is significant, age ratio for different age groups may deviate significantly from the normative value of 100. The age ratio may also deviate from 100 if there is misreporting of age or differential omission in the enumeration of persons belonging to a given age or both. At the same time, it is well known that the age curve is not linear. Hence, even if the age data are completely accurate, the age ratios may deviate from the normative value of 100.

The age ratios for the tribal population of Chhattisgarh and Madhya Pradesh are presented in tables 2 and 3 for each of the 5-year age group from 5-9 through 70-74 years separately for total, rural and urban populations as well as for males and females. The age ratios frequently deviate from the normative value of 100 in both the states suggesting that there are errors in the reported age data as well as possible abrupt fluctuations in the levels of mortality. In Madhya Pradesh age ratios for males vary from a high of 132 in the age group 60-64 to a low of 78 in the age group 55-59 while for females, these ratios vary from 120 in the age group 60-64 years to 79 in the age group 15-19 years. By contrast, the variations in age ratios in Chhattisgarh are relatively narrow. An age ratio of 132 in the age group 60-64 years for males in Madhya Pradesh implies that there almost one-third more males in the age group 60-64 years as compared to the average number of males in the age groups 55-59 and 65-69 years. Similarly, an age ratio of 79 for females in the age group 15-19 years in Madhya Pradesh implies that there are 21 per cent less females in the age group 15-19 years as compared to the average number of females in the age group 10-14 years and 20-24 years. Interestingly, consistently high age ratios in the age group 60-64 years have been estimated for the two states, in rural and urban areas or among males and females. The only exception is tribal male in the urban areas of Chhattisgarh where the age ratio is estimated to be less than 100. Moreover, exceptionally high age ratios in the age group 60-64 years are invariably associated with exceptionally low age ratios in the age groups 55-59 years and 65-69 years. This pattern of age ratios may also be due to the result of the enumerator bias in addition to misreporting in the age information. They may also be the result of abrupt changes in the levels of fertility mortality or the result of migration which is always sex selective.

Compared to Madhya Pradesh, variations in age ratios in Chhattisgarh are relatively narrow. For the total population, the highest sex ratio for males in Chhattisgarh has been estimated to be 116 in the age group 35-39 years whereas in females, the age ratio has been found to be the highest in the age group 60-64 years. It is not clear whether relatively larger fluctuations in age ratios in tribal population of Madhya Pradesh are due to abrupt changes in the levels of fertility mortality and patterns of migration or are due to age misreporting or differential omission of persons of a specific age group at the time of enumeration or due to the enumerator bias or the combined effect of the three factors.

Age ratios are primarily measures of 'net age misreporting.' They should not be taken as measures of net census error. They should also not be taken as valid

Table 2 : Age ratios in tribal and non-tribal populations in Chhattisgarh, 2001

Age Group	Chhattisgarh											
	Tribal						Non-Tribal					
	Total		Rural		Urban		Total		Rural		Urban	
	M	F	M	F	M	F	M	F	M	F	M	F
0-4												
5-9	107	102	108	102	105	104	109	103	109	104	108	105
10-14	112	115	112	116	109	110	110	116	110	117	110	112
15-19	93	93	98	99	101	100	88	87	87	84	92	95
20-24	84	94	83	91	95	103	94	98	94	98	95	99
25-29	107	101	108	103	94	93	100	101	100	100	101	100
30-34	96	99	96	99	99	98	105	103	106	105	100	98
35-39	116	108	116	109	110	102	106	105	106	103	113	113
40-44	91	95	90	93	98	107	92	92	92	92	89	90
45-49	105	100	105	100	101	97	104	103	104	103	103	104
50-54	96	100	96	101	96	101	92	94	93	95	87	89
55-59	92	90	92	90	79	85	96	94	96	94	86	93
60-64	113	110	113	112	120	110	116	113	114	114	129	112
65-69	89	94	89	94	82	92	95	99	95	99	87	98
70-74	108	108	106	110	116	113	103	103	103	104	106	105
75-79												
80+												

Table 3: Age ratios in tribal and non-tribal populations in Madhya Pradesh, 2001

Age Group	Madhya Pradesh											
	Tribal						Non-Tribal					
	Total		Rural		Urban		Total		Rural		Urban	
	M	F	M	F	M	F	M	F	M	F	M	F
0-4												
5-9	109	105	110	105	105	104	112	108	112	109	108	105
10-14	113	112	113	113	109	110	108	114	108	115	110	112
15-19	84	95	82	92	101	100	79	84	78	78	92	95
20-24	90	99	89	97	95	103	100	103	101	105	95	99
25-29	102	96	103	97	94	93	100	99	100	99	101	100
30-34	100	99	100	99	99	98	106	103	107	106	100	98
35-39	111	107	111	107	110	102	104	106	103	102	113	113
40-44	94	99	93	95	98	107	91	92	91	93	89	90
45-49	98	95	98	95	101	97	105	103	105	102	103	104
50-54	102	104	103	105	96	101	87	88	87	88	87	89
55-59	78	80	78	78	79	85	96	95	97	96	86	93
60-64	132	123	133	129	120	110	120	115	120	117	129	112
65-69	84	89	84	87	82	92	93	97	94	97	87	98
70-74	116	120	116	124	116	113	101	106	101	107	106	105
75-79												
80+												

indicators of error for particular age group (Shryock and Siegel, 1976)[2]. Rather age ratio scores are used for appraising the age data collected in the census and in other large scale surveys. The age ratio score is the mean absolute deviation of age ratios for different age groups from 100. The age ratio score is calculated separately for males and females. The simple average of the age ratio scores for males and females is treated as a measure of the overall accuracy of the age data across the two sexes and is often referred to as the age accuracy index.

Sex Ratios

It is well known that the probability of a male birth and the probability of a female birth are not same. The ratio of a male to a female birth is universally assumed to be 105-106 boys for every 100 girls. This ratio is even more favourable to males at the time of conception - around 120 males for every 100 females. The reason is that males are more fragile than females and the intra-uterine mortality of male foetus is substantially higher than the female foetus.[8,9] It has also been observed that the mother nature tries hard to compensate for the fragility of male foetus by allowing significantly more boys to be conceived at a time of year when conditions for pregnancy and birth are optimal.[10]

After birth, the survival probability of a female child is generally higher than that of male child because of a number of factors. The fact that females have two X chromosomes and males one probably confers a survival advantage on females as compared to males[8] greater average level of estrogens in pre-menopausal women almost certainly protect them against the development of coronary heart diseases.[11] Women have also been found to adjust more rapidly to changes in the environmental temperature and they have physiological advantages. On the other hand, tougher living conditions of women including social discrimination against the fair sex and the risk of death associated with the complications of pregnancy and delivery put women at a disadvantage to men in most of the developing countries[12]. Similarly, the sex selective migration of the working age population also affects the ratio of male to females in different age groups. The net result of all these factors is that the ratio of males to females in any population, popularly known as the sex ratio varies with age. If the effect of migration is excluded then the sex ratio is very high at very young ages starting at around 105-106 at the age 0. Age-specific sex ratios are then expected to decline with age, attaining a ratio of around 100 for persons in their late 20s, and continue to decline to levels around 50 to 60 in the oldest ages[13] because of lower female mortality as compared to the male mortality. This normative age pattern of sex ratio is disturbed by extreme forms of a number of man made interventions which include war and conflicts which effect the size of the male population and discrimination against females at individual, family and community levels of which perhaps the most livid example is the female-specific abortion and female infanticide and which effect the size of the female population.

The sex ratios for combined tribal population of rural and urban areas as well as the tribal population in rural and urban areas of the two states are presented in table 4 and 5 for different age groups. In Madhya Pradesh tribal males outnumber tribal females and in the urban areas, this difference is quite substantial. By contrast, in Chhattisgarh, tribal females outnumber tribal males in rural areas only. In the urban

Table 4:Sex ratios in tribal and non-tribal population in Chhattisgarh, 2001

Age	Tribal			Non-tribal		
	Total	Rural	Urban	Total	Rural	Urban
0-4	100	100	102	104	103	107
5-9	101	101	102	103	102	106
10-14	105	105	104	105	105	105
15-19	105	104	110	111	111	113
20-24	91	89	113	101	98	110
25-29	97	97	100	100	99	102
30-34	92	91	103	98	95	105
35-39	106	106	104	105	104	106
40-44	104	103	115	108	103	119
45-49	105	104	126	104	100	114
50-54	103	101	133	107	102	121
55-59	90	89	113	95	91	108
60-64	84	84	81	88	85	96
65-69	78	78	75	84	82	93
70-74	81	81	79	88	87	95
75-79	75	75	80	84	82	93
80+	86	86	82	85	86	81
All ages	99	98	106	102	103	107

Table 5: Sex ratios in tribal and non-tribal population in Madhya Pradesh, 2001

Age	Tribal			Non-tribal		
	Total	Rural	Urban	Total	Rural	Urban
0-4	102	102	104	108	108	110
5-9	103	103	105	108	108	110
10-14	110	110	112	114	115	112
15-19	109	108	123	128	133	121
20-24	93	91	114	113	110	118
25-29	97	97	102	104	104	104
30-34	97	96	104	103	101	105
35-39	110	110	109	111	113	107
40-44	113	112	126	120	117	126
45-49	107	106	126	112	109	117
50-54	116	115	129	122	119	128
55-59	85	84	100	93	89	104
60-64	93	94	87	99	100	97
65-69	84	84	82	92	92	92
70-74	95	95	89	104	107	99
75-79	79	79	79	94	94	93
80+	86	87	80	92	95	84
All ages	103	102	110	110	110	111

areas of Chhattisgarh, males outnumber females quite substantially presumably because of the migration of tribal males from rural to urban areas. Moreover a very clear age specific pattern in the sex ratios may be seen in both the states. The sex ratio is invariably favourable to males in the age group 0-19 years; it is favourable to females in the age group 20-34 years, favourable to males in the age group 35-54 years and again favourable to females in the age group 55 and more. Although, the pattern is same, yet the sex ratios are relatively higher in Madhya Pradesh than in Chhattisgarh.

Comparison with Non-tribal Population

It will be interesting to compare the age distribution of the tribal population with the non-tribal population. Figures 4 to 6 present Lorenz curves that show the dissimilarity between the age distribution of the tribal population with the age distribution of the non-tribal population of Madhya Pradesh for the combined, rural and urban populations. Similarly, figures 7 to 9 present Lorenz curves showing dissimilarity between the age distributions of tribal population with the age distribution of non-tribal population in Chhattisgarh. It is clear from the figures and the table that the age distribution of the tribal and non-tribal population in Madhya Pradesh is not same. In general, the tribal population of Madhya Pradesh is younger than the non-tribal population. As the result, the young dependency in the tribal population of the state is higher than the young dependency in the non-tribal population. This observation coupled with the fact that the child-woman ratio in the tribal population is higher in the tribal population than the child-woman ratio in the non-tribal population indicates that fertility in the tribal population of Madhya Pradesh is higher than the fertility in the non-tribal population of the state. Similarly, the observation that the old age dependency as well as the proportion of population with at least 60 years of age is higher in non-tribal population as compared to the tribal population of the state suggests that mortality among the tribals of Madhya Pradesh is higher than the mortality among the non-tribals. This relatively higher level of fertility and mortality in the tribal population of the state as implied by the age and sex data suggests that the health and family welfare status of the tribal population of Madhya Pradesh is comparatively poorer than the health and family welfare status of the non-tribal population of the state. By contrast, the age distribution of tribal and non-tribal population in Chhattisgarh is very similar which means that the levels of fertility and mortality in the tribal and non-tribal population in Chhattisgarh is very similar

Quality of Age and Sex Data

The observed variations in the age ratios and sex ratios as discussed above are the result of two groups of factors, the overall quality of the age and sex data and variations and changes in the demographic processes. In the absence of changes and variations in the demographic processes, the 'accurate' age data are rectangular distributed and the age-specific sex ratios decline over the life cycle in an even manner. Departures from these patterns result inaccurate data patterns.

Figure 4 : Lorenz curves for tribal and non-tribal population (Madhya Pradesh)

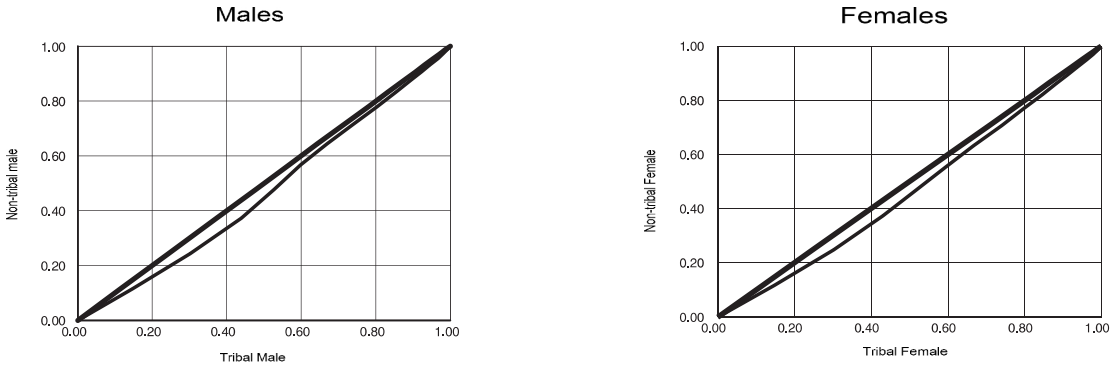


Figure 5: Lorenz curve for tribal and non-tribal population (Madhya Pradesh-rural)

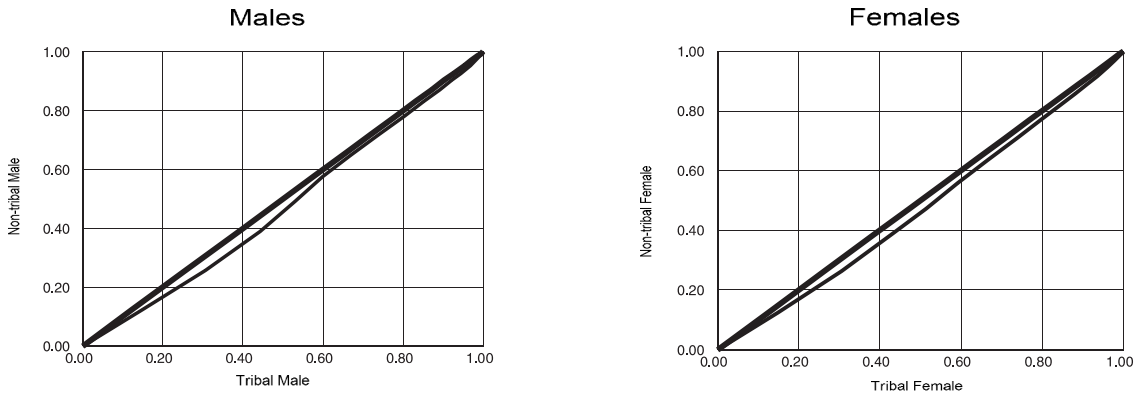


Figure 6: Lorenz curve for tribal and non-tribal population (Madhya Pradesh-urban)

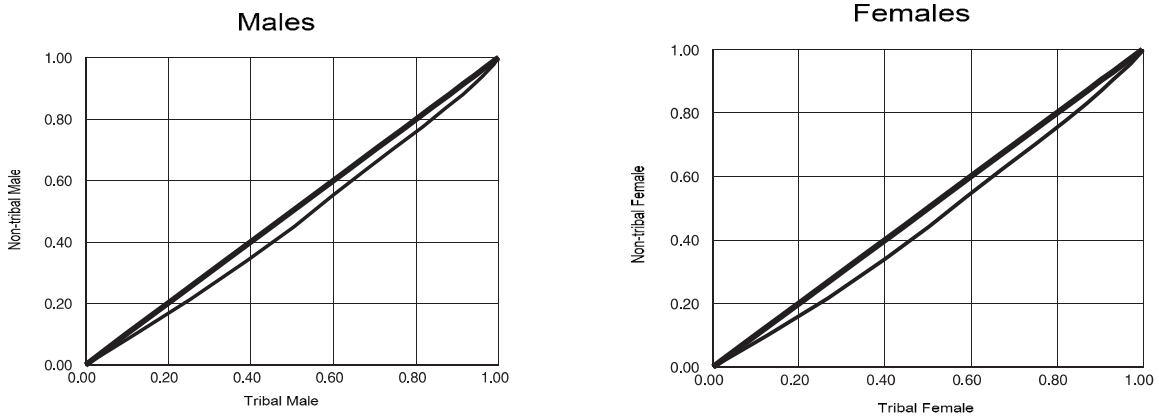


Figure 7 : Lorenz curve for tribal and non-tribal population (Chhattisgarh)

