Estimates of Fertility and Mortality in Kutia Kondhs of Phulbani District, Orissa

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ABSTRACT Demographic analysis of genealogical data, on 212 households of Kutia Kondhs-a primitive tribal group from Tumudibandh block of Balliguda sub-division of phulbani district, Orissa, is conducted employing indirect estimation techniques. The results of the study indicate that the total fertility rate of Kutia Kondhs is higher than Indian national population which is in accordance with high tribal fertility levels as reported in some studies from India. The Kutia Kondhs features distressing mortality conditions as compared to Indian national population and sexual mortality differentials with females experiencing harsher mortality are also present for Kutia Kondhs. The trends are discussed in the light of prevailing socioeconomic, cultural and health care problems among this tribal group.

INTRODUCTION

The district Phulbani is one of the thirteen districts of Orissa with a population of 7,17,280 (Census of India, 1981a). Kutia Kondhs are one of the endogamous groups of the larger Kondh tribe of Orissa and have been classified as one of the most primitive tribal groups of the country (Government of India, 1989). Kutias are largely concentrated in the Tumudibandh block of Balliguda sub-division of Phulbani district. Out of the total Tumudibandh block population of 14,514, about 34.25 percent consist of Kutia Kondhs.

Kutia Kondhs are primarily hill dwellers and their natural habitat of hilly terrains render them vulnerable to a host of extrigent factors which may have direct or indirect bearing on their health status.

Kutia Kondhs depend for their subsistence principally on shifting cultivation and forest produce, supplementing their income by occassional contract labour. Their staple food is rice and millets which they consume in different forms and in various concoction. Kutia Kondhs also consume a lot of tubers, roots of trees, raw bamboo shafts, wild fruits etc. They consume non-vegetarian food depending on its availability.

Besides, a considerable number of cases of malaria, tuberculosis, leprosy, meningitis, G-6-PD enzyme deficiency have been seen among these people and there is widespread malnutrition from time to time.

This paper presents estimates of fertility and mortality for the Kutia Kondhs of Phulbani district, Orissa. An attempt is also made to compare these estimates with those for other India tribal populations and Indian national population derived from 1981 Census.

MATERIAL AND METHODS

In the present investigation 212 Kutia Kondh nuclear families from 46 randomly selected Kutia Kondh villages were studied. A semistructured questionnaire was used for collecting fertility and mortality data. Reproductive performance data were collected by pregnancy enumeration. The information was cross checked from elderly members of the households and some times from village elders also. Average fertility was calculated in each 5 year age interval for the women in the child bearing ages, and that of the women at the end of child bearing age is designated as the total fertility. Since most of the information is based on oral reports, indirect estimation tech-

niques were employed for calculating total fer-
tility rate (TFR), based on the fact that the ratio
of the average parity of women at the end of child
bearing to the average parity of women in the age
interval (25-29) is approximately that between the
mean parities of women in their early and late
twenties.

i.e. $T.F./P_3 = P_3/P_2$

where T.F.= Total fertility, P_2 = mean parity of
the women in the age interval 20-24, P_3 = mean
parity of women in the age interval 25-29 (United
Nations, 1967).

Similarly, in the absence of exact ages at death
of offspring, indirect estimation (Brass and
Coale, 1968 and Brass, 1975) was used to assess
mortality. This method translates proportions of
surviving and dead among the children born to
women in different age groups into conventional
measures of mortality.

RESULTS AND DISCUSSION

The fertility record of Kutia Kondh mothers
in various childbearing age groups (Table 1) indi-
cates a total fertility of 5.03 estimated from the
average from women in the age group 45-49.
However, the indirect estimation of total fertil-
ity calculated from $(P_3)^2/P_2$ has been found to be
5.61 which differs little from the observed fer-
tility rate for the women in the age interval of
45-49. The total fertility rate of Kutia Kondhs is
higher than that for the Indian national population
of 4.55 (Census of India, 1981b) but is in accor-
dance with high tribal fertility rates reported for
various Indian tribal populations (Bhowmik et al.,
1975; Sharma, 1978, Sinha and Pal, 1983; Ray
and Roth, 1984, Singh et al., 1987; Basu et al.,
1988; Basu and Kshatriya, 1989).

The distribution of age and sex specific mor-
tality among Kutia Kondhs (Table 2) together
with multiplying factors k (a) and the resultant
q (a)values show the life expectancy at birth.
These estimates are based on q^5 values and
interpolated from Brass one-parameter model life

**Table 1: Estimation of fertility and mean age at child
bearing from age specific average parities**

Age interval	No. of woman	No. of births			Mean Parity		
		Male	Female	Both	Male	Female	Both
15-19	10	7	2	9	0.70	0.20	0.90
20-24	14	13	13	26	0.93	0.93	1.86
25-29	13	26	16	42	2.00	1.23	3.23
30-34	21	42	38	80	2.00	1.81	3.81
35-39	48	99	103	202	2.06	2.15	4.21
40-44	27	70	57	127	2.59	2.11	4.70
45-49	79	206	191	397	2.61	2.42	5.03
Total:	212	463	420	883	12.89	10.85	23.74

* Estimated total fertility 5.61
** m 27.86

* $(P_3)^2/P_2$
** mean age at child bearing = 2.25 (P_3/P_2)+23.95 (United
Nations, 1967)

tables (Carrier and Hobcraft, 1971). Kutia
Kondhs life expectancy at birth is 44.28 years,
while this figure is comparable to (41.09 yrs.)
Bastar tribes of Madhya Pradesh (Basu and
Kshatriya, 1989), it is much below the average
life expectancy at birth of 54.4 years for the
Indian population (Census of India, 1981c) and
higher than Juangs of Orissa, *i.e.* 36.9 yrs (Ray
and Roth, 1984).

