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Fertility and Pregnancy Rate: A Comparative Study between Urban and Rural Tribal Areas

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Abstract

Demographic transition as well as urbanisation is a great factor of the socio-economic behaviour of tribal communities but it is also affecting their health status because simple tribal people have ability to adopt themselves in their habitation throughout their life span whereas impact of alien environment and uprooting from their habitat and settlement in another place generating fertility and pregnancy associated problems amongst them. Fertility rate is usually defined by the total live birth within the fertile age group but pregnancy rate measures the actual parameters of having child (Child Birth) which is based on total live birth, total abortion and loss of foetus. Hence it is hypothesised that the pregnancy rate is absolutely related to the wealth and education level of the tribal population in both rural and urban areas.

With above background and hypothesis, the main objective of the study is to find out the fertility and pregnancy rate by residence and find out its associate factors which are responsible for high and low pregnancy rate. Secondary literature review and primary data collection are the basic tools of this research paper whereas District Level Health Survey Report 3, Sample Registration Report (2009), Annual Health Survey Report (2011) and different published articles, news, Internet and books have been followed as review and primary data are gathered from field work by pre tested structured schedule with the help of interview and Focus Group Discussions. The Specific formulas are used to find out the rate of pregnancy and its associated measures which are correlated with economy and education of the target group. After analysis results/findings are justified with secondary literature. For the study purpose tribal dominating village Nerli and urban area Bacheli of district south Bastar Dantewada, Chhattisgarh had been selected. The total live birth is 28 point less than the TLB of rural areas whereas abortion rate is 52.06 point high in urban area along with the loss of foetus is also 10 point high in that area in same income group. Hence, the high abortion rate and loss of foetus had been seen in low wealth quintile in urban population while abortion rate and loss of foetus were high in the middle wealth quintile category in rural areas. It is positive result of our research that the abortion rate and loss of foetus both are comparatively low in high wealth quintile group in both rural and urban areas as compare to low and middle economy group. In account of literacy the abortion rate and loss of foetus were lower amongst literate people of urban (141.76) and rural areas (98.55) as compared to illiterate people of both residential areas (urban: 180.46 and rural: 73.16) but it has been significant of the study is both abortion with 43.21 point and loss of foetus with 1 point high in rate in urban population rather than rural population. The findings of our study are the evident about the tribal population who had been resided in urban areas had lower pregnancy rate (242.67) and also low fertility rate (2.3) with higher abortion (322.22) and higher rate of the loss of foetus (6.1) which plays an essential role of declining in their population in Chhattisgarh. In order to solve the fertility and pregnancy related problems there is a need of assessment by anthropologists and medical practitioners together to find out the pregnancy and fertility related socio-physical factors for their betterment.

Keywords: Demographic Transition; Fertility; Pregnancy; Abortion.

Introduction

Fertility as well as Pregnancy rate is one of the major priorities in tribals as well as Global Public Health and it is a fundamental and inalienable part of women's health. Neoclassical theory suggests that demographic transition in human capital increases and fertility behaviour of households is bound to change in the favour of selective number of children. Urbanization, the process through which an increasing proportion of the total population resides in towns and cities has long been touted by analysts as a main factor in fertility decline. It is almost universally acknowledged that urban fertility is lower than rural fertility, except in the very poorest urban slum areas.

Goldstein (1978) observed that the fertility behaviour of migrants had been found that they tended to assimilate the fertility behaviour of the native population at destination when they moved from rural areas and smaller urban areas to larger cities.

Today the tribal people are not isolated but they are the massive part of the urban population. The socio-demographic transition is making them educated and wealthy. But regarding their health point of view they are facing lots of problems. Pregnancy related problems are one of the huge problems for the women and the society.

According to NRHM-3 report, at the national level, the crude birth rate (CBR) is higher (24.1) in rural areas as compared to urban areas (18.3). It has been also observed throughout the period 2004-2009, the age group 20-24 continued to have peak fertility rates in rural and urban areas, but both these indicators are lower in urban areas as compared to rural areas.