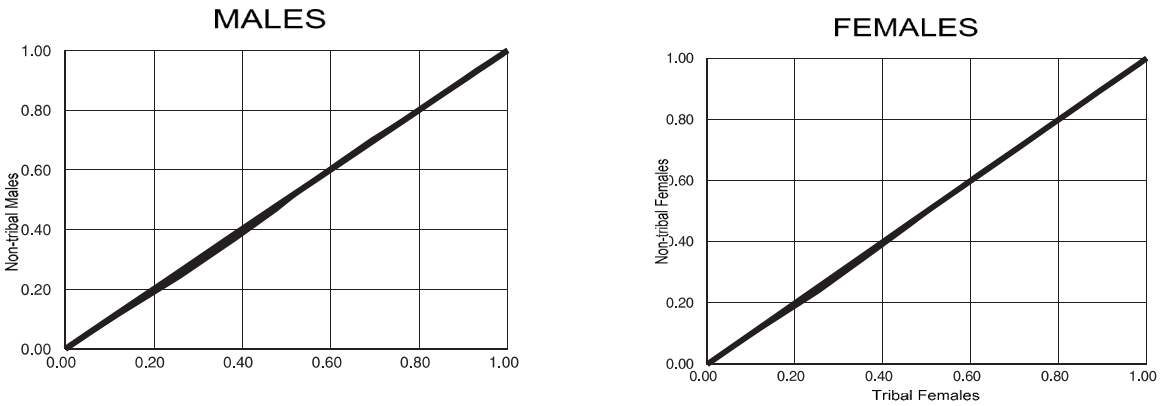


Figure 8 : Lorenz curve for tribal and non-tribal population (Chhattisgarh-rural)

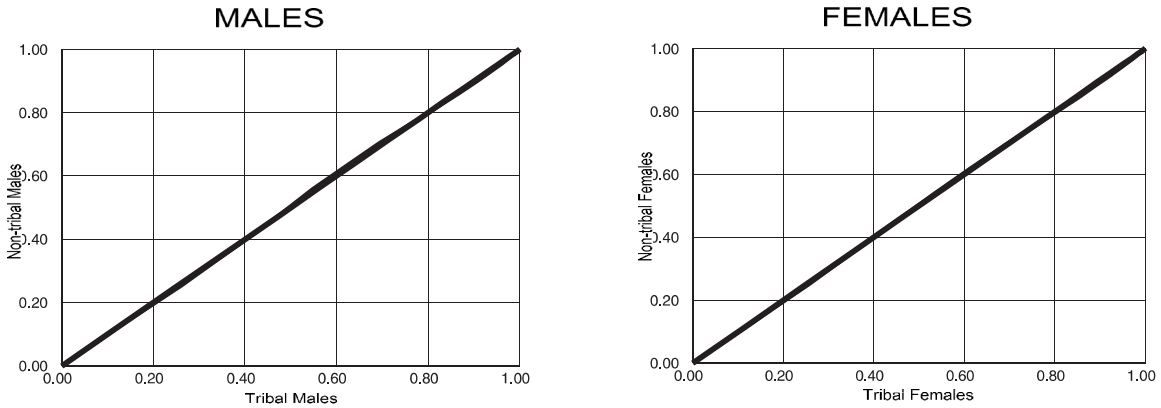
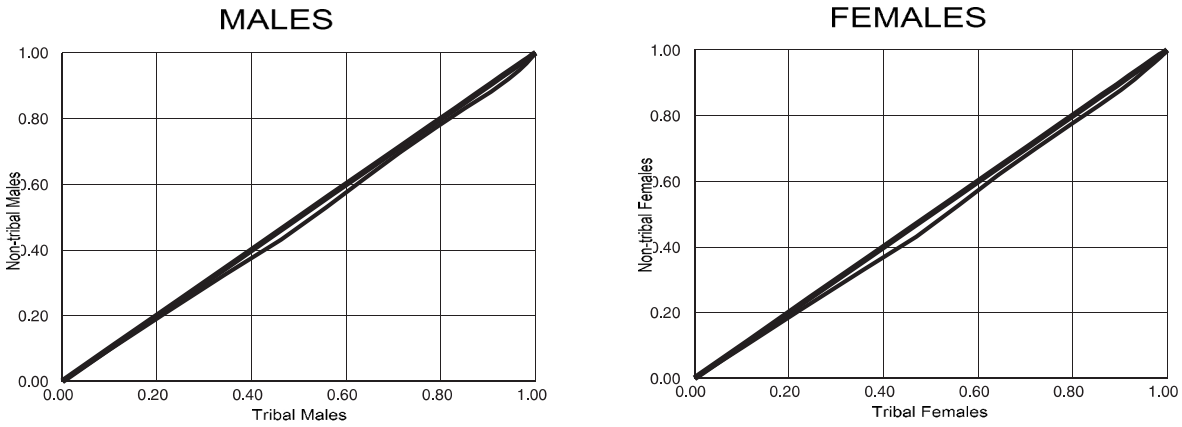


Figure 9 : Lorenz curve for tribal and non-tribal population (Chhattisgarh-urban)



The overall quality of age and sex data can be judged by the age-sex accuracy index which is the sum of age ratio score for males, age ratio score for females and three times the sex ratio score.[2,3] According to the United Nations (1955), the permissible values of the age ratio scores are 2.6 for males and 2.4 for females. On the other hand, the permissible limit for sex ratio score is 1.5. Combining the three, the permissible limit for age-sex accuracy index is 9.5. Based on the empirical analysis of the age sex data available from population census in different developed and developing countries, the United Nations also suggests that the age and sex structure of a population may be classified as (a) accurate if the age-sex accuracy index is under 20, (b) inaccurate if the index is between 20 and 40, and (c) highly inaccurate if the index is above 40.[5] Arriaga suggests that the age-sex accuracy index is useful mainly in international and historical analysis. Historical series of the index indicates whether the quality of population age sex reporting is improving or deteriorating. Arriaga also stresses that although the age-sex accuracy index and its different components quantify the quality of the age sex information, the age sex data must also be examined graphically.

The age and sex ratio scores and the age-sex accuracy index for the tribal population of Chhattisgarh and Madhya Pradesh are given in table 6 separately for combined as well as separately for rural and urban tribal population. The age-sex accuracy index for the tribal population of Madhya Pradesh is higher than the corresponding index for the tribal population of Chhattisgarh. Moreover the index is higher than 40 in Madhya Pradesh but less than 40 in Chhattisgarh indicating that while the age and sex data of the tribal population in Chhattisgarh is 'inaccurate' according to the United Nations criteria, it is high inaccurate in Madhya Pradesh according to the same criteria. A similar situation persists in the rural and urban areas of the two states. On the other hand, a comparison of the age-sex accuracy index of the tribal population of Madhya Pradesh with the non-tribal population of the state indicates that in the rural areas of the state the quality of age-sex data of the tribal population is marginally better than that of the non-tribal population but in the urban areas of the state, the quality of age-sex information of the non-tribal population is definitely better than that in the tribal population.

Although, age-sex accuracy index is a very simple summary measure of the accuracy of age and sex data, yet it has a number of limitations. Perhaps, the most serious limitation of the index is that it does not take account the expected decline in the sex ratio with increasing age and the real irregularities in the age composition due to normal fluctuations in births, deaths and patterns of migration. Another problem with the index is that considerable weight is given to sex ratio component in estimating the age-sex accuracy index and the logic of giving this weight is not clear. Because of these limitations, the age and sex accuracy index is useful in making rough comparisons and distinctions between and among populations[14]. The major function of this index appears to be its ability to flag extreme values in the age and sex data. In general these extreme values are due to under enumeration and

misreporting. At the same time, some of inaccuracies in the data captured by the age-sex accuracy index may actually be due to abrupt changes in the levels of fertility and mortality which influence the demographic processes.

Table 6: Accuracy of age and sex data in Chhattisgarh and Madhya Pradesh available from 2001 population census.

Measure	Chhattisgarh		Madhya Pradesh	
	Tribal	Non-tribal	Tribal	Non-tribal
		Combined		
ARS (Male)	9.11	5.62	11.26	8.59
ARS (Female)	6.68	6.12	7.29	7.33
AAI	7.90	5.87	9.58	7.96
SRS	5.86	4.46	8.84	9.31
ASAI	33.38	25.13	45.66	43.83
		Rural		
ARS (Male)	9.43	6.82	11.60	10.02
ARS (Female)	6.71	6.37	7.88	7.94
AAI	8.07	6.60	9.74	8.98
SRS	6.09	4.84	9.15	10.54
ASAI	34.40	27.73	46.94	49.57
		Urban		
ARS (Male)	6.43	2.88	8.50	6.07
ARS (Female)	7.48	5.89	9.49	6.54
AAI	6.96	4.39	9.00	6.31
SRS	7.68	5.93	8.49	7.92
ASAI	36.95	26.56	43.47	36.36

Note : ARS=Age Ratio Score, SRS=Sex Ratio Score, AAI=Average Age Accuracy index, ASAI= Age Score Accuracy Index

CONCLUSIONS

Using the age and sex information about the tribal population of Madhya Pradesh and Chhattisgarh available from the 2001 population census, this paper highlights the dissimilarity between the age and sex structure of the tribal population of Chhattisgarh with that of Madhya Pradesh as well as between the tribal and non-tribal population of Madhya Pradesh. Although the age and sex data available from the 2001 population census appears to be inaccurate to highly inaccurate, yet the analysis reflects the essential dissimilarity in the age and sex composition of the tribal population in Madhya Pradesh and Chhattisgarh and in the tribal and non-tribal population of Madhya Pradesh. The observed dissimilarity in age and sex structure is the result of the difference in the pace of demographic transition and different patterns of migration that has taken place in the tribal population of the two states in the past as well as between tribal and non-tribal populations. The analysis presented here indicates that the health and family welfare status of the tribal population in Madhya Pradesh is poorer than the health and family welfare status of the non-tribal population. One can also visualise a similar situation in Chhattisgarh also. In the light of the present analysis, it would be interesting to explore the determinants of health and family welfare among tribal and non-tribal populations.

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REGIONAL VARIATIONS IN REPRODUCTIVE AND CHILD HEALTH STATUS IN RAJASTHAN

B.L.Nagda*

Abstract **:** *The health conditions of pregnant women, neonatal and infants in most of the states in India are woefully poor and need urgent attention from a number of fronts. The Govt. of India initiated the reproductive and child health (RCH) programme in 1996-97 and expect to provide quality of services and achieve multiple objectives. Rajasthan has great physical, geographical, demographical and socio-economical diversity. Most of tribes of the state are inhabited on hillocks and to its bottom. Physical terrain and living style of tribal, create their health hazards, because of modern means of health and medical services is very difficult to reach at grass root level. Reproductive and child health indicators are poor in these areas. The present study was based on data of district household RCH survey of Rajasthan. The State has great variations in socio-economic and geographical situation. The, available data on household survey was analysed on the bases census regions to find out the regional disparity in RCH indicators in the state.*

INTRODUCTION

The health conditions and the quality of health care services available to the pregnant women and the newborn infants in most of the states in India are woefully poor and calls for urgent attention from a number of fronts. The situation required to strengthening the primary health care system in the rural India. There is an urgent need to ensure the improvement, efficiency and acceptability of health and medical system. The system has to be evolved to take appropriate and timely action to remove short falls according to stipulated norms. There is also, great need to take urgent measures in order to improve the health conditions of the pregnant women and newborn child because of the maternal mortality rate in rural areas of the country was highest in the world. From a global perspective, India accounts for 19 percent of all lives births and 27 percent of all maternal deaths. The plenty of statistical evidences are available to prove these points but for some reasons or the others, the needed actions are not forthcoming. For example, the maternal mortality rate in India as a whole has not declined significantly during the past three decades. In the health policy adopted in 1984 and called "Health for All by 2001" It was decided to bring down MMR to 300 or less by per 100,000 live births by 2001. However, the MMR remains above 400 as on 2005 and in many states over 600. With regard to infant mortality rate (IMR) even in 2004 it was 64 per 1000 live births and was hovering around 70 for the last two decades. The national population policy of 2000 (NPP 2000)[1] expects it to decline to 30 or less by 2010, the achievement of the target seems to be not

*Assistant Director, Population Research Centre, Mohan Lal Sukhadia University, Udaipur -313 001 Rajasthan Email: blnagda@yahoo.co.in

possible in continuance of the present trend. The neo-natal mortality rate or the number of infant deaths within first month of life, constitutes a large proportion of the infant deaths within one year, almost two-thirds, and further declines in IMR was possible only by specific programme aimed at reducing the neo-natal mortality rate. The reasons underlying the neo-natal mortality are strongly linked with the health conditions and health care services provided to the pregnant women during her pregnancy and at the time of delivery. It was an obligation of any civilized society to extend full care to the pregnant woman during the antenatal, natal and postnatal period.

Sources of Data

The Data on Regional Variation of Reproductive and Child Health Indicators in Rajasthan was obtained from Regional Level Household Survey of Rajasthan 2002-2004.The raw data of these surveys was collected from International Institute for Population Sciences Mumbai (IIPS).[2]

The Western Region of the state has eleven districts and Northeastern Region include twelve districts. The Southern Region has four tribal dominated regions and southeastern region including five districts knows as Hadoti areas of the State.

OBJECTIVES

1. To assess the performance of ANC and Immunization services on regional bases.
2. To find out the regional variation in Contraceptive Prevalence Rate and Unmet need for Family Planning.
3. To examine the Regional variation in Utilization of health services

METHODOLOGY

Data of Regions Level Household Survey of Rajasthan 2002-2004 has been used to analyze the regional variation of RCH indicators. The data of RCH indicators was computed based on the regions. The criteria of classification of regions are based on NFHS-3.[3] NFHS has classified the regions on the basis of demographic indicators. Thirty-two districts of the state was divided into four demographic regions of Rajasthan shown in table 1

Table 1: Regions of Rajasthan

Regions	Districts
Western Region	Ganganagar, Bikaner, Hanumangarh, Churu, Jaisalmer, Jodhpur, Nagaur, Pali, Barmer, Jalor, Sirohi
Northeastern Region	Jhunjhunun, Alwar, Bharatpur, Dhoulpur, Swaimadhopur, Karoli, Dausa ,Jaipur, Sikar, Ajmer, Tonk, Bhilwara
Southern Region	Dungarpur, Banswara, Udaipur, Rajsamand
Southeastern Region	Chittorgarh, Bundi, Kota, Baran, Jhalawara

Maternal Care

Under the RCH programme at least three antenatal check-ups, two doses of tetanus toxoid vaccine and iron and folic acid supplementation during first three months of pregnancy are encouraged. The institutional deliveries or home deliveries attended by trained medical professionals, and three postpartum visits were also envisaged under the programme.

The information on antenatal care (ANC) services was collected from women who experienced either a live or stillbirth during the three years preceding the survey. Table 2 reveals that more than two-third of women (69%) received any antenatal check-up during pregnancy. One third of pregnant women received three and more ANC and eleven percent women were checked-up for antenatal services at home. Very little (3.7 %) number of pregnant women was received full ANC services. The women who received any kind of ANC were the lowest in western region. The lowest number of pregnant women who received full ANC was reported in southern region (3.35 %).

