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Research Article

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Sociodemographic and healthcare profile of tribal people in Bandipur tiger reserve area, Mysore, Karnataka, India

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ABSTRACT

Background: Tribal health and problems faced by tribal people is one of the major public health concerns in our country which has large forest belt and variety of tribes residing amongst it. In the name of wild life conservation, most of the tribes have been shifted out of the forest. This study is conducted to know social and health problems of these tribals.

Methods: Cross sectional Community based descriptive study was conducted in tribal Hamlets around the Bandipur tiger reserve area of Mysore District between September 21st to 25th 2015. All the tribal population residing in the seven selected hamlets were included in the study. Descriptive statistics like percentage and mean, SD were used to describe the variables. Chi square test was used to find the significance of difference.

Results: Jenukuruba and was predominant tribe in 4 hamlets, soligas in 2 and kadukuruba in 0ne. 60% of the families were nuclear. 48% were nonliterate, underfive female sex ratio was more than 1000(1285/1000males). 71% of the marriages were child marriages. And child marriages were significantly more among girls. Dependency ratio was 21.6%. Only one hamlet had accessibility to basic medicines. Mean distance for PHC was 5km and delivery facility at 28.8km (SD 7km). All hamlets had anganwadis but one centre had no anganwadi worker appointed. Immunization coverage was good but smoking and alcoholism was a major problem.

Conclusions: Ongoing efforts of the Government to bring tribals to the mainstream society has a long distance to cover as only bare minimum facilities are provided to the tribals and the hesitation of tribals to accept these facilities is a challenge.

Keywords: Tribal health, Bandipur forest, Jenukuruba, Sociodemography

INTRODUCTION

India has a diverse social and cultural composition in its population. Apart from various religions and communities it has its geographical diversity too. 21.43% of the Indian Territory is covered by forest area. Because of the changing rules to conserve the forest belt, many of these tribals have come out of the forest or have been relocated outside the forest. Thus it has a significant number of tribes inhabited in this forest. As per 2011

census 8.6% of the Indian population is contributed by these scheduled tribes in 427 identifies groups known by various names. Out of these 74 are primitive tribes. Karnataka has 6.9% tribal population. Mysore district stands third in Karnataka in having tribal population.

One among these important forest areas in Karnataka is Bandipur National tiger reserve established in 1973, spread over 890 sqKm.³ Hunter-gatherer tribes have occupied these forests from several centuries. Nearly 1500 or more people live within the park and another 5 to

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6 thousand on the suburbs. Most tribals belong to the tribes called *Betta Kuruba*, *Yerava and Jenu Kuruba*, *Soliga*. Today, many of these people work as labourers in coffee plantations or farms and also engage in seasonal work provided by the Forest Department.³

The widespread poverty, illiteracy, malnutrition, absence of safe drinking water and sanitary living conditions, poor maternal and child health services and poor coverage of national health and nutritional services are responsible for poor health conditions prevailing among the tribal population in India.⁴

Primitive tribal groups of India have peculiar health problems and genetic problems in the form of sickle cell anemia, G-6-PD enzyme deficiency and sexually transmitted diseases. They also suffer from endemic diseases like malaria, tuberculosis, influenza, dysentery and malnutrition, venereal disease induced abortion, inbreeding. Early age at marriage, lack of family planning, unhygienic care of new borns and mother, home delivery, unscientific feeding habits, poor coverage of vaccination and many other factors leading onto high infant mortality. Substance abuses in the form of tobacco or alcohol and opium have been a constant problem.⁴

NFHS-I, II and III data show trends of deteriorating health indicators and socioeconomic status of the tribal population in comparison to national statistics. As health is an important determinant of the socioeconomic growth. considering the difficult terrain in which tribal people reside, the cut off for population to establish health facilities is relaxed for these areas. Still the statistics reveal that in the tribal areas of the country, there is a shortage of total 5638 Sub-centres, 1086 PHCs and 268 CHCs. Maximum shortage of Sub Centres is in the State of Madhya Pradesh, where 4516 is required and only 2908 are existing. There exists a shortfall of 1608 Sub centres.⁵ Many times tribals cannot travel to the PHCs located in the places away from the tribal area in bigger villages, which leaves sub centre as their first and only point of contact with health care system. Shortage of these centres and no manpower at sub centres leaves tribal people with no alternatives to traditional healing methods.

There is huge shortfall (69.3%) of Health Assistant (Male), followed by shortfall of 48.4% of Health Assistant (Female). Doctor's shortfall is 23.3% against the 712 numbers is sanctioned and is in position. There exists a shortfall of 2478 Female Health workers/ANMs. West Bengal is followed Chhattisgarh, where there is shortfall of 936 positions against required 2984 and 408 vacant positions.⁵

There has been no published literature on the sociodemographic profile and healthcare status of the tribes residing in the Banipur forest area. Thus present study was carried out to describe the sociodemographic profile of tribal people in Bandipur tiger reserve area and

to describe the healthcare profile of tribal people in Bandipur tiger reserve area.