Comparison of offspring mortality by mater-
nal age of Kutia Kondhs with those of Orissa and
Bastar Tribes shows non-significant differences
(Table 3) with the exception of offspring mor-
tality in the maternal age 15-19 years among
Bastar tribes (Basu and Kshatriya, 1989) where
the offspring mortality is considerably low, and
45-49 years among Juangs of Orissa (Ray and
Roth, 1984) where the offspring mortality is
appreciably high. Nevertheless, an overall tribal
mortality estimated in the present study is quite
distressing, especially when seen in the context
of Indian national population. The differences can
be attributed to the prevailing socio-economic,
cultural and primitive health care practices of the
Kutia Kondhs. They live in poverty, depending
mainly upon the shifting cultivation and forest
produce. Their poor food habits contribute to
malnutrition especially among children and preg-

Table 2: Estimation of proportion dead by age and sex specific mortality among Kutia Kondhs

Age Interval	Age	No. of Women	Age-specific child mortality No. of children born			No. of children dead				Males		Females		Both sexes	
			M	F	T	M	F	T	K_a*	D**	$q(a)$***	D**	$q(a)$***	D**	$q(a)$***
15-19	1	10	7	2	9	4	0	4	0.891	0.57	0.509	-	-	0.44	0.396
20-24	2	14	13	13	26	2	2	4	0.960	0.15	0.148	0.15	0.148	0.15	0.148
25-29	3	13	26	16	42	4	3	7	0.962	0.15	0.48	0.19	0.180	0.17	0.160
30-34	5	21	42	38	80	8	9	17	0.975	0.19	0.186	0.24	0.231	0.21	0.207
35-39	10	48	99	103	202	23	27	50	1.014	0.23	0.236	0.26	0.266	0.25	0.251
40-44	15	27	70	57	127	18	16	34	0.991	0.26	0.255	0.28	0.278	0.27	0.265
45-49	20	79	206	191	397	55	61	116	0.989	0.27	0.267	0.32	0.316	0.29	0.290
e_o^0 based on q_a values										(46.49)		(41.93)		(44.28)	

* Multipliers for age (a), Brass (1975); Ages 1-5 based on $(P_{(2)}/P_{(3)})$, ages 10-20 based on $\bar{m} = 27.86$
** Proportion of children dead
*** Probability of dying by age (a)

Table 3: Intergroup comparison for offspring mortality to the women for various childbearing age groups, based on standardized normal deviate (Z)*

S.No. Paired Popu- lation	Age interval						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1. Kutia Vs Murias	2.37**	0.13	0.49	1.0	0.71	0.50	0.55
2. Kutia Vs Madias	2.67**	0.61	0.95	0.68	0.25	0.05	0.93
3. Kutia Vs Bhattra	2.15**	0.81	0.45	0.003	0.07	0.09	0.34
4. Kutia Vs Halbas	1.00	0.64	1.07	0.77	0.38	0.25	0.16
5. Kutia Vs Juang	1.57	0.70	1.32	1.70	0.008	1.82	2.51**

$$* Z = \frac{x_1/n_1 - x_2/n_2}{\sqrt{P(1-P)(1/n_1 + 1/n_2)}}$$

x_1 and x_2 are the characteristics A in n_1 and n_2 samples of the populations N_1 and N_2 respectively, and $\hat{P} = x_1 + x_2/n_1 + n_2$
** The 'Z' values are significant 5 per cent level

nant mothers, which leads to increased susceptibility to morbid conditions. Maternal and child health care is largely neglected. The expectant mothers are rarely inoculated against tet-

anus and most of the deliveries are conducted at home in squatting position attended by elderly ladies of the village. Vaccination and immunization coverage of infants and children is inadequate among Kutia Kondhs. Malaria, meningitis, unspecified fevers, diarrhoea, respiratory infections and neo-natal tetanus take a heavy toll of infant and children. The Kutia Kondhs of Phulbani are highly conservative in their attitude towards modern medicine and family planning.

Analysis of the data on sex specific mortality using Brass multipliers (Brass, 1975) in general shows similar mortality increase along with the age in both the sexes. Using q^5 values to estimate average life expectancy from Brass tables, it has been observed that Kutia Kondhs males show a higher life expectancy (46.49) as compared to the females (41.93). Sex ratio of Kutia Kondhs (920/1000) lends further support to the above observation. Reversed sexual mortality differentials in the present study with females experiencing harsher mortality, is similar to Juangs of Orissa (Ray and Roth, 1984) and Indian national population (Census of India, 1981c). Thus, Kutia Kondhs who inhabit isolated difficult hilly terrains of Tumudibandha block of Phulbani district

reveal unpromising trends. The total fertility is higher than Indian national population and is in accordance with high tribal fertility levels as reflected in some studies from India. Kutia Kondhs also reveal higher mortality compared to Indian national population. Finally, Kutia Kondhs featured reversed sexual mortality differentials with females experiencing harsher mortality. Prevailing socio-economic, cultural and health care practices and the communication network are the key factors towards the observed demographic trends among Kutia Kondhs.

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