Use of TT injection and IFA tablets

Table 3 shows the use of Tetanus Toxide (TT) injection and Iron folic acid tablets (IFA). About 10 percent of women received at least one TT injection and 59 percent received at least two TT injections. Western region reported the lowest number (8 percent) of pregnant women who received at least one TT injection. As far as consummation of iron and folic acid tablets was concerned , about one fourth (27%) of pregnant women consumed one iron folic acid tablets regularly during their pregnancy and about 15 percent of the pregnant women consumed two or more iron folic acid tablets regularly during pregnancy. The lowest consummation of at least one iron folic acid tablet regularly during pregnancy has been reported in western region (21.8 %) and the highest (35.12 %) consummation was reported in Southern eastern region. The lowest number of consummation of two and more tablets of iron folic acid regularly during pregnancy are reported in northeastern region (13.7%) and the highest consummation of two and more tablets of iron folic acid regularly during pregnancy have been reported in southern region (19.30%). Few (8%)

Table 2: Regional variations in Antenatal Check-ups(%)

Name of Regions	No ante-Natal	Any ante-natal	Three and more ANC	Ante-natal Check-up at home	Full ANC
Rajasthan	31.0	69.0	32.15	11.29	3.71
Western Region	40.97	59.03	27.15	7.83	3.86
Northeastern Region	25.56	76.10	33.0	13.62	3.67
Southern Region	29.72	70.27	32.57	11.35	3.35
Southeastern Region	23.22	76.78	40.68	13.28	5.78

pregnant women received hundred or more IFA tablets during the pregnancy. The lowest number of pregnant women consumed hundred or more IFA tablets during the pregnancy in Northeastern region (5.9 %) and the highest numbers of pregnant women have consumed hundred or more IFA tablets during the pregnancy in Southeastern region (11.47 %).

Table 3 : Regional variations in use of TT injection and IFA tablets during pregnancy(%)

Name of Regions	No TT injection	One TT injection	Two or more TT injection	Consumed one IFA tablet regularly	Consumed two or more IFA tablet regularly	Received 100 or more IFA tablets
RAJASTHAN	30.8	10.17	58.82	27.06	15.09	7.6
Western Region	41.80	8.19	49.85	21.82	13.71	8.45
NortheasternRegion	23.42	10.94	63.57	29.27	13.66	5.95
Southern Region	29.35	12.77	57.55	33.60	17.05	8.30
SoutheasternRegion	29.50	13.22	82.27	35.12	19.30	11.47

Delivery (Jappa)

The information about the institutional and safe deliveries performed during three years period proceeding to survey has been shown in table 4. About 31% of women had institutional deliveries during three years period preceding the survey. The great regional variation was observed in performance of institutional deliveries. The highest performance of institutional deliveries was reported in the southeastern region (39.16 %) and the lowest institutional deliveries performed in Western region (23.2%). Because of the fact that the western region was being desert and semi desert, the population and settlement was scattered therefore, the health and medical facilities are not reach up to the mark. Among the total deliveries, about 20 percent deliveries performed at Government health institutions and 11 percent at private health institutions. The lowest numbers of deliveries in government institutions were performed in western region (13.26%) and the highest in southern eastern regions (27.46%). Whereas, the highest number of institutional deliveries performed at private institutions were in northeastern region (13.28%) and again the lowest in western region (9.9%). In the state, about 48 percent deliveries were safely conducted (either institutional delivery or home delivery attended by Doctor\Nurse\TBA). It was slight higher than the national average (48%). The lowest practice of delivery assisted by skilled persons was reported in western region (45.43%) while higher percentage of safe delivery conducted by the trained skilled persons have been reported in southeastern region (53.24%).

Table 4 : Regional variations in Institutional and Safe Deliveries (%)

Name of Regions	Institutional deliveries	Institutional deliveries-government	Institutional deliveries–private	Safe Deliveries (Either institutional deliveries or home deliveries attended by Doctor/ Nurse/TBA)
RAJASTHAN	31.52	19.93	11.59	48.32
Western	23.2	13.26	9.94	45.43
Northeastern	35.35	21.05	13.28	47.86
Southern	35.22	23.77	10.45	49.25
Southeastern	39.16	27.46	11.72	53.24

Reproductive Health Problems

Detection of cases of complication of pregnancy and timely provision of treatment to such women was one of the important components of the RCH programme. In the state about 36% of currently married women who had given the births (alive\still birth) during the three years proceeding to the survey experienced pregnancy complications. Table 5 reveals that about 19% of women reported the complications during the delivery. The highest percentage of complications during the deliveries was reported in southern region (23.6%) and the lowest percentage of deliveries complications was reported in northeastern region (16.38%). About 28% of women suffered the post delivery complications in the state. The highest percentage of post delivery complications was recorded in Southern region (35%), while the lowest percentage of post delivery complications was reported in northeastern region (25.24%). The possible causes of higher level of complications among the women of southern region are malnutrition, unhygienic health condition and practicing traditional ways of conducting delivery and own way of their treatment. While enquiring about the menstruation related problems from the women it was noticed that about 19 percent of women had menstruation related problems. The highest number of women (23%) reported menstruation related problems in Southeastern region and the lowest in western region (15.32%).

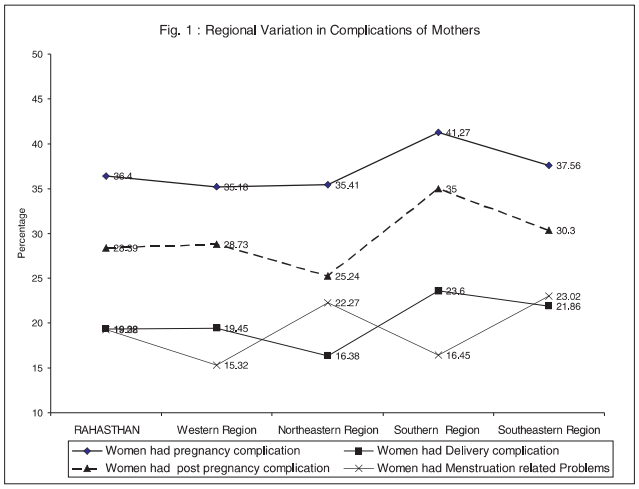

Table 5: Regional variations in complications of mothers (%)

Name of Regions	Mothers having pregnancy complication	Mothers having Delivery complication	Mothers having post pregnancy complication	Mothers having Menstruation related Problems
RAJASTHAN	36.4	19.32	28.39	19.28
Western Region	35.18	19.45	28.73	15.32
Northeastern Region	35.41	16.38	25.24	22.27
Southern Region	41.27	23.6	35.0	16.45
Southeastern Region	37.56	21.86	30.30	23.02

Knowledge of Family Planning Methods

The new philosophy and direction of Reproductive and child health programme is to meet the health care needs to women and children in the country. It envisages the provision of couples to control their fertility and have sexual relations free from the fear of pregnancy. Provision of free contraceptive services to all the needy couples was one of the components of the RCH programme. The information on knowledge of contraceptive was obtained by asking the questions about every method of family planning. Knowledge of contraception is universal in Rajasthan. Almost all the women (aged 15-44) know at least one modern method of contra-ception. About ninety percent of women have knowledge of any modern spacing method. The highest (92.8%) and the lowest (71.68%) number of women had the knowledge of any modern spacing methods of family planning found in southeastern region and southern region respectively. About half of women (52.6%) had the knowledge of all the modern family planning methods. Again, the highest (66.3%) and lowest (34.8 %) numbers of women had the knowledge of all the modern family planning methods reported in northeastern region and southern region respectively. About 15 percent of women of the state had the knowledge of any traditional methods. The highest know-ledge of traditional methods was reported in southern regions (21.88%) because of, it is tribal dominating areas and tribal women are still practicing traditional methods of birth control (table 6).

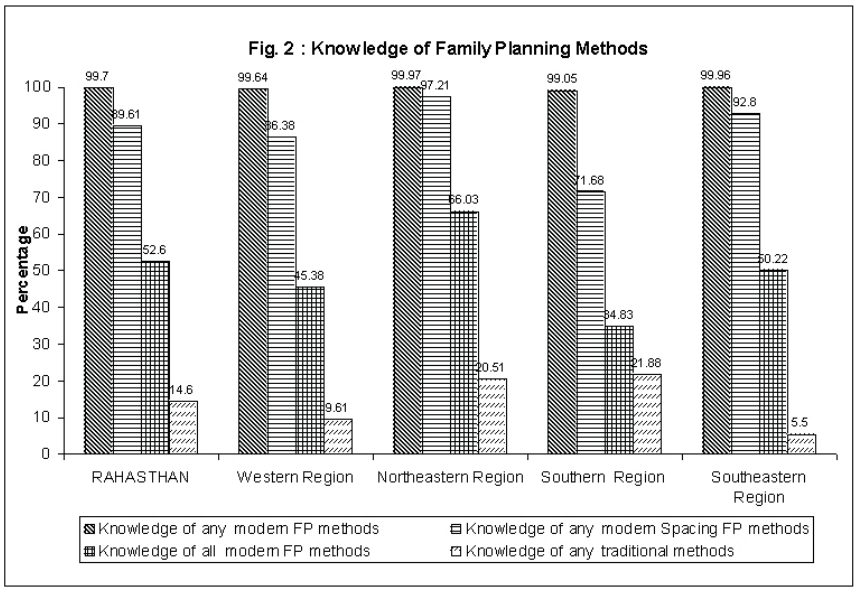

Table 6: Regional variations in Knowledge of Family Planning Methods(%)

Name of Regions	Knowledge of any modern FP methods	Knowledge of any modern Spacing FP methods	Knowledge of all modern FP methods	Knowledge of any traditional methods
RAJASTHAN	99.7	89.61	52.6	14.6
Western Region	99.64	86.38	45.38	9.61
Northeastern Region	99.97	97.21	66.03	20.51
Southern Region	99.05	71.68	34.83	21.88
Southeastern Region	99.96	92.80	50.22	5.5

Current Use of Family Planning Methods

Current Use of Family Planning Methods is one of indicator of population control. Table 7 shows that about forty-one percent of currently married women in age group 15-44 years were using the modern methods of contraception. About 30 percent of women and less than one percent of male have opted sterilization method of birth control. The highest number of cases of sterilization (31.11%) found in Northeastern Region and the lowest acceptors of sterilization reported in southern region. The current use of IUD and pills were 1.43 percent and 2.73 percent respectively. About six percent male were using Nirodh at the time of the survey. Overall, contraceptive prevalence rate was 40.91 percent.

Table 7: Regional variations in Current use of Family Planning Methods (%)

Name of Regions	Current use of female sterilization	Current use of male sterilization	Current use of IUD	Current use of Pills	Current use of Nirodh
RAJASTHAN	30.14	O.50	1.43	2.73	6.11
Western Region	29.50	0.45	1.81	2.85	5.27
Northeastern Region	31.11	0.55	1.18	2.36	6.20
Southern Region	25.85	0.52	1.68	3.2	6.02
Southeastern Region	30.26	0.48	1.04	3.02	7.84

Unmet Need of Family Planning Methods

Unmet need for limiting methods has been defined as the proportion of currently married women who are neither in menopause, nor had hysterectomy, nor are currently pregnant and do not want any more children but are currently not using any family planning method. Whereas, the definition of unmet need for spacing methods is similar to the definition of unmet need for limiting methods but women desired to have additional children, after two years of birth of baby and currently not using any contraception. The unmet need for family planning methods is the total of unmet need for limiting and spacing the birth. About 22 percent of women of the state have an unmet need for family planning. The unmet need for limiting was higher (13.6%) as compared to unmet need for spacing (8.7%). The highest unmet need for limiting and spacing are recorded in southern region (25%) followed by southeastern region (24.8%). The lowest unmet need recorded in Northeastern region (20.28%).

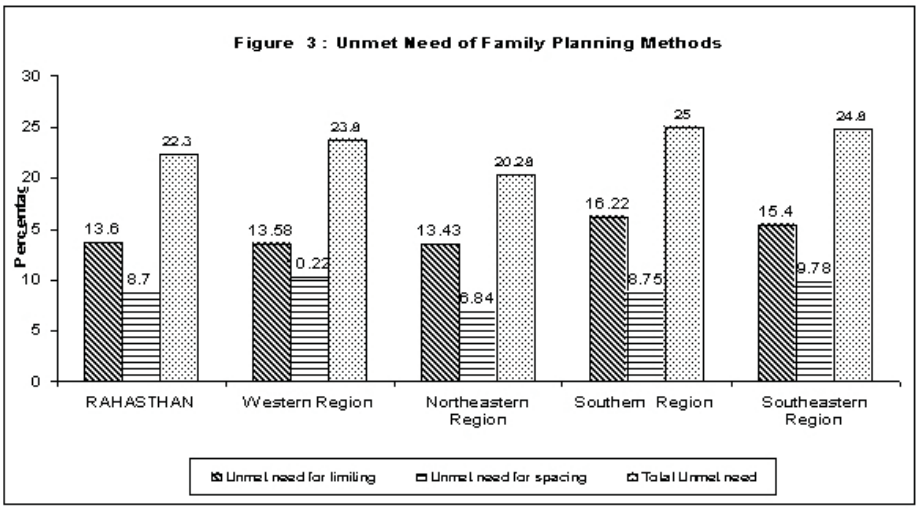

Table 8: Regional variations in Unmet Need for Family Planning Methods (%)

Name of Regions	Unmet need for limiting	Unmet need for spacing	Total Unmet need
RAJASTHAN	13.6	8.7	22.3
Western Region	13.58	10.22	23.8
Northeastern Region	13.43	6.84	20.28
Southern Region	16.22	8.75	25.0
Southeastern Region	15.4	9.78	24.8

Vaccination of Children

Under the Universal Immunization programme in India, it was expected that the all the infants are protected against six fatal cause of infant and child mortality, namely Tuberculosis, Diphtheria, whooping Cough, Tetanus, Poliomyelitis and measles. Acute respiratory infections (ARI) and diarrhea are also the concerns of the programme. Children who have received one dose each of BCG and measles vaccines and three doses each of the DPT and polio vaccines are considered as fully vaccinated. National population Policy (2000) reiterated the on going Universal Immunization Programme as one of the strategies to achieve hundred percent immunization of children. At present, immunization coverage of children was lagging behind the goal of universal immunization programme. As per the household survey, data shows in table 9 that about 61 percent of children age 12-35 months received BCG in the Rajasthan. The highest percentage of children age 12-35 months received BCG in southeastern region (70.7 %) and the lowest percentage of children age 12-35 months received BCG in western region (56.6 %). In the State 36.5 percent of children age 12-35 months received three doses of DPT. The wide regional variation found in the State. The highest number (43.7%) of children age 12-35 months received three doses of DPT in southeastern region and lowest in southern region (31.85%). Three doses of polio received of children age 12-35 months in the State was 37.4 percent. The regional variation was noticed in three doses of polio vaccine in the State. The highest number (46.5 percent) of children age 12-35 months received three doses of polio in southeastern region and the lowest in southern region (31.1%). About one third of the children age 12-35 months received measles in the State. Again, the highest number (46.9%) of children age 12-35 months received measles in southeastern region and the lowest in southern region (33.7%). Only one fourth of children age 12-35 months received full immunization and protected against six fatal causes of infant and child mortality in the state.

Table 9 : Regional variations in Immunization of Children in Age Group 12-35(%)

Name of Regions	Received BCG (%)	Received DPT 3 (%)	Received POLIO 3 (%)	Received Measles (%)	Received Full Immunization (%)
RAJASTHAN	60.94	36.5	37.38	37.06	26.50
Western Region	56.61	36.88	38.83	36.46	26.65
Northeastern Region	62.12	36.95	36.14	36.36	26.34
Southern Region	57.02	31.85	31.1	33.75	23.42
Southeastern Region	70.72	43.72	46.54	46.90	31.82

Awareness of Women about RTI/STI and HIV/AIDS and Complications

Awareness of women about RTI/STI and HIV /AIDS was important issue of timely identification and management of reproductive tract infection. It was an important objective of the Reproductive and Child heath programme. Untreated reproductive tract infections can cause pregnancy related complications, congenital infections, infertility, and problem chronic pain etc. Reproductive tract infections (RTI) and sexually transmitted infections (STI) are one of the major health hazards among both males and females[4]. Table 10 reveals that about 62 percent and 31 percent of women of the state was aware about RTI\STI and HIV (AIDS) respectively. The higher awareness among the women about RTI \ STI has been reported in Northeastern region (80.3%) and the lowest awareness of women about RTI\STI was noticed in western region (48.15%). Awareness of women about HIV\AIDS was higher in Southern region (34.4 percent) and lower in Western region (28.3 %). In all, one forth of women reported the problems related to abdominal vaginal discharge. The highest number of women of Northeastern region (32.5 %) suffered by abdominal vaginal discharge and the lowest number of women suffered by abdominal vaginal discharge in Western region (17.56 %). About half of the women (48.2 %) who had any symptoms of RTI\STI reported in the state. The wide regional variation has been observed in women having any symptom of RTI\STI. The higher number of women of Northeastern region (51.8 %) had any symptom of RTI \ STI. Women of the western region (43.38%) had reported the lowest any symptom of RTI\STI in the state.