METHODS

Study area

Tribal hamlets and relocation centres in and around the Bandipur tiger reserve area in Bandipur talluk of Mysore District of Karnataka, India.

Study population

Tribal population residing in the selected hamlets og Bandipur forest.

Study design

Cross sectional Community based descriptive study. Period of the study was September to October 2015.

Sample size

This was a whole sample descriptive study where all the people in the selected hamlets were included in the study. Seven hamlets covering 171 households and 705 individuals were included in the study.

Data collection

Present study was carried out during annual special camp of National Service scheme (NSS) held at Bandipur tiger reserve forest from 20th to 26th September 2015. NSS volunteers (6th and 7th term MBBS students) leads by two Postgraduate students of Community Medicine department were trained in a class room on the collection of data from tribals. All the questions were discussed in detail explaining the idea behind framing each question and how to extract data for each. Heights, Weight, sitting blood pressure measurement examination were demonstrated. Mock interviews were conducted to give a hand on training to the volunteers before heading to the camp area. During the camp days hamlets were visited by teams of volunteers supervised by one staff and two postgraduates. House to house survey was done using semi structured Proforma. General information about the hamlet, transportation and healthcare facilities available, social problems in the hamlets were collected from residents. Representatives of tribal self help group and NGOs accompanies the survey teams to facilitate the data collection. Family composition and individual details were collected from the major respondents in the family. Immunization status of the under five children and blood pressure of people aged above 50 years were measured.

Quality control

Volunteers were divided into groups of five people with a leader. They cross checked each proforma and submitted to the leader. After ensuring completeness of proforma group leaders submitted them to the postgraduate students who entered the data.

Statistical analysis

Descriptive statistics like percentage and mean, SD were used to describe the variables. Chi square test was used to find the significance of difference.

Ethical clearance

Institutional ethical committee clearance was obtained before the study and informed consent was taken from the respondents before starting the interview.

RESULTS

Seven hamlets were covered during this house to house survey by the study team. They were situated around the Bandipur tiger reserve at an average radius of 10 km (range 30km). Totally 171 households were interviewed and information was collected on 705 tribal people.

Jenukuruba was predominant tribe in four hamlets, soligas in two and kadukuruba in one. All the hamlets

had anganwadi centres with employed anganwadi worker, but one centre was taken care by in charge anganwadi worker. One hamlet did not have ASHA worker appointed. Six hamlets had primary school facility. Piped water supply was available in only four hamlets. Residents of all the hamlets practiced open air defecation and sanitary latrines were rarely seen. Open drainage and vector breeding places were seen in all the hamlets. Three hamlets had no motor able tar road to them and five had some sort of public transport facility. Mean distance for PHC was 5km and delivery facility at 28.8km (SD 7km). Only one hamlet had accessibility to basic medicines within the hamlet. Six hamlets had witnessed man-wild animal conflict in previous one year.

Out of the surveyed 171 households, Soliga tribe was predominant (46%) and they were utilizing government or social services more than other tribes as shown in Table 1. Despite relocating tribals to settlement colonies their housing conditions were poor. Lighting and ventilation was adequate in only 26 (15.2%) and 34 (20%) houses respectively. Bohr well was the main source of water for these (73%) households and only one fifth households had piped water supply, remaining fetched from well or pond.

Table 1: Distribution of study household according to their tribe and housing conditions, social service utilization.

Name of tribe	Families (%)	BPL card holders (%)	Ration card holders (%)	Adequate ventilation (%)	Adequate lighting (%)	LPG (%)	Electricity (%)	Vector breeding places (%)
Soliga	79(46)	34(49.5)	76(49)	21(61)	15(57)	47(93)	65(50)	42(39)
Jenu kuruba	63(36.8)	20(28)	54(34)	9(26)	9(34)	3(5)	41(32)	49(45)
Kadu kuruba	27(15.7)	15(21)	25(16)	4(11)	2(7)	1(2)	22(17)	15(14)
Christian	1(.005)	1(1.5)	1(1)	0	0	1	1(1)	1(1)
Bettada Kuruba	1(.005)	0	0	0	0	0	0	1(1)
Total	171	70(41)	156(91)	34(20)	26(15)	52(30)	129(75)	108(63)

As shown in Table 2, most of the study population was in the productive age group with a dependency ratio of 21.6%. Nuclear family trend was seen among tribals also as 60.8% of the families were nuclear with only 14.0% joint families. Encouraging sex ratio was observed here with 1055 females per 1000 males. But the literacy ratio was only 47.0 and 56.1 among females and males. Child marriage was seen among 71.5% of the tribals. Most of the men were employed as manual laborers and 55% females were housewives and another 32% as manual labourers. Only 0.9% of the study population had some form of health insurance apart from BPL card benefits and only 3.4% had life insurance. Despite many schemes rolled out for them, only 200 (28.3%) had a bank account

in their name. Surprisingly 559(79.2%) had Aadhar card (universal identification number).