Chhattisgarh is a tribal dwellers state where age specific marital fertility rate is higher in the rural areas as compare to urban areas. According to family welfare statistics, 2011 report, general fertility rate is 104.7, total fertility rate is 3.2, gross reproductive rate is 1.6, general marital fertility rate is 141.4 and total marital fertility rate is 4.7 in rural areas which are higher than the GFR (66.0), TFR (2.0), GRR (0.9), GMFR (98.0) and TMFR (3.6) of urban areas respectively. The demographic scenario in the state is still characterized by a very high birth and death rates amongst tribals. With above background, there is a consensus agreement that the health status of the tribal population is very poor and worst and their pregnancy rate is affecting by the demographic transition and by the developmental processes going on in the country.

Hypothesis

Fertility rate is defined by the total live birth in between the fertile age group but pregnancy rate measures the actual parameters of having child (Child Birth) which is based on total live birth, total abortion and loss of foetus. By these measures it is easy to find out the trend of fertility capability in the age specified group of female. Except total live birth, abortion and loss of foetus can measure that the women are able to conceive baby but due to any reasons which are spreaded in their bio-sociological environment, developing antifertility role and leading sterility in the women group. To find out the measures of pregnancy we can explore the answer of the question that is, "*Does the tribal population want desire number of Child in certain age group and which are the major factors influencing their fertility and pregnancy rate?*" To solve this question, it is hypothesised that the pregnancy rate is absolutely related to the wealth and education level of the tribal population in both rural and urban areas.

Objective

Population Growth and Demographic transition is closely and evidently related. It has been noted that tribal population is declining steadily year by year in Chhattisgarh and tribal demographic set up has been changed by the migration from rural to urban areas. Our concerning point is pregnancy rate because after finding the pregnancy rate, regional socio-biological factors as well as economical factors which are playing an essential role to control the total live birth and marital fertility rate, can be draw mathematically. With above existing factor in the tribal regions, the main objective of the study is to find out the pregnancy rate by residence and find out its associate factors which are responsible of shaking movement of the rate of pregnancy.

Methodology

To justify the hypothesis and objective, problems and area related secondary literature review and primary data collection are the basic tools of this research paper whereas District Level Health Survey Report 3, Sample Registration Report (2009), Annual Health Survey Report and different published articles, news, Internet and books have been followed as review and primary data are gathered from field work by pre tested structured schedule with the help of interview and Focus Group Discussions. The field work was organised from 2st December, 2015 to 28th February, 2016 and the data are gathered from both rural and urban tribal areas along with only tribal

population who are residing in both rural and urban areas of the district is comprised. The married couples, who were eligible couple, are selected as samples in sampling frame. Education and Economic (E & E) are our key tools which have been used as the transitive factors of fertility and pregnancy rate. The Specific formulas are used to find out the rate of pregnancy and its associated measures which are given below:

Formula:

$$\text{Pregnancy rate} = \frac{(\text{Number of Births} + \text{Number of Abortions} + \text{Estimated Total Fetal Losses}) \times 1{,}000}{(\text{female Population 15-44 years of Age})}$$

Estimated Pregnancies = Number of Births + Number of Abortions + Estimated Total Fetal Losses

Estimated total fetal losses = 20 Percent of Births + 10 Percent of Abortions

$$\text{Abortion rate} = \frac{(\text{Number of Abortions}) \times 1{,}000}{(\text{Female Population Aged 15-44})}$$

Study Area

For the study purpose tribal district south Bastar Dantewada has been selected. It is the habitat of different type of tribal communities like Gond, Halba, Bhatra, Dorla, Gadaba, Muriya and Dhurwa etc. The Dantewada district is famous for its shrine and sacred place; *Maa Danteswari Temple*. The district is divided into urban and rural areas but the speciality of both areas is that the tribals, who migrated from rural to urban place in the district for livelihood or any other reason, are abundantly residing in the urban city. For this reason, tribal's socio-cultural life has been changed and this kind of changes with personal intension is known as introjections which fascinate the simple tribe from traditional life to urban culture and modernisation. Hence the data is gathered from rural area of Nerli and urban area of Bacheli.