Table 10: Awareness of Women about RTI/STI and HIV /AIDS and Complications (%)

Name of Regions	Women aware of RTI/STI	Women aware of HIV/AIDS	Women suffered by abdominal vaginal discharge	Women had any symptom of RTI/STI
Rajasthan	62.3	30.79	25.5	48.25
Western Region	48.15	28.30	17.56	43.38
Northeastern Region	80.30	33.15	32.51	51.87
Southern Region	50.72	34.37	22.05	45.95
Southeastern Region	60.72	30.8	27.74	51.1

DISCUSSION AND CONCLUSIONS

The reproductive and child health (RCH) programme initiated in 1996-97 and expected to provide quality of services and achieve multiple objectives. It ushered a positive paradigm shift from method oriented target –based activity to provide client–centered ,demand driven, quality services and efforts are made to reorient provider's attitude at grassroots level and to strengthen the services at outreach levels. This approach requires decentralization of planning, monitoring and evaluation of the services. Therefore, district level data on utilization of services provided by the government health facilities were collected to know the factual implementation of the programme. The present study was based on data of district household RCH survey of Rajasthan. The State has great variations in socio-economic and geographical situation. The, available data on household survey was analysed on the bases census regions to find out the regional disparity in RCH indicators in the state[5]. The regions wise salient feature of the health Status is as under.

1. One third of pregnant women received three and more antenatal care (ANC). Very little (3.7%) number of pregnant women was received full ANC services. The women who received any kind of ANC were the lowest in western region. The lowest number of pregnant women who received full ANC was reported in northeastern region (3.67 %). About 59 percent of women received at least two Tetanus Toxide injections during pregnancy. The consummation of tablets of iron folic acid was concerned, only 15 percent of the pregnant women consumed two or more iron folic acid tablets regularly during pregnancy. The highest consummation of two and more tablets of iron folic acid regularly during pregnancy reported in southern region (19.30 %). and the lowest number of consummation of two and more tablets of iron folic acid regularly during pregnancy found in northeastern region (13.7 %)
2. Only thirty-one percent of women had institutional deliveries in the state during three years period proceeding to survey. The highest performance of institutional deliveries reported in the

southeastern region (39.16 %) and the lowest institutional deliveries performed in Western region (23.2 %). About half of deliveries were conducted safe. The lowest number of safe deliveries was in western region (45.43 %) and the highest safe deliveries conducted in southeastern region (53.24 %)

3. In the State, about 36 percent of currently married women who had given the births (alive\still birth) during the three years proceeding to the survey experienced pregnancy complications. About 19 percent of women reported the health complications during the delivery. The highest percentage of complications during the deliveries reported in southern region (23.6 %) and the lowest percentage of deliveries complications reported in northeastern region (16.38 %). About 28 percent of women suffered the post delivery complications in the state. The highest percentage of post delivery complications recorded in Southern region (35 %), while the lowest percentage of post delivery complications reported in northeastern region (25.24 %).

4. Knowledge of contraception is universal in Rajasthan. Almost all the women (aged 15-44) know at least one modern method of contraception. About ninety percent of women have knowledge of any modern spacing method. The highest (92.8 %) and the lowest (71.68 %) number of women had the knowledge of any modern spacing methods of family planning found in southeastern region and southern region respectively. About 15 percent of women of the state had the knowledge of any traditional methods. The highest knowledge of traditional methods reported in southern regions (21.88 %) because of, it is tribal dominating areas and tribal women are still practicing traditional methods of birth control.

5. Current Use of family planning methods is concerned; thirty percent of women and less than one percent of males have accepted sterilization method of birth control. The highest number of cases of sterilization (31.11 %) found in northeastern region and the lowest acceptors of sterilization reported in southern region. The current use of IUD and pills were 1.43 percent and 2.73 percent respectively. About six percent male are currently using Nirodh. Overall, contraceptive prevalence rate was 40.91 percent.

6. About 22 percent of women of the State have an unmet need for family planning. The unmet need for limiting was higher (13.6 %) as compared to unmet need for spacing (8.7%). The highest unmet need for limiting and spacing are recorded in southern region (25 %) followed by southeastern region (24.8%). The lowest unmet need recorded in northeastern region (20.28%).

7. The wide regional variation found in the status of immunization of children in State. The highest number (43.7 %) of children age 12-35 months received three doses of DPT in southeastern region and the lowest in southern region (31.85 %). Three doses of polio received of children age 12-35 months in the state was 37.4 percent. The

regional variation was noticed in three doses of polio vaccine in the State. The highest number (46.5 %) of children age 12-35 months received three doses of polio in southeastern region and the lowest in southern region (31.1 %). About one third of the children age 12-35 months received measles in the State. Again, the highest number (46.9 %) of children age 12-35 months received measles in southeastern region and the lowest in southern region (33.7 %). Only one fourth of children age 12-35 months received full immunization and protected against six fatal causes of infant and child mortality in the state.

8. About 62 percent and 31 percent of women of the state was aware about RTI\STI and HIV/AIDS respectively. The higher awareness among the women about RTI\STI reported in northeastern region (80.3 %) and the lowest awareness of women about RTI\STI noticed in western region (48.15 %). Awareness of women about HIV\AIDS was higher in southern region (34.4 percent) and lower in western region (28.3 %).

9. One forth of women reported the problems related to abdominal vaginal discharge. The highest number of women of Northeastern region (32.5%) suffered by abdominal vaginal discharge and the lowest number of women suffered by abdominal vaginal discharge in Western region (17.56 %).

10. About half of the women (48.2 %) reported any symptoms of RTI\STI in the state. The wide regional variation has been observed in women having any symptom of RTI\STI. The higher number of women of northeastern region (51.8 %) had any symptom of RTI \ STI. Women of the western region (43.38%) had reported the lowest any symptom of RTI\STI in the state.

Rajasthan has great physical, geographical, demographical and socio-economical diversity. The Southern part of the state is hilly and covered by thin forest, most of tribes of state inhabited in these areas. The settlement pattern is scattered, a village expanded in 3-4 km of areas. The tribal houses spread on hillocks and its bottom. In such situation of physical terrain and living style of tribal, create their health hazards, because of modern means of health and medical services is very difficult to reach at grass root level. Whereas, western part of the state is desert, sandy, and settlement inhabited according to availability of water and agriculture land. In this region providing health facility at individual level is very hard. There fore reproductive and child health indicators are poor in these areas as compare to north astern and southeastern regions where terrain is plain, rainfall is adequate, big villages , rapid growth of urbanization and industrialization are some of the factors which is in favors of better health indicators .

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CHILD HEALTHCARE AMONG THE SANTALS AND THE KORAS OF JHARGRAM SUB-DIVISION, DISTRICT MIDNAPORE, WEST BENGAL

Pinak Tarafdar*

Abstract : *The tribal child health care is one of the conspicuous aspect of understanding about the over all scenario of tribal health in India. The healthcare practices of the tribals are not solely related with the biological understanding of the problem but it is also influenced by their age old observation and cultural ways of approaches. As identified by the author the crucial three factors of child healthcare are the place of delivery, polio vaccination and availing of ICDS facilities. The present study was conducted among the two important tribal population of West Bengal inhabited in the most reach tribal dominated zone i.e. Jhargarm sub-division of the state. This article seems to identify the responsible cause of different consequences which ultimately affect the over all child health of the concerned population. In spite of the various initiatives taken by the Government of India there may be some persistent gap between the policy and implementation level. The study may also reveal such gap if they at all exist in the above stated programmes.*

INTRODUCTION

Healthcare practices among the tribal population are one of the conspicuous topics under the domain of medical anthropological study. The issue of tribal child healthcare is an added criterion in this regard. The process of child healthcare is associated with different cultural belief of the concerned population. This sort of practices does play some direct or indirect role as a controlling agent of the child health. As health condition of a child population determines the overall health status of the population so study on the child health is one of the important factors to explore the health scenario of any population and the tribals are not apart from that.

Safe motherhood practices and child survival programmes are critically important in a country that is experiencing high infant and child mortality and maternal mortality. Realising the importance of maternal and child healthcare services, the Ministry of Health, Government of India, took concrete step to strength maternal and child health services in the First and Second Five Years Plans. The integration of family planning services with maternal and child health services and nutrition services were introduce as a part of Minimum Need Programme during Fifth Five Year Plan. The primary objective was to provide basic public health services to vulnerable groups of pregnant women, lactating mother and preschool children. Since then, the promotion of health of mother and children has been one of the most important aspects of the Family Welfare Programme in India

*Lecturer, Department of Anthropology, University of North Bengal
District-Darjeeling-734 013, West Bengal,
Email: pinak_tarafdar@rediffmail.com / pinak_anth@rediffmail.com

and has now been further strengthened by introducing the Child Survival and Safe Motherhood Programme[1].

In the rural areas of India, maternal and child health services are delivered mainly by the government-run Primary Health Centers and Sub-centers. Service for pregnant women and children can also be obtained from private and public maternity homes or hospitals, as well as from private practitioners. The Village Health Guide is a link between the community and MCH services in rural areas. The Female Health Worker, who is an Auxiliary Nurse Midwife, render maternal and child health and family welfare services. The Female Health Assistant is providing maternal and child health services. She is responsible for registering pregnant women and assessing their throughout pregnancy in their homes or in antenatal clinic. Another responsibility of the Female Health Worker is to refer pregnant women who have symptoms of abnormal pregnancy or labour, or who have gynaecological problems that are beyond her level of competence, to the Primary Health Centre. The basic maternal and child care services offered at Primary Health Centers are antenatal and postnatal care of mothers as well as care of infants and children[2].

METHODOLOGY APPLIED

The present study had been made to know about the child healthcare practices among the Santal and the Kora of Jhargram Sub-division, district- Midnapore, West Bengal. Some important factors like place of delivery, immunization and Anganwadi facilities of child healthcare had been studied to explore the above discussed issues.

As the present study was done exclusively among the tribals, so the Jhargram Sub-division of West Midnapore district was chosen for its tribal dominating character. Three types of villages were selected considering the scope and objectives of the proposed study. For covering the required population two villages were taken under each type. For pursuing specific objectives the villages were selected on the basis of 'type'. The 'type' was done on different criteria viz. distance from the sub-divisional town (Jhargram), as well as sub-divisional hospital, communication, modern health facilities surrounding the villages[3].

Type One: It was longest distance from the said urban centre and health facilities were negligible in comparison with the other two 'types'. There was no primary health centres/sub-centres in a short distance. Very ill equipped communication to any of the urban/semi urban places. The absence of quack and private doctors in a shortest distance was another additional criterion. Two tribal villages viz. Agaya and Barashyamnagar of Belatikri Gram Panchayat were chosen under this type. The Santal and the Kora was the inhabitant of those villages.

Type Two: Distance from the urban centre/ hospital was longer than 'type' three but shorter than 'type' one. Further, there was a rural hospital, some private practitioner, and quack in a short distance. Village Shalukdoba and Valuka under Binpore-I Panchayat were situated near by the Binpore Rural Hospital and considered suitable for the present study. Those villages were also well communicated to the sub-divisional hospital (Jhargram). These two villages were exclusively Santal villages.

Type Three: Villages were nearest to the urban centre (Jhargram) and consisted with the modern facilities viz. hospital, nursing home, private practitioner, diagnostic centres etc. But the communication was not so good like 'type' two. Two Santal villages viz. Laredi and Kutuageria of Radhanagar Gram Panchayat were chosen under 'type' three.

RESULTS

Place of Delivery: The process of childcare initially started through the conception of baby, so place of delivery or where the birth will be taken place is one of the crucial factors for child protection. Among the rural and tribal people of India and in West Bengal there is a trend for home birth and it is very much intensive among the tribals. So in this section there will be a discussion about childbirth place in the studied villages. The changing scenario will be also discussed in the present context. Table: 1 will represent the quantitative data taking all the living population and touching all the villages in different category.

Although institutional delivery is being emphasised by the government[4] but above 90 percent home birth was recorded in case of 'type'-one (farthest from the sub-divisional town and no modern health facilities in close proximity) villages and in the context of two tribes (the Santal and the Kora) of the village Agaya. According to the villagers home birth was safe and most wanted procedure of birth because there was no risk in such type of birth procedure. There was a striking role of *Dai* (mid-wife) at the time of birth. Although, some educated and economically well-to-do families were not preferred such condition of delivery place or procedure. They opined that a safe birth could not be possible inside home. In case of an emergency there was no way to take the patient to Jhargram Sub-divisional hospital or Binpur Rural Hospital. Further, it is very troublesome in rainy season. Some studied families preferred continuous checking and delivery at hospital. After number of checking one can get the proper delivery date and have sufficient time for taking admission in that hospital. But the said categories were very few in numbers and only few cases of hospital birth were recorded. The Kora of Agaya was very much equipped with home birth. The case (2.5%) of the Kora hospital birth Table: 1 was only the cases who had to go to hospital in emergency. So there was a case of birth occurred on the way to hospital.

People of Barashyamnagar was also preferred home birth for avoiding the journey to hospital, they told that it was not easy for a pregnant mother to visit hospital in regular interval because the way to Jhargram was tremendous for such women. From that village also, reported hospital birth cases were only the emergency out-come of circumstances. Some rich families (very few, 2.35%) preferred nursing home for only safe place of birth because one can get proper attention only from there. Those families were also not satisfied about the treatment of Jhargram hospital. According to them hospital treatment was not up to the mark and they could not give proper nursing to mother and new-born babies. Furthermore, in some extent over all expenditure in the paying bed of the hospital is same or higher than nursing home.

A quite different data was accumulated from 'type'-two (faraway from the sub-divisional town but well communicated and adjacent to the rural hospital) villages (Shalukadoba and Valuka). 50 percent

male and 40.13 percent of female birth occurred at Binpur Rural Hospital (Table 1). Binpur Rural hospital was a Block Primary Health Centre; in those days there were specific beds for maternity and a separate labour room. Adjacent sub-centre's workers campaigning mobilised the villagers for hospital birth. So during last 15 to 10 years there was a trend of hospital birth. Most of the villagers of Shalukdoba and Valuka influenced by the said worker and decided for the institutional delivery. From the beginning day of pregnancy they were under the continuous treatment of hospital and totally aware about the day of delivery. But at the time of present work people told a different fact. During those days due to construction of new building there was some problem about hospital infrastructure. After the delivery pregnant women had to leave the hospital before completing their treatment and caesarian cases were not done inside there. So patients with critical condition had to go to Jhargram hospital for their delivery. Economically sound families preferred to go to nursing home for providing a complete treatment to their patient. But there was no home birth in those days the quantity (Table 1) for Shalukdoba and for Valuka was only a case (48.19 and 56.68) before 10 to 15 years. The said studied people hoped that after completing the construction work they should not face any problem regarding delivery at Binpur Rural Hospital. Whenever asked about home birth they answered it was not possible because there was not a single trained *dai* in surroundings, so they had to depend upon only rural hospital or Jhargram hospital for delivery.

Among the 'type'-three (nearer to the sub-divisional town and modern health facilities in close proximity) villages surprising only 6.85 percent male birth and 6.67 percent female birth occurred in Jhargram hospital (Table1). As it reported villagers of those villages preferred for home birth and there were various reasons behind that.

1) It was a great trouble to manage free bed and many of the villagers were not able to pay the fees of paying bed and its allied expanses for treatment.

2) Those villages were very near to Jhargram but not properly communicable during night and particularly in rainy days.

3) Some time it was impossible for a pregnant mother to visit Jhargram hospital for continuous checkup. For that reason many of them were not able to make hospital card for pregnancy.

In spite of the above problems some educated villagers liked to visit Jhargram hospital for said purpose. Because they realised that due to home birth various types of complications could be arised at any moment. Due to scarcity of trained *dai*, family members and neighbors were engaged in child birth, thus accident may occur in any case. But they were also very anxious about the category of treatment and nursing inside the hospital and according to them that were not up to the mark.

There was only one mid-wife surrounding the villages of Agaya and Barashyamnagar. Purgi Saren sixty years aged Santal widow woman residing in the village Amlajora. One thing should be added here that the 'Karanja canal' is situated in between Amlajora and 'type'-one villages. Purgi had three sons but they were separated with their wives. So Purgi had to live alone but with same compound of her son's house. There was only 15 kathas of land in the name of her.