Smoking was seen in 66 (25.6%) adult men (>17 years), 76 (29.5%) were alcoholics. Tobacco chewing was practiced by 65 (24.8%) women. Among the under fives 86.2% were completely immunized. Two were known cases of DM, six were hypertensive. Two people had suffered from stoke. Two cases were on antitubercular treatment, 44 women were having gross visible pallor. Scabies, ringworm infections were seen in more than half of the children. Three persons were suffering from cirrhosis of liver and two with of lung cancer.

Table 2: Gender wise distribution of sociodemographic features and nutritional status of study population.

	Sex		
Age	Male (N=343)	Female (362)	
0	4(1)	9 (2)	
1-5	31 (9)	36 (10)	
6-14	37 (10)	45 (12)	
15-45	206 (60)	212 (59)	
46-60	43 (12.5)	39 (10)	
>60	22 (6.5)	21 (5)	
Education	N= 308	N=319	
Uneducated	135 (43)	169(52.3)	
Primary	40 (13)	39 (12.3)	
Higher primary	71 (23)	61 (19.0)	
Pre-university	55 (18)	49 (15.0)	
Degree	7 (3)	1 (0.35)	
Occupantion	N=256	N=260	
Unemployed	16 (6.0)	17 (6.5)	
Cooli	180 (70.0)	83 (32.0)	
Unskilled	56 (22.0)	15 (5.4)	
Skilled	2 (0.8)	1 (0.3)	
Professional	2 (0.8)	0	
Housewife	1 (0.4)	144 (55%)	
Age at marriage	N=202	N=240	
Less than 21/18	122 (60)	194 (80)	
More than 21/18	80 (40)	46 (20)	
Documents			
Aadhar card	275 (80)	284 (78.4)	
Life insurance	13 (4)	11 (4)	
Health insurance	3 (1)	4 (1.2)	
Bank account	102 (30)	98 (27.1)	
Immunization	N =35	N =45	
status (age <5yrs)	N =35	11 =45	
Nil	0	1(3)	
Incomplete	3 (8)	7(15)	
Complete	32 (92)	37(82)	
BMI of adults	N=48	N=114	
(age>18yrs)	11-70	11-117	
Thin	7 (17.9)	32 (82.9)	
Normal	34 (35.8)	61 (64.2)	
Overweight	4 (17.4)	19 (82.6)	
Obese	3 (60.0)	2 (40.0)	

Height and weight measurement was done in 202 individuals. Among 162 adults thinness, normal BMI, overweight and obesity was noticed in 39 (19.3%), 95 (47.0%), 23 (11.4%) and 5 (2.5%) respectively. Out of 11 adolescents thinness was seen in eight, overweight in one and two were normally built. Among 32 adolescents five were suffering from under nutrition (15.6%) as per WHO recommended BMI for age(less than negative 2SD). Anthropometry of 20 underfives showed 6 children to be undernourished (30%).

Bivariate analysis revealed statistically significant higher number of child marriages among women (p<0.001).

DISCUSSION

Tribal communities in the study hamlets were in different stages of their resettlement out of the forest. Few hamlets were moved out 20 years ago and some were as recent as three years. The shyness of tribals was very much evident when study team reached the hamlets. Despite seeing representatives from their own community and tribal leaders with us, many used to flee into the forest. Repeated efforts were required to convince them to come back and receive the medical check up. In few hamlets young adults and children did not come back to hamlet till the vehicle left their hamlet. This indicates their apprehension towards the strangers which needs repeated visits from the service providers.

Availability of Anganwadi, primary school and healthcare facility was better in the study area compared to other parts of the country. Despite having poor transportation facility, schools and anganwadis were well maintained. These teachers either walked to or used their own transportation methods to reach hamlets. Mean distance of the PHC was 10 Kms (range 25km) and sub centre was within 4 to 5 km radius. Both PHC and sub centre were duly appointed with the required staff. For secondary care they had to travel nearly 30 to 35 Kms. Scenario was better than in other parts of the country as there is a shortage of total 5638 Sub-centres, 1086 PHCs and 268 CHCs along with huge shortfall of doctors in the tribal area of many states.⁵