Result and Analysis

Table 1 shows that the total married tribal population who are comprised as eligible couple i.e the women either they were pregnant or lactating mother. The tribal populations in both rural and urban areas are making different concentration and ratio within same socio-environmental and ecological surroundings. The Dantewada district is completely tribal district of the State but industralisation categoriesed it into rural and urban areas whereas the tribal communities are divided by their residing place. Here we are separately mentioned the man and woman population by residence (urban and rural) according to the fertile age group of women. In sampling frame, 90 couples from urban area (Bacheli) and 99 couples from rural areas (Nerli) had been comprised for the research purpose. The significant of the population is the tribal communities who are residing in urban area, are migrated from their real habitat of rural place. Hence they are not the original inhabitant of the urban areas.

Table 2 reveals that the total marital fertility rate by district, state and country level, which stated that the marital fertility is declining from 1997 to 2009 by 8.5 percent of declining rate. The data also reveals that the marital fertility rate is higher (4.5) in rural area than urban (4.2) but the rate of changing in marital fertility rate is higher in rural areas (8.2 >7.1) because migration from rural to urban area is responsible for lower fertility rate. Jaffe (1942) stated that people in urban areas are strengthening them by the way of well planned life of living to the greater desire to achieve this better standard in the future. These types of observations fed into the broader perspective of demographic transition theory, which posited both a reduction in mortality levels and a subsequent fertility decline as a result of a general process of development. Dantewada is highly industrialized area but traditionally it is the habitat of tribals; forest dweller people. Industralisation tends urbanisation and simple aboriginal people migrate from rural to urban area for livelihood. Data also shows that rural marital fertility rate is greater (5.0) than urban (3.9) marital fertility rate (SRS, 2009). Notestein (1945) provided a seminal analysis that reaffirmed the importance of urbanization within the framework of economic factors that are associated with fertility reduction. In his point of view, fertility was necessarily high in traditional rural, agricultural societies in order to provide needed labour and to offset high mortality.

Table 3 stated the rate of fertility with the basis of different indicators at state and district level of Chhattisgarh where the total marital fertility rate of Chhattisgarh is 4.5 and it is 4.7 in rural areas and 3.6 in urban areas. Akin like that in Dantewada, the total marital fertility is 0.4 point less than the state rate while in rural areas in the district; it is 0.2 point than the average rate of rural areas of the Chhattisgarh. It has been significantly observed that the TMFR in urban area is 0.4 point higher at the Chhattisgarh state rather than its Dantewada district. The GMFR of Chhattisgarh is 141.4 in rural areas and 95.6 in urban areas whereas in Dantewada it is 143.9 in rural areas and 95.6 in urban areas. When the GRR, GFR and CBR is compared between state and district level, it has been found that the GPR, GFR is higher in rural areas of Dantewada district as compare to the rural areas of Chhattisgarh state. In urban areas of Chhattisgarh shows, the GRR is 0.9, GFR is 66.0 and CBR is 20.2 where GRR is lower with 0.1 point, GFR is higher with 1.5 point and CBR is less than 3.5 point at district level respectively.