The procedure of child-birth was acquired through her mother-in-law. According to her a new blade, thread, paisa and hot water are the main requirements for the whole process. The concerned house supplies all the materials at the time of delivery. Blade is necessary for cutting the umbilical cord and paisa is used as per the traditional norms of Santals. She buries the umbilical cord after the delivery. The baby is washed by the hot water.

She added that there is no prior intimation or relation between the patient parties with her. At the time of delivery she is called by them and have to go with them in any moment it may be night or may be severe rainy day. The patient party had to give Rs. 50 to 60 per cases. The critical cases referred to the hospital but less critical were handled by her. For example she performed forceps delivery through hands. She had to tackle one or two cases in each day covering the one section of Belatikri Panchayat to the area of Dahijuri. Only tribal patients are handled by her, because Hindu or Muslims cannot allow a tribal woman for this purpose. The Kora of Agaya also benefited by that *dai*. According to traditional norm mid-wife or *dai* is also called as Ma (mother). Further, she is the only possessor of giving the name of baby. In that occasion a Sari is offered to her as the auspicious sign.

Polio and Pulse Polio vaccination: Following WHO, Department of Health and Family Welfare, Government of West Bengal prescribes different categories of vaccines for immunization. During the period of the study and considering the situation researcher felt need to give emphasis upon the data about the polio-taker. In those days special drives were going on Pulse Polio vaccines. Government of India and specifically government of West Bengal gave priority on polio-dose. That was an action taken after failure the drive of eradication of polio by 2000 A.D. Table 2 represent number and percentage of polio taker from the studied villages and through Table 3 it can be noticed upon the result of pulse polio drive. All the quantitative data on Table 2 and Table 3 were given on the basis of field survey among the studied villagers. That was just the answers of the villagers in due course. An age group 0-24 years was considered in this purpose because prior to that period there was no such instance of polio taker among the villagers.

It is shown that 59.34 percent male and 65.43 percent female polio taker were recorded from 'type'-one (farthest from the sub-divisional town and no modern health facilities in close proximity) villages. The percentage of female polio taker was higher than the male in the context of both the tribes of village Agaya. Many of the villagers had a concept that side affects can be emerged after taking of polio and even death can be occurred. So they avoid giving polio to their sons. There was another concept that females were more fatigue than male so the former need the dose much than the later or it can attack a girl much more and she can be handicapped and her marriage can be affected. In general all the villagers of 'type'-one villages were facing problems regarding polio taking. They had to go Rashikpur sub-centre for regular polio dose and that centre was very far from the villages. Villagers had to cross two canals for reaching there and that was impossible during rainy days.

Three (3) male and two (2) female children of those villages were not given the last pulse polio dose. Among them 1 male and

1 female child was out of station along with their parents and other was very ill and their parents were not able to take them to the polio centre. During those days all the 'type'-one villagers had grown a concept that pulse polio was an essential vaccine and their babies could not survive properly if they had not taken the dose. But many of them did not know that they could get a pulse polio dose wherever they were outside from their original habitant. Another crucial point should be mentioned that pulse polio was given in the Anganwadi centres. The children of Agaya were under the Anganwadi of Bansber that was far (3-4 km.) from Agaya and there was a canal between the two said villages. Children of Barashyamnagar were under the Anganwadi centre of Chotoshyamnagar and those two villages were adjacent. So parents of Agaya were facing problem to reach Bansber and it was terrible during rainy days.

Among the 'type'-two (Shalukdoba and Valuka) villages 65.12 percent males and 59.74 percent females were recorded as polio taker. After introducing polio vaccine people of said villages could get their dose from adjacent Binpur Block PHC (now converted to rural hospital). Villagers confessed that in past people had very scanty idea about polio vaccine. Not only that they were very suspicious about the consequence but in recent past people knew about it and its necessity for safety of human life.

But being adjacent villages of rural hospital yet the percentage of pulse polio taker was not up to the mark (Table 3). Pulse polio was given in the Rural Hospital and Anganwadi centre of Shalukdoba. But last drive of pulse polio was not giving a satisfactory result. Both the villagers had grown a concept that if a baby took regular polio dose then there was no need to give pulse polio dose. In that way some parents were continuously not winning their babies for pulse polio dose. Many villagers also accused the Anganwadi teacher or worker and even Multipurpose Health Worker for not advicing the exact idea or concepts about pulse polio. They also told that being a hospital adjacent villager the people were not aware about the exact date of pulse polio drive.

In case of male polio taker the percentage was same (around 65%) among 'type'-two (faraway from the sub-divisional town but well communicated and adjacent to the rural hospital) and 'type'-three (nearer to the sub-divisional town and modern health facilities in close proximity) villages but female percentage was lower (56.04%) in case of later. In the past the people of Laredi and Kutusgeria ('type'-three) had to go Ramchandrapur sub-centre for their polio dose but after that they were under Bedkundi sub-centre and as reported the former centre was so crowded for over population and the later was too far. So both the villagers had to face problem for their children's dose of polio. In many cases parents could not manage to bring the two babies simultaneously and preference would be given for the male babies. Further, percentage of the female polio taker (51.67 and 64.52) was low than the male (63.27 and 68.75) in the context of both villages. In some cases they also tried to visit Jhargram hospital for the said purpose but it was also not compatible in all the seasons.

During the last drive of Pulse Polio the children (up to 5 years) of village Laredi were reported successful. But there were three (3) children (1 male and 2 female) missed the said dose. All of them were out of station. They also did not take the dose

in the out-station. The concerned parents argued that they were not aware about Pulse Polio dose and they also did not know that it could be given in out station also. The villagers of 'type'-three villages could get Pulse Polio dose for their children at the Anganwadi centre of Laredi.

Anganwadi Centre: Integrated Child Development Services is one of the conspicuous promotive development programme of Central Government. The programme was launched in 1975 seeking to provide an integrated package of services in a convergent manner for the holistic development of the child. The scheme aims to provide the nutritional and health status of vulnerable group including pre-school children pregnant women and nursing mother through providing a package of services including supply of nutrition, pre-school education, immunization, health check-up, referral services nutrition and health education. In addition the scheme envisages effective coverage of inter sectoral services in the anganwadi centers. Under this project there are Anganwadi centres for giving health protection for the children up to 5 years and pregnant mothers. The purpose of the centre is to provide nutritional feeding for those persons along with basic education (pre-primary) for the children of 3-5 age-groups. Each centre comprises with two staff, one teacher and one helper. Teacher is responsible for giving education along with primary medical aids whenever it's required. A vital point is to be mentioned in this context that a medicine kit along with instruction book is given to the teacher, which covers the preliminary treatment of minor ailments. Helper is mainly for conducting the nutritional feeding programme. There is an instruction in this regard that cooked food must be supplied to the children and mother. Cooking materials and medicine kit are supplied to each centre after a periodic interval. The centre's workers are also responsible for providing information to the villagers about the dates of or vaccination and pulse polio for the children and pregnant mothers. There is a government rule that a child can not get admission to the primary school without the certificate issued by an Anganwadi centre. Anganwadi staff has to keep a continuous touch with the multipurpose worker of the sub-centre and doctors and staff of Primary Health Centre (PHC). A joint programme of anganwadi and sub-centres is conducted for giving regular vaccines to the children. It is a three tire system Anganwadi at first tier, Health sub-centre at second and PHC at third. At the time of critical diseases or emergency the teacher of Anganwadi centre is instructed to consult nearby PHC doctor immediately[5].

In this context six studied villages were covered by four Anganwadi Centres. All the the centers are started around first half of 90's. Name of those centres along with the villages are given below (Table : A).

The Anganwadi Centre of Bansber was approximately 4 km. away from the distant village Agaya ('type'-one). Following the government prescribed rule there were two persons in the centre, teacher (1) helper (1). Apart from Agaya that centre was also covering the children (up to 5 years) of village Bansber. Parents of Agaya were very much reluctant about regular sending of their children to Bansber. The main reasons behind that there was a canal in between them. Further, it was not possible for children to cross it alone and the parents could not manage time to company with

Table: A
Studied Anganwadi Centres

Type	Villages	Anganwadi Centres
ONE	Agaya	Bansber
	Barashyamnagar	Chotoshyamnagar
TWO	Shalukdoba	Shalukdoba
	Valuka	
THREE	Laredi	Laredi
	Kutusgeria	

Source: Field Data; 2004-2005

them because the timings of that center were from 7:00 am to 9:00 am. During those hours parent were involved with their household work and agriculture. Parents also argued that feeding is one of the main attractions of the centre, but food supply was very irregular and uncertain, so after walking such a distance and wasting time children might not have their meal. Hence, they did not feel any interest to go there. Many of the parents were also aware that their children could not get admission in the primary school without the certificate issued by Anganwadi Centre. So, they tried to send there at least one or two days in a week. Parents who did not bother about their children's education were reluctant to send their kids. The above fact can be noticed quantitatively in the Table: 4. The percentage of Anganwadi attainder (or previously attended) was very low among the Kora (male 20% and female 33.33%) of the said village.

Another Anganwadi Centre was in the village Chotoshyamnagar. Primary school of that village was used as the centre because there was no separate place for the said purpose. Although, the timings of the centre was from 7:00 to 10:00 am. but during the visit of researcher (October 2002) there were very scanty children at 8:45 am[6]. When asked to the teacher she answered in those days there was no supply of food materials, so bulk of the children were not present for the said reason. The children of Barashyamnagar ('type'-one) were under that centre. Although village Chotoshyamnagar was adjacent to Barashyamnagar but all the parents did not feel any interest about the centre. According to them that centre was dry (with out food) from many days, so the children were not interested to go there. But many of the parents were also conscious to send their children in the day of pulse polio and they also realised that a boy/girl could keep touch to the centre through attending it two to three days in a week and there was no pressure for regular attendance. There was an added opinion that children had to return home frequently due to absent of both teacher and helper.

The Chapamani Primary School at Shalukdoba was used as Anganwadi centre. The children of rural hospital adjacent villages Shalukdoba and Valuka ('type'-two) were under the centre. During the field day (November 2002) that was another dry (without food) centre. But there were number of children. Teacher told that due to *Durga Puja* (worship) there was some trouble of food supply but she hoped that would be regular within a few days. Parents were very much aware about the activities of Anganwadi and as reported their children were also benefited by the medicines of Anganwadi medicinal kit. There were another problem in those villages, some parent were not ready to send their kids to the centre as that was adjacent to *nicher para* of Shalukdoba. Due to internal clash and faction the relation between the people of *nicher para* with some families of *mjher para*, *uppor para* and village Valuka was not good during those days. So, the children of that sector were deprived from availing the benefits of Anganwadi.

The fourth studied Anganwadi Canter was located in the village Laredi. It was driven inside a village home. The children of 'type'-three (adjacent to the sub-divisional town) villages (Laredi and Kutusgeria) were under that centre. The teacher and helper were not belonging to the tribal community. There was no such problem in the centre; availability of food materials was noticed. Those workers informed the villagers about pulse polio date and routine immunization date. According to them they were very regular and tried to attend the centre in each working day. But some families of both the villages (Laredi and Kutusgeria) were suspicious about their activities and not felt interest to send their kids to the centre. As Table: 4 shows and supportive qualitative data accumulated it can be realised that people ('type'-three villages) participation and interest about the centre was not remarkable (36.11% male and 46.67% female). Whenever asked about the consequences many of the villagers answered that Anganwadi workers were very much repulsive. They attend the centre for 2 to 3 days in a week instead of 6 days. Necessary trainings were not given to the children. Only food was distributed but food quality was not up to the mark. In some cases there was no need to attend the centre because required food was supplied to home. Many of the villagers were not also aware about the medicinal kit of Anganwadi Centre.

It is already stated that the activities of Anganwadi also covered to extend benefits to the pregnant mother. The workers have to notice about the pregnancy cases and their dates along with the delivery dates. Nutritional feeding programme is also covered the pregnant mother up to 6 month after delivery. But among the studied villages there was no such instance of pregnant mother enjoying the said facilities. In case of 'type'-one (Agaya and Barashyamnagar) villages many of the villagers had no idea about the said facilities. In very rare cases they were informed about the immunization but not aware where it could be availed. There was not a single instance of pregnant mother enjoying nutritional feeding programme. In the context of 'type'-two (Shalukdoba and Valuka) pregnant mother could get their immunization vaccines in the Rural Hospital but did not aware that nutritional feeding of Anganwadi also covered the pregnant mothers. Among 'type'-three the centre worker told that they distributed the food to

the home of pregnant mothers but villagers opined it could be occurred with in close houses surrounding the place of Anganwadi centre. But it was not supplied to all the needy houses of Laredi and houses of Kutusgeria. Immunization dates were informed in some cases. But the actual number of immunization to the call was not at all verified after the scheduled date.

DISCUSSION AND CONCLUSION

Despite of government against campaigning the tribals of 'type'-one (distant from sub-divisional town and hospital, no modern health facilities in close proximity) and 'type'-three (adjacent to sub-divisional town and hospital but not properly well communicated) villages were very much accustomed with home-birth. In case of the former the ill communication and bad road construction to the health institutions along with poor economic background imposed them to depend upon the home delivery. They were also keeping touch with a traditional *dai* (traditional mid-wife) for the purpose. But some well-to-do families opined that a safe birth could not be occurred inside home. As there was no other option so helpless tribals had to depend upon the *dai* for pursuing the home-birth. Poor economic condition was also the main reason for home birth in case of 'type'-three villagers. Tribals of those villages were not able to manage a free bed of sub-divisional hospital for its complicated and political oriented procedure and they were not also in a position to bear the charges of paying bed and its allied expenses for treatment. Communication to Jhargram hospital was not also up to the mark for the said villagers ('type'-three) and it was so adverse during rainy days and night. Tribals of rural hospital adjacent villages ('type'-two) were used to go to that (rural) hospital for the purpose, although the said hospital was not totally equipped for all categories of delivery. For cesarean cases tribals had to go to Jhargram hospital although communication was better in that context. Further, the rural hospital had an ambulance for smooth referral procedure.

More or less all the studied tribals had grown a concept about polio vaccine and pulse polio dose. In due course they realised the necessity of it and also understood their babies could not be able to lead a normal and safe life without the said vaccine. But still there is some lacking about the people's proper perception and government's prompt and valuable actions. It is already stated that 'type'-one (distant villages with no modern medical facilities) villagers were facing problems regarding the polio dose, as the polio-distributing centre (the sub-centre) was located very far from those villages. For taking the polio dose parents along with their babies had to cross two canals for reaching the centre. And obviously it was impossible for them during monsoon time. There was no such problem for the rural hospital adjacent ('type'-two) villagers. But too far distance of Bedkundi sub-centre was a constraint for near to urban centre ('type'-three) villagers. Although road is not so much hurdle as 'type'-one but parents were facing trouble while taking two to three babies simultaneously to the sub-centre. Along with the said issues various stated cultural concepts found which leads to a variation between male and female polio taker. Many of them have no definite reason and it can be solved through proper counseling.

In the context of pulse polio there was also some lacking about peoples understanding and government campaigning. For instance many of the villagers did not aware that they

could get a pulse polio dose whenever they were out of station. Not only that some villagers also grew a concept that if a baby (under 5years) took regular polio dose then there was no need to take pulse polio dose. Such confusions can be eradicated through proper campaigning by the Anganwadi teacher and multipurpose health worker but their reluctance about door-to-door survey was unable to give a perfect result in case of government's pulse polio drive. But studied tribals interest and raising awareness about the polio dose and pulse polio programme established that they realised the results of taking or not taking of such vaccines.

Government funded ICDS programme flourished all the studied villages but not all the studied villagers and tribes. During the study various reasons were identified for not achieving or availing the facilities provided by ICDS. The first and foremost reason was irregular food supply. Although the primary target of the programme is to provide cooked food to the children (below 5 years). But out of four studied centres three were dry (without food) during the studied period. So obviously the children were not felt any interest to go to the centre. Because their parents knew that cooked food was the main attraction of the centre. Adverse road condition and natural barrier to the centre was another cause for parent's reluctance about the centre. The timings of the centre was not suitable for the parents and they could not mange to give company with their kids; for that reason many small kids were deprived to go to the centre.