Most of the study population was in 15 to 60 year age group with dependency ratio of 21.6%. The trend of high nuclear families in study area is supported by finding s of another study in the same region which reported 60.8% of the families to be nuclear with only 14.0% joint families in their study.⁶ Favourable female sex ratio observed here (1055 females per 1000 males) was also seen in the different tribes in Mysore district, which revealed higher female sex in under six age group also. Another state level study on tribals revealed sex ratio for Scheduled Tribes in Karnataka as 990 females per 1000 males.²

In the present study 71.5 % of the married people were victims of child marriages. This is because of the peculiar practices in these tribes. Marriage is hardly governed by any rules here and the social norm is, boy and girl who like each other exchange betel nut leaves and they run away into the forest. Similar findings were reported from other tribes in Mysore with 65% of these marriages being consanguineous.⁶

Present study observed overall literacy rate of 51.5%. Among females and males it was 47.0 and 56.1 %. This was comparable to literacy rate among other tribes in Karnataka as overall rate is 53.9% and female literacy to be 42.5 % in 2011. Despite improving literacy status

most tribals engage in daily wage works. With the effort of some NGOs (Swami Vivekananda Youth Movement) in neighbouring talks, some have completed under graduation and are working for up liftment of their community members.

Because of relocation out of the forest and strict rules of the forest department the self sufficient life of tribals has turned into daily wage workers. Most of the men go to nearby coffee estates for four to six months for employment and in the remaining time depend on work given by forest department or other works. In other tribes of the state also majority of the people were day labourers (51.30%), other occupations are agriculture (11.00%), business (24.80%).² Therefore, there is no job security and they do not have any regular income.

Though many were living in resettlement colonies, housing conditions were not satisfactory. Less than quarter of the houses had adequate lighting and ventilation. Though electricity was connected to 75% of the houses, they hardly got six to eight hours of electricity per day. LPG was available in only 30% houses, remaining used firewood as fuel. These connections of LPG was a result of efforts of a Range forest officer who initiated many reforms in the area along with forming self help groups of tribals. These findings are little better compared to findings of other studies in the tribal area, which reported 82.00% of the households using firewood, 10% uses kerosene and firewood, 2.00% use kerosene. 60.88% of the houses are electrified. There is no proper ventilation in houses among all the tribal communities of the present study.⁶

It also observed that 76.12% of them were living in a single room house, majority of the tribal communities were living in tiled roof (84.50%), 12.75% are residing in thatched houses and only 2.75% of the tribal haadi dwellers are living in Rein Forced Cement Concrete (RCC) houses.⁶

Bohrwell was the major source of most of the tribals in the study area. Residents of all the hamlets practiced open air defecation and sanitary latrines were rarely seen. Open drainage and vector breeding places were seen in all the hamlets. Study in overall Mysore tribal areas also reported that most communities who were dwelling in haadis got water through bore wells sunk in the localities. It also reported that 90.90% families used open field and 0.90% of the families use road side for defecation. 6

Because of the fear and apprehension of the children anthropometry was done in 53 children only. Under nutrition in under fives and 6 to 19 years age group was 30% and 15% respectively. Another study in the same communities observed an overall prevalence rate of underweight, stunting and wasting to be 38.6, 36.8 and 18.6 per cent, respectively⁷. Practices such as late initiation of breastfeeding, no feeding of colostrum, and faulty weaning practices, were found to be causes of

under nutrition in tribal children along with lack of access to health services, illiteracy, unhygienic personal habits.²

Dermatological infections were seen widespread among the children. Poor personal hygiene was pretty evident in adults too. Daily bathing was a rare practice. There were very few known cases of diabetes or hypertension but they rarely got it checked. Attempts to measure their BP by the study team were objected by them. Alcohol and smoking was a major social problem among men. This was also confirmed by the local leaders and self help group members. Because of the addiction they rarely cared to save their earnings. State level study estimated prevalence of hypertension among tribal communities to be 21.7 per cent.²

Utilization of services like health insurance, life insurance, ration card, bank accounts were all less which can be explained by the poor knowledge and attitude of tribals towards savings and future planning. Surprisingly Aadhar card enrolment was 80%. This could be because of repeated enrolment drives and insistence of Aadhar for LPG, bank account and maternity benefit schemes.

CONCLUSION

Though the houses and basic facilities were provided, healthful housing conditions were lacking. 60% of the families were nuclear. 48% were nonliterates. Underfive female sex ratio was more than national average. Less than 2% had health insurance. 28 % were having bank accounts. Immunization coverage was good among underfives but, undernutrition was upto 30% in adolescents. Smoking and alcoholism was a major problem among adults. 71% of the marriages were child marriages. Thus lot of work needs to be done to improve the living and health status of the tribals than just providing built houses and government schemes.

Limitations

Because of the cultural barriers and hesitation of the tribals physical examination, anthropometry of all the members could not be done. Present study covers only seven out of 23 hamlets in the Bandipur area because of time constraints.

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