Studied Kora children were facing the said problem in an acute stage because they had to go with their parents to another place for long time as their parents involved as agricultural labour in out station for a particular period of the year. So during those days the said children were devoid of availing the ICDS facilities. Further, for such gaps ultimately they felt no urge to go Anganwadi centre and discontinued it forever.

It can be concluded that after long years of such an important programme it was not implied in a proper manner to the prime target group of population. But the loop-wholes can be covered through prominent supervision and remodeling of the entire procedures. Target groups can be aware through the trained worker. Further it is possible when the required educational tribal teachers are appointed for the tribal areas or the teacher should be sympathetic about their culture, educational and economic status. Same cultural milieu of teacher, worker and the villagers can solve the day-to-day problem of a center. The center-village distance and its physical barriers should be considered keeping in mind that the beneficiaries are the children below five years and the pregnant mothers. A trained group can give the idea to the people about the aim and objectives of the Anganwadi centre.

Hence the three crucial factors of child healthcare were not up to the mark in the present study. The issue is more vulnerable whenever it is observed among the tribal population. Although their age old tradition of home birth have some deep sense of cultural value but it is not also providing any sustainable health aid of present days new born babies. On the contrary the government prescribed institutional birth is not accessible to them due to ill equipped infrastructure and hazardous communication. Therefore the initial stage of childcare is ultimately faced both way of challenge due to changing scenario of

ideological transformation and halfhearted support by the government initiative programmes. Although government initiative regarding the campaigning of vaccination touched the tribals but in this context also there was lacking in terms of proper infrastructure and smooth communication towards the health institution; sometime door to door intervention by the health workers were not possible due to the same communication problem. Same sort of misunderstanding is also responsible for fewer targets achieved by the population. The indispensable childcare project ICDS was also not in full swing due irregularities in the food supply. The understanding and management problem of both the giver and taker lies constraints over here. So government initiated three factors ultimately did not provide the required facilities to the tribal children which ultimately affect the health status of the population.

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Table: 1

Place of Delivery among the Villagers

Village Type	Villages	Tribe	Male					Female			
			Home	RH	Hospital	BWH	Total	Home	RH	Hospital	NH
ONE	Agaya	Santal	55 (94.82)	-	03 (5.17)	-	58 (100.0)	54 (93.1)	-	02 (3.44)	02 (3.4
		Kora	37 (92.5)	-	02 (5.00)	01 (2.5)	40 (100.0)	35 (94.59)	-	02 (5.41)	-
	Total		92 (93.88)	-	05 (5.1)	01 (1.02)	98 (100.0)	89 (93.68)	-	04 (4.21)	02 (2.1
	Barashyamnagar	Santal	81 (96.42)	-	02 (2.38)	01 (1.19)	84 (100.0)	83 (97.64)	-	-	02 (2.3
TOTAL			173 (95.05)	-	07 (3.85)	02 (1.1)	182 (100.0)	172 (95.56)	-	04 (2.22)	04 (2.2
TWO	Shalukdoba	Santal	63 (47.72)	68 51.51	01 (0.75)	-	132 (100.0)	66 (53.68)	56 (45.52)	01 (0.81)	-
	Valuka	Santal	17 (50.00)	15 44.11	02 (5.88)	-	34 (100.0)	23 (67.65)	07 (20.58)	01 (2.94)	03 (8.8
TOTAL			80 (48.19)	83 50.00	03 (1.81)	-	166 (100.0)	89 (56.68)	63 (40.13)	02 (1.27)	03 (1.9
THREE	Laredi	Santal	93 (93.94)	-	06 (6.06)	-	99 (100.0)	105 (97.22)	-	03 (2.78)	-
	Kutusgeria	Santal	83 (92.22)	-	07 (7.78)	-	90 (100.0)	63 (87.5)	-	09 (12.5)	-
TOTAL			176 (93.12)	-	13 (6.88)	-	189 (100.0)	168 (93.33)	-	12 (6.67)	-
GRAND TOTAL			429 (79.89)	83 15.46	23 (4.28)	02 (0.37)	537 (100.0)	429 (82.98)	63 (12.19)	18 (3.48)	07 (1.3

Source: Field work; 2004-2005
RH- Rural Hospital, NH- Nursing Home, BWH- Birth Occurred on the way to hospital.
Figures in parenthesis indicate percentages

Table: 2

Taking of Polio (age group 0-24 yrs.) *

Village Type	Villages	Tribe	Male			Female	
			YES	NO	TOTAL	YES	NO
ONE	Agaya	Santal	19 (63.33)	11 (36.67)	30 (100.00)	17 (73.91)	06 (26.09)
		Kora	11 (52.38)	10 (47.62)	21 (100.00)	13 (81.25)	03 (18.75)
	Total		30 (58.82)	21 (41.18)	51 (100.00)	30 (76.92)	09 (23.08)
	Barashyamnagar	Santal	24 (60.00)	16 (40.00)	40 (100.00)	23 (54.76)	19 (45.24)
T O T A L			54 (59.34)	37 (40.66)	91 (100.00)	53 (65.43)	28 (34.57)
TWO	Shalukdoba	Santal	48 (68.57)	22 (31.42)	70 (100.00)	39 (61.9)	24 (38.1)
	Valuka	Santal	08 (50.00)	08 (50.00)	16 (100.00)	07 (50.00)	07 (50.00)
T O T A L			56 (65.12)	30 (34.88)	86 (100.00)	46 (59.74)	31 (40.26)
THREE	Laredi	Santal	31 (63.27)	18 (36.73)	49 (100.00)	31 (51.67)	29 (48.33)
	Kutusgeria	Santal	33 (68.75)	15 (31.25)	48 (100.00)	20 (64.52)	11 (35.48)
T O T A L			64 (65.98)	33 (34.02)	97 (100.00)	51 (56.04)	40 (43.96)
GRAND TOTAL			174 (63.5)	100 (36.5)	274 (100.00)	150 (60.24)	99 (39.76)

Source: Field work; 2004-2005

* Above 24 years of age there was not any polio vaccinated person

Figures in parenthesis indicate percentages

Table: 3

Pulse Polio (0-5 yrs.)

Village Type	Villages	Tribe	Male			Female		
			YES	NO	TOTAL	YES	NO	
ONE	Agaya	Santal	05 (83.33)	01 (16.66)	06 (100.00)	01 (50.00)	01 (50.00)	
		Kora	02 (100.00)	-	02 (100.00)	02 (100.00)	-	
	Total		07 (87.5)	01 (12.5)	08 (100.00)	03 (75.00)	01 (25.00)	
	Barashyamnagar	Santal	08 (80.00)	02 (20.00)	10 (100.00)	06 (85.71)	01 (14.29)	
T O T A L			15 (83.33)	03 (16.67)	18 (100.00)	09 (81.81)	02 (18.18)	
TWO	Shalukdoba	Santal	14 (73.68)	05 (26.32)	19 (100.00)	09 (81.81)	02 (18.18)	
	Valuka	Santal	01 (100.00)	-	01 (100.00)	02 (100.00)	-	
T O T A L			15 (75.00)	05 (25.00)	20 (100.00)	11 (84.62)	02 (15.38)	
THREE	Laredi	Santal	11 (100.00)	-	11 (100.00)	11 (100.00)	-	
	Kutusgeria	Santal	13 (92.86)	01 (7.14)	14 (100.00)	07 (77.78)	02 (22.22)	
T O T A L			24 (96.00)	01 (4.00)	25 (100.00)	18 (90.00)	02 (10.00)	
GRAND TOTAL			54 (85.71)	09 (14.29)	63 (100.00)	38 (86.36)	06 (13.64)	

Source: Field work; 2004-2005

Figures in parenthesis indicate percentages

Table: 4

Attending/Attended Anganwadi Centers(0-9*yrs. age groups)

Village Type	Villages	Tribe	Male				Female		
			YES	NO	NEW BORN	TOTAL	YES	NO	NEW BOR
ONE	Agaya	Santal	10 (71.43)	01 (7.14)	03 (21.43)	14 (100.00)	04 (57.14)	03 (42.86)	-
		Kora	01 (20.00)	04 (80.00)	-	05 (100.00)	03 (33.33)	06 (66.67	-
	Total		11 (57.89)	05 (26.32)	03 (15.79)	19 (100.00)	07 (43.75)	09 (56.25	-
	Barashyamnagar	Santal	13 (65.00)	04 (20.00)	03 (15.00)	20 (100.00)	10 (66.67)	03 (20.00	02 (13.3
T O T A L			24 (61.54)	09 (23.08)	06 (15.38)	39 (100.00)	17 (54.84)	12 (38.71)	02 (6.4
TWO	Shalukdoba	Santal	26 (74.29)	07 (20.00)	02 (5.71)	35 (100.00)	24 (85.71)	02 (7.14)	02 (7.1
	Valuka	Santal	04 (100.00)	-	-	04 (100.00)	03 (50.00)	03 (50.00)	-
T O T A L			30 (76.92)	07 (17.95)	02 (5.13)	39 (100.00)	27 (79.41)	05 (14.71)	02 (5.8
THREE	Laredi	Santal	06 (42.86)	08 (57.14)	-	14 (100.00)	10 (58.82)	07 (41.18)	-
	Kutusgeria	Santal	07 (31.18)	14 (63.64)	01 (4.55)	22 (100.00)	04 (30.77)	09 (69.23)	-
T O T A L			13 (36.11)	22 (61.11)	01 (2.78)	36 (100.00)	14 (46.67)	16 (53.33)	-
GRAND TOTAL			67 (58.77)	38 (33.33)	09 (7.89)	114 (100.00)	58 (61.05)	33 (34.74)	04 (4.2

Source: Field work; 2004-2005

New Born: 0-7 month. * Concerned centres started before nine years(approx.) Figures in parenthesis indicate percentages

A COMPARATIVE STUDY ON PHYSIQUE AND PERSONALITY AMONG TRIBAL AND NON-TRIBAL BOYS PLAYER OF CHHATTISGARH STATE

C.D.Agashe*, A.Y. Karkare**

Abstract **:** *Physique is the basis of human existence; it is the plinth of personality. A good personality must have a good physique, good appearance, good bearing, good health, etc. The purpose of the present study was to compared physique and personality of tribal and non-tribal boy's player.150 tribal boys player (avg. age 15.53) and 150 non tribal boys player (avg.age 15.26) selected from Chhattisgarh state. To obtained somatotype (physique) Heath carter somatotyping method (1967) was used. To find out personality of players Hindi version of eysenck personality inventory prepared by Helode (1985) was administered to the entire subject. While both the groups compared on somatotyping I.e.; endomorph, mesomorph and ectomorph body type result shown that in endomorphy body type non tribal boys player having more fat compared to tribal boys player, on the mesomorphy body type, again non tribal boys player found superior while compared to tribal boys player. When comparison made on ectomorphic body type between tribal and non-tribal boys player, result found that there is no difference between both groups. While both the groups were compared on the basis of personality result shown that non-tribal boys player were found extrovert compared to tribal boys player and tribal players were more neurotic compared to non tribal players.*

INTRODUCTION

Physique is the basis of human existence; it is the plinth of personality. A good personality must have a good physique, good appearance, good bearing, good health, etc. A healthy body is a blessing while a weak one a curse. The layman's assessment of personality veers round the body structure, the physical appearance or have an individual looks like from outside. Erroneous though it might be, an individual with good musculature has an edge over others at least in body beauty. A sound mind exists only in sound body. Sheldon specifies that all individuals can be classified into three types of physique i.e. Endomorph's, Mesomorph's and Ectomorph's.[1] Each of these three categories have their respective traits associated with corresponding temperamental tendencies which in the long run, determine one's behaviour - the mainstay of personality in action. Endomorphy is related to Vesceortonia i.e. love of comfort, slow action, relaxation, love of eating, sociability, complacency, affectionateness, etc. Mesomorphy is related to Somatotonia i.e. assertiveness, love for physical adventure, vigorous energeticness, need for exercise, love of dominance, love for taking risk and chance, directness of manner, courage, general noisiness, need for action when in trouble; etc. Ectomorphy is related to Cerebrotonia i.e. restraint in posture and movement, rapid reaction, over tension,

*Reader,S.O.S.in Physical Education Pt. Ravishankar University, Raipur,(C.G.)
**Reader, M.W.Sharirik Shikshan Mahavidyalaya, Kamptee, Nagpur,(M.S.)

anxiety, secretiveness, inhibition of action, introvertedness in thought, need for loneliness, etc.

A somatotype is a description of the present morphological confirmation. It is expressed in a three numeral rating, consisting of three sequential numerals, always recorded in the same order. Each numeral represents evaluation of one of the three primary components of physique which describe individual variations in human morphology and composition. It is expressed in a three numeral rating, consisting of three sequential numerals, always recorded in the same order. Each numeral represents evaluation of one of the three primary components of physique which describe individual variations in human morphology and composition.

Endomorphy : It refers to relative fatness in individual physiques; it also refers to relative leanness. That is, the first component ratings are evaluation of degrees of fatness which lie on a continuum from the lowest recorded values to the highest recorded values.

Mesomorphy : It refers to relative musculoskeletal development per unit of height. The second component ratings are evaluations of musculo-skeletal development which lie on a continuum from lowest to highest degrees recorded. The second component can be thought as Lean Body Mass relative to height. The term "Lean Body Mass" refers to the body without fat component.

Ectomorphy : It refers to relative linearity of individual physiques. The third component ratings are based largely, but not entirely on height/^{3}**v**weight ratios. Height/^{3v}weight ratios and third component ratings are closely related, so that at the low ends of their distributions both connote relative shortness of the several body segments, and the high ends connote elongation or linearity of the several body segments. Ratings evaluate the form and degree of longitudinal distribution of the first and second components.

In competitive sports every factor has its own bearing on the performance of the player. Besides endurance, training and skill, the physique and gross size of the athlete is a contributing factor towards success. Tanner (1964) studied the physique of different categories of sportsmen participating in the Olympics and stressed the importance of physique in performance. If we look at the somatotype charts presented by Tanner (1964)[2] showing the physiques of different types of sportsmen, it is very easy to distinguish a sporting group from a control one because of two reasons: first the sporting group is distributed more towards mesomorphy and second the somatotypes are more concentrated in a particular area on the somatochart.

Keeping in mind the importance of body size, shape and physique in the performance of sportsmen, various studies have been undertaken by different researchers to study the suitable physiques they are-. Sharma et al (1990) Sillis (1953),Sodhi (1983) Sharma and shukla(1981)[3,4,5,6], but no study has been found regarding tribal and non tribal boys players. Therefore attempt has been made to compare tribal and non-tribal boys players on physique and personality.

MATERIALS AND METHODS

Selection of subjects: For the above mention study 150 tribal boys player (Ave. age 15.53) selected from "krida parisar" of Chhattisgarh state. Tribal samples studying and getting training in "krida parisar" which is run by tribal welfare department of Chhattisgarh state. 150 non tribal boys player (ave. age 15.26) were selected from urban areas of Chhattisgarh state.

Tools: To assess physique Health Carter method (1967) was adopted.[7] For this method 10 anthropometrics measurements were taken from all subjects. Measurements are: Height, weight, triceps skinfold, sub scapular skinfold, suprailiac skinfold, calf skinfold, humerus diameter, femer diameter, biceps girth and calf girth. For the taping personality of all the players Hindi version of junior Eysank's personality inventory prepared by Helode (1985)[8,9] administred to entire subjects. This was three dimensional personality inventory i.e. extraversion-introversion, neuroticism and lie score.

Procedure: To assess physique 10 anthropometric measurement were taken for all subjects. After taken measurement endomorphy, mesomorphy and ectomorphy body types were calculated according to following formula;

Endomorphy = —0.7182 + 0.1451(X) — 0.00068 (X)2 + 0.0000014 (X)3
(Where X is the sum of triceps, sub scapular and supraspinale skinfolds.)

Mesomorphy = 0.858 X HB + .601 X FB + .188 X CAC + 0.161 CCC) — (Height X 0.131) + 4.50

Where HB denotes Humerus biecpicondylar diameter;
FB denotes Femur biecpicondylar diameter
CAC denotes Corrected Arm Circumference);

CCC denotes Corrected Calf Circumference

Ectomorph = HWR X 0.732 — 28.58

Where HWR denotes Height Weight Ratio

After 15 minutes break Eysenk's personality inventory administered to entire subjects and scoring was done according to rule lead down by author.

Statistical Analysis: Standard methods were used for statistical analysis. Mean, Standard Deviation, and 't' test were applied to get the significance of data collected. Pearson's product moment bivariate correlation coefficients were obtained to derive associations between physique and personality dimensions.

RESULTS AND DISCUSSIONS

Table no.1 summarizes the data for tribal and non tribal boys boys player. Result indicates that on endomorphic body type non-tribal boys player have more % fat compare to tribal boys player. The t value is 11.41 that indicate that there is a significant difference at 0.01 levels. While both the group compare on mesomorphy body type once again non tribal players have more muscle mass compare to tribal players. The t value is 5.31 that beyond .01 level. Both the group is equal on ectomorphy body type. t value is 1.40 that means there is no significant difference observed on this body type means tribal and non tribal groups are equal on this point. Result presented in table -1.

Table 1: Comparison on physique between tribal and non tribal sportsperson

	Tribal Boys (150)		Non-Tribal Boys (150)			
	Mean	**SD**	**Mean**	**SD**	**Md**	**t**
Endomorp	1.40	0.38	2.73	1.37	1.32	11.41**
Mesomorphy	2.30	1.08	3.02	1.24	0.71	5.31**
Ectomorph	4.32	1.15	4.10	1.59	0.22	1.40

** .01 level of significance

When comparison made on personality dimension between tribal and non tribal boys player results shows that non tribal boys players are extrovert (m=15.60) compare to tribal boys player (m=12.39). t value is 11.72 that means there is a significant difference beyond .01 level. When both the group was again compare on neuratisim dimension result shows that tribal players are more neuratic (m=9.38) Compare to non-tribal players (m=5.94). t value (8.75) shows that there is a significant difference at .01 level. Last comparison made on lie score that is social desirability; on this point both the group are equal with each other. Result presented in table 2.

To know the relationship between physique and personality correlateion matrix system has been taken into the consideration. Earlier Kretchmer, Sheldon and many more made attempt to know the relationship of physique and psychological make-up. Here relationship between personality dimension and physique has been presented in Table 3.

Result indicates that endomorph body build shows their positive correlation at

Table 2 : Comparison on personality dimension between tribal and non tribal sportsperson

	Tribal Boys (150)		Non-Tribal Boys (150)			
	Mean	**SD**	**Mean**	**SD**	**Md**	**t**
E	12.39	2.49	15.60	2.24	3.21	11.72**
N	9.38	3.60	5.94	3.17	3.44	8.75**
L	6.69	1.86	6.32	2.19	0.36	1.55

** .01 level of significance

significant level with extraversion but there is significant negative relationship with neuroticism. The similar result has been found with mesomorph. Extraversion shows their significant positive relationship with mesomorph and as imagination of investigator mesomorph shows its negative relationship with neuroticism. But ectomorph showing its negative relationship with extraversion and there is no relationship has been found with neuroticism. This findings are found when tribal boys and non-tribal boys physique has been taken into the consideration. (Table - 3)

Table 3: Correlation matrix between personality and physique of tribal and non tribal boys players

	ENDO	MESO	ECTO	E	N
ENDO	1	.4745** (300)	.5382** (300)	.3929** (300)	-.2751 (300)
MESO	.4745** (300)	1	-.7489** (300)	.3132** (300)	-.2345** (300)
ECTO	.5382** (300)	-.7489** (300)	1	-.1963** (300)	.0890 (300)
E	.3929** (300)	.3132** (300)	-.1963** (300)	1	-.3445** (300)
N	-.2751 (300)	-.2345** (300)	.0890 (300)	-.3445** (300)	1

* .05 and ** .01 level of significant

CONCLUSION

Non tribal boys players having more fat % compare to tribal players. Tribal boys player having less muscle mass compare to non tribal boys player. Tribal players were lean and thin compare to non tribal players. Non tribal boys player are extrovert compare to tribal boys player. Tribal players are more neurotic compare to non tribal players. There is relationship between physique and personality dimension of tribal and non tribal boys players. On the basis of results it may conclude that tribal sportspersons are having potentiality to perform well in competitive arena compare to non tribal group. But, due to psychological limitation they are still not performing well in compare to non tribal sportsperson.

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PRIMARY EDUCATION OF SCHEDULED TRIBES CHILDREN IN INDIA- A STATISTICAL NOTE

Rajesh Tailor*, Sandeep Kumar Sharma**, Ritesh Tailor**

Abstract : *Education is an instrument to uplift the socio-economic status of an individual and the society. For a long period a part of society, scheduled tribes and scheduled castes, has been lagging behind the others socially, economically as well as educationally. This paper presents the status of participation of scheduled tribes children at primary stage of school education in India. It also analyses the availability of educational facilities in habitations and villages predominantly inhabited by scheduled tribes. It provides the base for the assessment of the development of educational status of scheduled tribes children at primary stage after commencement of Sarva Shiksha Abhiyan (SSA).*

INTRODUCTION

Article 46 of the Constitution states that, "The State shall promote, with special care, the education and economic interests of the weaker sections of the people, and, in particular of the scheduled castes and scheduled tribes, and shall protect them from social injustice and all forms of social exploitation''. Articles 330, 332, 335, 338 to 342 and the entire Fifth and Sixth Schedules of the Constitution deal with special provisions for implementation of the objectives set forth in Article 46. These provisions need to be fully utilized for the benefit of these weaker sections in our society. Despite aforementioned constitutional provisions, even after 60 year of independence, we are not in position to provide elementary education to all children of age group 6-14 years of the country. Many important programmes like District Primary Education Programme (DPEP), National Programme for Education of Girls at Elementary Level (NPEGEL), Shiksha Karmi Project (SKP) and Srva Shiksha Abhiyan (SSA) have been launched by the government; even then we couldn't achieve our goal of providing free and compulsory education to all children up to age of 14.

Scheduled Tribes in Census 2001

In India tribal predominantly populate the entire North- Eastern states besides the vast tracts of Andhra Pradesh, Bihar, Chattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and West Bengal. Tribes are officially recognized as "Scheduled Tribes" in the Fifth Schedule of the Constitution of India. According to the Census 2001, population of India is 1,02,86,10,328 comprising 51.74 per cent males and 48.26 per cent females. Population of scheduled tribes is 8,43,26,240 that constitutes 8.2 per cent of total population of the country. In comparison to the census 1991, an increase of 22.66 per cent in overall population and 24.45 per cent in scheduled tribes population are recorded in census 2001[1].

*Lecturer in Statistics, DES & DP, NCERT, New Delhi

**Senior Research Fellow, Division of Agricultural Physics, Indian Agricultural Research Institute, Pusa Campus, New Delhi-12. E-mail: sandeep.stats@gmail.com

***Associate Professor, Lokmanya Tilak Mahavidyalaya, Ujjain, M.P.

Table 1: Population as per Census 1991 and 2001

Category	Sex	1991	2001	Growth (in %)
Over All	Male	43,52,16,358	53,21,56,772	22.27
	Female	40,33,67,630	49,64,53,556	23.08
	Total	83,85,83,988	1,02,86,10,328	22.66
Scheduled Tribes	Male	3,43,63,271	4,26,40,829	24.09
	Female	3,33,95,109	4,16,85,411	24.82
	Total	6,77,58,380	8,43,26,240	24.45

Among the states, Lakshdweep has the highest percentage of scheduled tribes, which is 94.51 per cent followed by Mizoram (94.46 per cent), Nagaland (89.15 per cent), Meghalaya (85.94 per cent), Arunachal Pradesh (64.22 per cent) and D & N Haveli (62.24 per cent). States where scheduled tribes population lies between 20-35 per cent are Madhya Pradesh (20.27 per cent), Sikkim (20.60 per cent), Orissa (22.13 per cent), Jharkhand (26.30 per cent), Tripura (31.05 per cent), Chhattisgarh (31.76 per cent) and Manipur (34.20 per cent). According to the census 2001, five states namely, Haryana, Punjab, Chandigarh, Delhi and Pondicherry have no scheduled tribes population[1].

Programmes for Education of Scheduled Tribes

There is a pivotal role of the government in providing education to all children of the country. National policy on education 1986 and its modification 1992 has been a milestone in the field of education. To provide access of education, there was a provision of opening of primary/middle school within a distance of one kilometer from a habitation having population up to 300, which has been reduced to population up to 200. To encourage the participation of SC/ST, government has abolished the tuition fee for them at least up to the upper primary level. In addition to no tuition fee, government has provision of free text books, uniforms, stationery, school bags etc.. Moreover, through 86th constitutional amendment free and compulsory elementary education for all children in the age group of 6-14 years was made a fundamental right. In addition to aforementioned steps, the government also launched many programmes. Some of them are discussed below:

District Primary Education Programme (DPEP) DPEP was meant mainly for disadvantaged groups like girls, SC, ST, OBC, working children, urban deprived children, disabled etc.

National Programme for Education of Girls at Elementary Level (NPEGEL) The Scheme is being implemented in Educationally Backward Blocks (EBBs) where the level of rural female literacy is less than the national average and the gender gap is above the national average, as well as in blocks of districts that have at least 5

per cent SC/ST population and where SC/ST female literacy is below 10 per cent based on census 1991.

Kasturba Gandhi Vidyalaya Under this scheme residential schools are being set up with boarding facilities at elementary level for girls of SC, ST, OBS and Minorities. In this scheme, there is a provision of opening schools in educationally backward blocks where female literacy is below the national average and gender gap in literacy is more than national average.

Mid-Day Meal Scheme It covers all students of primary classes in all government, local body and government-aided schools in the country with the aim to improve enrolment, attendance and retention of children.

Educational Facility in Habitations Predominantly Inhabited by Scheduled Tribes Habitation is a distinct cluster of houses existing in a compact and contiguous manner; with a local name. According to 7th All India School Education Survey,[2] there are 12,09,521 habitations in the country with a population of 77,72,17,623. Of these, 51.55 per cent habitations are served by primary stage within the habitations, which cater 78.17 per cent rural population of the country. Whereas, 85.63 per cent habitations, covering 94.17 per cent population, are served within a distance of one kilometer.

2,42,993 habitations are predominantly inhabited by scheduled tribes (PIST) and 8,32,41,743 people are living in them. Out of total PIST habitations, 47.13 per cent, representing 69.84 per cent of the total population, are served by primary stage of education within them where as 79.27 per cent habitations, representing 89.01 percent population, are served within a distance of one kilometer. Availability of primary stage schooling facility in habitations predominantly inhabited by scheduled tribes according to different population slabs is given in the Table 2.

Table 2 exhibits that habitations with population more than 1000 are about the realization of universal enrolment at primary stage. It is also observed that among habitations having population below 300,

Table 2 : Primary Stage Facility in Habitations Predominantly Inhabited by Scheduled Tribes

Distance		Population Slabs						
		5000 and above	2000-4999	1000-1999	500-999	300-499	Below 300	Total
Within habitation	A	95.08	94.04	91.32	82.11	64.91	30.27	47.13
	B	92.74	94.51	91.75	82.99	65.99	37.66	69.84
Within one km.	A	97.73	97.94	97.28	94.23	87.64	71.91	79.27
	B	94.93	98.10	97.39	94.54	88.04	76.16	89.01
More than one km.	A	2.27	2.06	2.72	5.77	12.36	28.09	20.73
	B	5.07	1.90	2.61	5.46	11.96	23.84	10.99

A: Percentage of habitations Served, B: Percentage of Population Served

28.09 percent habitations, covering 23.84 percent population, are not served upto a distance of one kilometer i.e. primary education facility is available at more than one kilometer. While in the population slab 300-499, 12.36 habitations, catering 11.96 per cent populations, have primary education facility at more than one kilometer.

tribes. Among these, 30.03 per cent villages do not have primary education facility. 19.28 per cent of the total villages, in which 51-75 per cent population is of scheduled tribes, do not have primary education facility. In rural area, where parents hesitate in sending their children to another village for secondary and higher secondary education, it can't be expected from them to send their children for primary and upper primary

Table 3 : Availability of Primary Education Facility in Villages

Population slabs in percentage of ST	Total No. of villages	Villages having facility	Percentage of villages having facility
0	3,26,821	245,356	75.07
1-25	1,30,650	119,219	91.25
26-50	36,812	30,840	83.78
51-75	28,860	23,295	80.72
More than 75	63,843	44,668	69.97
Total	**5,86,986**	**463,378**	**78.94**

Availability of Education Facility in Villages

There are 5,86,986 villages in the country where 72.18 per cent of the total population of the country is living. Of these, 78.94 per cent villages have schooling facility at primary stage within themselves. At the time of 6th survey (1993), there were 5,86,465 village in the country. Of these, only 71.18 per cent villages had this facility. Therefore, in comparison to the 6th survey, primary stage education facility has increased in 7.76 per cent villages[3,2].

Table 3 shows that 21.06 per cent villages are without primary education facility. There are 10.88 per cent villages in which more than 75 per cent population is scheduled

education to another village. Primary education is the base for further elementary and secondary education. So, to bring children towards elementary education, it is important to provide primary education facility to all children in their villages.

Enrolment

Enrolment is one of the important aspects of universalization of primary and elementary education and there is a target of universalization of primary education, by 2007. At primary stage 12,29,15,301 children are enrolled in which 46.82 per cent are girls and 53.18 per cent are boys. Girls' enrolment percentages in rural and urban areas are 46.73 and 47.10 respectively. Among the total enrolment, 1,15,14,829

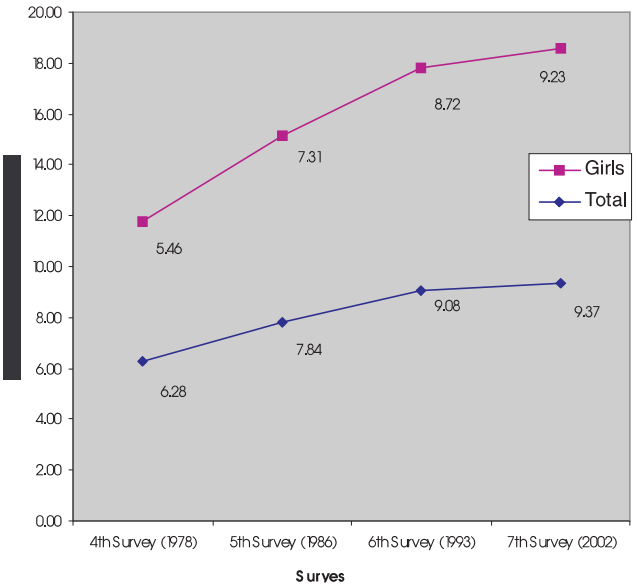
children of scheduled tribes are enrolled at primary stage, which constitutes 9.37 percent of the total enrolment. Percentage of scheduled tribes children against total enrolment of rural area is 11.11 whereas this percentage in urban area is 3.92, which shows that in rural area ST has bigger share as compared to the urban area. Reason is clear, 91.71 per cent of the total population of scheduled tribes is living in rural area. Among total enrolment of scheduled tribes children, 46.12 per cent are girls. In rural and urban areas girls enrolment percentage are 46.02 and 46.96 respectively. This indicates that among the total enrolment of ST, girls are not for behind. According to the 6th All India Educational Survey (1993), 88,09,631 scheduled tribes children were enrolled which was 9.08 per cent of the total enrolment[3].

It has increased up to 9.37 per cent in the 7th AISES. In overall enrolment of scheduled tribes, an increase of 26.68 per cent is recorded. At the time of 6th survey girls enrolment percentage in ST was 41.45 which has gone up to 45.41 per cent. It shows a significant improvement in the girls participation over the decade[4]. (Fig-1).

Table 4: Management and Area-wise Enrolment of Children in Primary Schools

Management	All Communities (%)			Scheduled Tribes (%)		
	Rural	Urban	Total	Rural	Urban	Total
Government	59.13	28.33	53.55	62.47	45.3	61.29
Local Body	31.70	26.13	30.69	31.82	22.31	31.17
Private Aided	3.33	16.66	5.75	3.92	17.95	4.88
Private Unaided	5.83	28.89	10.01	1.79	14.43	2.66

Fig-1 Trend in Share of ST Children in Total Enrolment at Primary Stage



In comparison to the 6th Survey, the overall enrolment of ST girls has gone up by 45.41 per cent in 7th Survey.

Management-wise analysis shows that among the total enrolment of scheduled tribes in primary schools, 92.46 per cent are studying in government school and only 7.54 per cent children are going to private schools. There is a difference in the trend of enrolment in rural and urban areas. In rural area, most of the ST children (94.29 per cent) are enrolled in government in schools whereas only 5.71 per cent are enrolled in private schools. In urban area, a significant percentage (32.38 per cent) of scheduled tribes children are enrolled in private schools.

State-wise analysis shows that Lakshadweep is the state which has maximum ST population that reflects in school enrolment also. Almost all children enrolled at primary stage belong to scheduled tribes. After Lakshdweep, states/union territories which have more than 60 per cent scheduled tribes children enrolled at primary stage are Mizoram, Meghalaya, Nagaland and Dadar & Nagar Haveli. Among children enrolled, Delhi has the highest proportion of girls followed by Sikkim, Chandigarh and Meghalaya. Bihar has the lowest girls percentage among scheduled tribes.

Participation of Scheduled Tribes Children

Gross Enrolment Ratio (GER) is an indicator that reveals participation of children in school education. At primary stage GER of the country is 93.32 with 95.16 and 91.31 for boys and girls respectively. This indicates gender disparity in participation of children at primary stage. In comparison to the 6th Survey, not only GER has increased but gender as well as rural–urban disparity has also reduced. GER for scheduled tribes is 98.67, which may be considered satisfactory. In the category of scheduled tribes GER for boys is 104.80 whereas for girls it is 92.25. Boys enrolment may be considered as universal enrolment and girls enrolment near the realization of universal enrolment.

State-wise figures on GER for scheduled tribes reveal that many states are lagging behind. States having GER less than 80 are Bihar, Jammu & Kashmir and Nagaland. Among North-Eastern states Meghalaya and Nagaland are the states which are predominantly populated by ST and have GER less than 100 otherwise all other states have GER more than 100. In the North-East region Nagaland has the lowest participation of children with GER 71.95. Twenty-one states may be considered having universal enrolment as they have GER more than hundred. Whereas four states namely Orissa, Goa, Meghalaya and Assam are near the realization of universal enrolment with GER 95.56, 94.64, 91.57 and 90.80 respectively. Six states, Manipur, Meghalaya, Mizoram, Tamil Nadu and Uttaranchal and Goa and two union

Table 5 : Gross Enrolment Ratio

Category	Boys	Girls	Total
All communities[5]	95.16	91.31	93.32
Scheduled Tribes[6]	104.8	92.25	98.67

territories A & N Islands and D & N Haveli have better participation of girls in comparison to the boys as Girls' GER is higher than boys GER. In remaining twenty-seven states/Uts, gender disparity exist and huge gape between boys and girls participation is observed in Bihar, Jammu & Kashmir, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Tripura, West Bengal and Lakshdweep.

CONCLUSIONS

Above analysis leads following important findings regarding the education of scheduled tribes children at primary stage. 14.27% habitations do not have primary education facility within a walking distance of one kilometer. 79.27 per cent of the total habitations which are predominantly inhabited by scheduled tribes, representing 89.01 percent population, are served within a distance of one kilometer i.e. 20.73 percent habitations do not have approach to primary education facility within a distance of one kilometer. 21.06 per cent villages do not have primary education facility. 30 percent of the villages in which 75 per cent or more scheduled tribes are living, do not have primary education facility. In rural area scheduled castes children's share is 9.37 where as in urban area it is only 3.92. In India, Gross Enrolment Ratio at primary stage for all categories is 93.32 whereas for ST, it is 98.67. From fourth survey to seventh survey, an increasing trend of share of scheduled tribes in total enrolment is observed. At primary stage, overall enrolment of scheduled tribes is near the realization of universal enrolment but there is need of effort to bring ST girls to school, as GER for ST girls is 92.25. Among North- eastern states Nagaland has the lowest participation of children at primary stage with GER 71.95 only whereas Bihar has the lowest girls percentage among scheduled tribes.

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ANTHROPOLOGICAL STUDY ON TRADITIONAL HEALTH PRACTICES OF RAJ-GONDS

Rajesh Shukla*, Moyna Chakravarty**

Abstract: *Indian traditional medicinal system is deep rooted and is as old as origin of civilization . People utilize plants and animals from their surrounding for the treatment of various diseases and ailments. Present research paper reports the herbal medicines, belief system, traditional or modern medical facilities availed by Raj-Gonds. Raj-Gonds residing in Tuman and their adjacent villages depend on these medical facilities for their health care needs. For the present study 117 families were selected. The population is 1342 with 29.36 % literacy rate. Traditional healers, P.H.C., private medical practitioners, depot holder and other registered medical practitioner (RMP) serve the health facilities. 4 villages were selected for data collection, by using personal interview schedule, interview of traditional healers and supported by photographs.*

Malaria is most prevailing disease found in these villages, but jaundice, general fever, cough-cold, back-ache, head-ache etc. are also prevalent in the study area. For the health related problems people first approached traditional healers then allopathic practitioners. Information about medicinal plants, mode of administration, doses, botanical names were documented. Objective of the present study was to know the utilization of existing health facilities and dependency on traditional medical practices.

INTRODUCTION

Majority of tribal community utilize ancient traditional medical knowledge for the treatment of ailments and prevention. These medicines are procured from the plants, animals and other minerals available in their surroundings. They use roots, barks, stems, branches, leaves, flowers, fruits and seeds for the treatment[1-2]. Raj-Gonds have deep faith in their native folk lore medicine for remedies and they rely on their own system of treatment, which is a part of their cultural heritage. Raj-Gonds have deep faith in magico-religious and herbal medicinal recipes used for the treatment of various ailments. They first prefer their traditional system of medicine. In case of insignificant result very few people approach modern medical treatment. Gond tribe resides mainly in Madhya Pradesh, Maharashtra, Andhra Pradesh, Bihar, Karnataka, West Bengal and Gujrat[3-5]. Raj-Gonds are landholding group amongst the Gonds. The higher concentration of Raj-Gonds are residing in Gadchiroli, Chandrapur, Yotmal, Amravati, Wardha, Nagpur, Bhandara districts, their local dialect is known as *Gondi*. Endogamous marriage is common among the community. Their main source of income is agriculture, labor work, and animal husbandry. People of Tuman and other adjoining villages were aware of the importance of education for both boys and girls. The total population of these villages is 3352, out of which 40.23 % are Raj-Gonds. The important festival celebrated by them is *Bar-nacha*, which is celebrated

*Research Scholar, **Reader, School of Studies in Anthropology, Pt. Ravishankar Shukla University, Raipur–10(C.G.) E-mail: rds.anth@gmail.com; rajks_anth@hotmail.com

after every 3 – 5 years. Besides this holi, cher-chera, diwali and other hindu festivals are celebrated by the Raj-Gonds. For the present paper, four villages were selected through random sampling method. In-depth interviews were taken from the villagers, traditional healers (T.H.), and also from the beneficiaries who received the treatment. Information related with the flora, fauna, and medicinal recipes were collected. 117 households from four villages were selected for the socio-demographic survey, the informations were documented and analyzed.

RESULTS AND DISCUSSIONS

Health and health related problems and their treatment is very complex among the Raj-Gonds. Their health status depends on nutrition and food intake, cleanliness, sanitation, safe drinking water and surrounding environment. People correlate their health with physical labour and routine work. A person is considered healthy when they take proper diet and work with his/her full efficiency. Raj-Gonds consider social, cultural, black magic, malnutrition and adverse climatic conditions as major causal factors for ill health. After analyzing the informations the causal factors were categorized into two head under the first category, the diseases caused by physical and environmental imbalance under which malaria, fever, cough, head-ache, jaundice, weakness, cold, back-ache and gynaecological disorders, etc. and under the second category the causal factors were unsatisfied soul of dead ancestor, deity, black magic, intrusion of witch etc. The health facility providers are traditional healers (Baiga, Vaidhraj, etc.) for these diseases.

People approached to traditional healers for all kinds of ailments. They categorized the diseases by using traditional method of diagnosing, after which they start the treatment. Diseases caused by environmental or physical imbalance is treated by vaidhraj using various herbal recipes, jhad-phook or both. Vaidhraj collect these herbs from the forest and perform rituals to respective deity and offer coconut, agarbatti, rice beads, flowers etc. during collection. If the causal factor of disease is supernatural power, baiga offer lemons, sarees, rice beads, country liquor, bidi, bangles, coconuts, hens etc. during treatment. If the problem is severe, they perform arjanidhayan and enchant powerful mantra also.

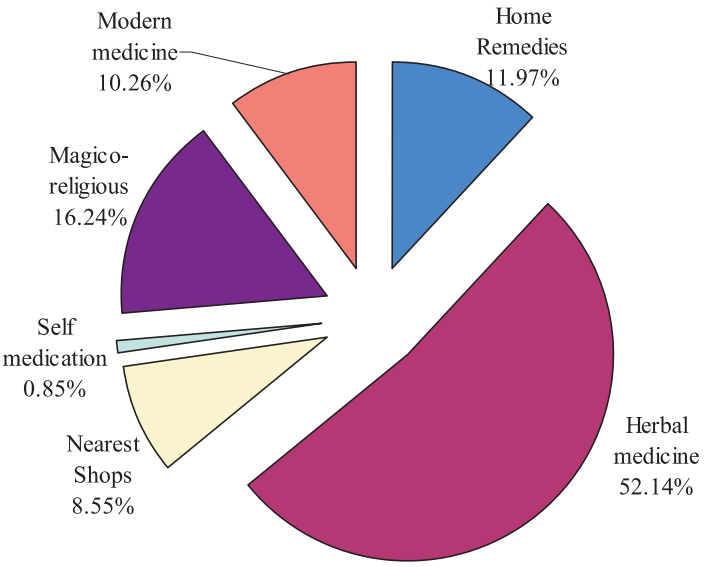
Raj-Gonds have deep rooted faith in god and goddesses. They use herbal medicines and magico-religious performance for the treatment of disease and causal factors of disease. These signify the practice of ancient health care system of Raj-Gonds. During the study, it was observed that, they require development with respect to economy, education, and social structure. Their income is based on agriculture, minor forest produce collection, labour work, private and government services, and private shops. Health facility providers of this area are traditional men, private medicinal practitioners, trained / untrained mid-wives, depot holders, anganwadi workers, primary health centre (Tuman) and registered medical practitioners (RMP). People can not endure the cost of modern medicine due to the high cost of treatment and poor economic status; it's a compelling reason for them to seek the services of traditional healers. Malaria is the most frequently occurring disease among the community. During the study 47 persons were found to suffer from various ailments,

out of which 22 people (46.81%) suffered from malaria, 5 people (10.64%) from various kinds of fever, 06 people (12.67%) from cough & cold, 02 people (04.26%) from leucorrhea and detail of various disease are shown in table 1, For these diseases people have choice of treatment about the ailments. All 47 patients were interviewed and it was observed that 52.14% of them first approach the traditional healer while only 10.2% as per Fig 1 approached first to modern medical system for their health care needs.

Table 1: Order of preference with respect to diseases

Name of Disease	Total	Traditional Treatment		Modern Medicine	
		Number	Percentage	Number	Percentage
General Fever	5	1	2.13	4	8.51
Malaria	22	7	14.89	15	31.91
Cough & cold	6	6	12.76	-	-
Tuberculosis	1	1	2.13	-	-
Paralysis	1	1	2.13	-	-
Weakness	1	1	2.13	-	-
Fracture	1	1	2.13	-	-
Cerebral Fever	1	1	2.13	-	-
Leucorrhea	2	1	2.13	1	2.13
Back ache & head ache	3	2	4.25	1	2.13
Others	4	3	6.38	1	2.13
Total	47	25	53.19	22	46.81

Fig 1: Order of Preference among the Raj-Gonds



For the above mentioned ailments Raj-Gonds were using various herbs for medicinal preparation. In table 2, the mode of administration, doses, local name, and botanical names of the herbs used by them is discussed.

Table 2: Herbal Medicines used by Raj-Gonds for various common ailments

01.	Local Name	:	**Bhui neem**
	Botanical Name	:	*Andrographis paniculata*
	Disease	:	Malaria
	Part used	:	Leaf, Whole Plant
	Mode of administration	:	Whole plant or leaf is grinded and tablet is prepared with sugar. Three tablets, three to four times daily.
02.	Local Name	:	**Neem**
	Botanical Name	:	*Azadirachta indica*
	Disease	:	General Fever
	Part used	:	Bark
	Mode of administration	:	Burnt bark is taken with milk orally. Twice daily for 1 – 2 days.
03.	Local Name	:	**Karghee (Satavar)**
	Botanical Name	:	*Asparagus racemosus*
	Disease	:	Leucorrhea
	Part used	:	Tuber
	Mode of administration	:	Tuber is soaked in water fortnight and boiled. Taken with tea at morning, strained the mixture and taken orally. Once daily for five days.
04.	Local Name	:	**Hadjor**
	Botanical Name	:	*Cissus quadrangularis*
	Disease	:	Fracture
	Part used	:	Stem
	Mode of administration	:	Paste of stem is applied and plastered, and 1 to ½ cup paste is taken orally with one glass water. Until relief.
05.	Local Name	:	**Kamal pokhra**
	Botanical Name	:	*Nelumbo nucifera*
	Disease	:	Epilepsy
	Part used	:	Seed
	Mode of administration	:	Half glass juice is taken with water orally. Once after every attack.
06.	Local Name	:	**Satavar**
	Botanical Name	:	*Asparagus recemosus*
	Disease	:	Asthma, Tuberculosis
	Part used	:	Tuber
	Mode of administration	:	Half glass juice is taken with water orally. Once daily for 40 days.
07.	Local Name	:	**Peli katari**
	Botanical Name	:	*Argemone mexicana*

	Disease	:	Cough and Cold
	Part used	:	Flower
	Mode of administration	:	Half glass juice is taken with water orally. Once daily for 40 days.
08.	Local Name	:	**Jungli Haldi**
	Botanical Name	:	*Curcuma longa*
	Disease	:	Jaundice
	Part used	:	Flower
	Mode of administration	:	Massage with juice over body, and ½ cup juice is taken orally. Twice only in morning and evening.
09.	Local Name	:	**Mainphal**
	Botanical Name	:	*Randio dumetous*
	Disease	:	Head-ache
	Part used	:	Tuber
	Method	:	Tuber is grinded and applied on fore head.
	Dose	:	Twice only.
10.	Local Name	:	**Shankar jata**
	Botanical Name	:	*Urario picto*
	Disease	:	Dysentery
	Part used	:	Leaf
	Mode of administration	:	Fresh leaf is grinded and juice is taken with water. After every 3 hrs. uptil relief.
11.	Local Name	:	**Nagarmotha**
	Botanical Name	:	*Cyperus rotandus*
	Disease	:	Weakness, Stomach-ache
	Part used	:	Root
	Mode of administration	:	Dried root is grounded and tablet is prepared with Jaggery. Twice daily uptil relief
12.	Local Name	:	**Doodhi**
	Botanical Name	:	*Euphoribia thymifolia*
	Disease	:	Dog bite
	Part used	:	Whole part
	Mode of administration	:	Dried root is grounded and tablet is prepared with Jaggery. Once immediate after bite then once daily for 2 – 3 days.
13.	Local Name	:	Chirchira (Tilchita)
	Botanical Name	:	*Achyranthes aspera*
	Disease	:	Stone, Scorpion bite
	Part used	:	Root
	Mode of administration	:	Juice is taken orally. Once daily until relief.
14.	Local Name	:	Dhamin Snake
	Disease	:	Arthritis
	Part used	:	Fats
	Mode of administration	:	Fat is boiled and converted into oil and then applied on joints. Until relief.

15.	Local Name	:	Khatmal (Bed bug)
	Disease	:	Jaharbad (Poisoning)
	Mode of administration	:	2-3 bed bug is taken with ripened banana only at sunday and thursday. Once only for three days.

CONCLUSIONS

Traditional medicinal system is effective and trustworthy system of treatment; Raj-Gonds have deep rooted faith and belief toward this system. Traditional healer enjoy highly regarded position among the community, they depend on baiga / vaidhraj for the treatment and prevention of diseases. They are confident while receiving the medicines from traditional man, even though educated people of this community utilize traditional medicine with formidable and faith. People have first preferred traditional medicine for their health care needs, besides these modern allopathic medical facilities are also available.

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