It has been found from table 4 that 42.63 percent married couple in urban areas and 57.34 percent in rural areas, were residing respectively. The monthly income status shows (rural: 42.66; urban: 4.41) that the large number of tribal population are come under low income groups along with rural tribals are facing illiteracy problem with 37.50 literacy rate in urban areas and only 9.56 percent literacy in rural tribal areas. When we observed the education status, it has been analysed that rural tribal are obtained only primary and middle level of education. It has been pertinently noted that no tribal people were attained higher secondary and graduation level education in rural areas in spite of various educational

Table 1: Total Tribal Population

Age Group	Bacheli (Urban)		Nerli (Rural)	
	Male	Female	Male	Female
15-20	-	11	17	19
20-25	21	13	12	18
25-30	15	19	19	16
30-35	13	13	23	23
35-40	14	10	15	20
40-45	27	24	33	23
Total	**90**	**90**	**119**	**119**

Table 2: Total Marital Fertility Rates by Residence

Place	Total			Rural			Urban		
	1997-99	2007-09	% Change	1997-99	2007-09	% Change	1997-99	2007-09	% Change
India	4.7	4.3	-8.5	4.9	4.5	-8.2	4.2	3.9	-7.1
Madhya Pradesh + Chhattisgarh	5.1	4.8	-5.9	5.3	5.0	-5.7	4.4	3.9	-11.4
Dantewada	-	2.5	-	-	2.5	-	-	2.0	-

Source: SRS, 2009 & AHS Report, 2011

Table 3: Status of Fertility Rate and Comparison by Residence

Measures	Place	Percentage by Residence (DLHS-3)			Gap		
		Total	Rural	Urban	Total	Rural	Urban
Total Marital Fertility Rate	Chhattisgarh	4.5	4.7	3.6	-0.4	+0.2	-0.4
	Dantewada	4.1	4.9	3.2			
General Marital Fertility Rate	Chhattisgarh	133.5	141.4	98.0	-13.7	+2.5	-3.6
	Dantewada	119.8	143.9	95.6			
Gross Reproduction Rate	Chhattisgarh	1.4	1.6	0.9	+0.1	+0.3	+0.1
	Dantewada	1.5	1.9	1.0			
General Fertility Rate	Chhattisgarh	97.0	104.7	66.0	-11.1	+2.6	-1.5
	Dantewada	85.9	107.3	64.5			
Crude Birth Rate	Chhattisgarh	23.5	24.4	20.2	+0.7	-0.1	+3.5
	Dantewada	24.2	24.3	23.7			

Source: DLHS-3

development programmes. However the literacy status and level of education is better amongst urban tribal people as compare to rural tribals in rural areas. Curjel (1920), Carr Sounders (1922) and Pearl (1938) carried out with a view to understanding the human fertility and pregnancy rate as well as mortality differentials of demographic parameters are highly correlated with biological, ecological, socio-economic and other socio-cultural factors. For example, it is an established fact that the age of marriage, education and wealth status, is inversely related to fertility rate, or that fertility rate is low in those groups belonging to the higher economic strata of the society (Nag, 1972; Mandelbaum, 1974; Mahadevan, 1974).

Analysis stated that the child bearing age is earlier in rural areas and it is 0.36 point higher in between newly married couple. At all the level of fertile age

Table 4: Wealth and Education Status of Married Couple (15-45 year age group)

Variables	Range	Wealth and Education Status				Gap
		Urban		Rural		
		No	%	No	%	
Number of Married Couple (*N=68*)	Newly Married (>1.5 year)	7	10.29	2	2.94	7.35
	1.5-4 year	9	13.23	10	14.70	-1.47
	4-6.5 year	9	13.23	12	17.64	-4.41
	6.5 - 10year	4	5.88	15	22.06	-16.18
	Total	29	42.63	39	57.34	-14.71
Monthly Income (*N=68*)	≥5000 Ru.	1	1.47	17	25.00	-23.53
	5001-10000	2	2.94	12	17.66	-14.72
	10001-15000	7	10.29	7	10.29	0.00
	15001≤	19	27.94	3	4.41	23.53
	Total	29	42.64	39	57.36	-14.72
Wealth Quintile (*N=68*)	Low	3	4.41	29	42.66	-38.25
	Middle	7	10.29	7	10.29	0.00
	High	19	27.94	3	4.41	23.53
	Total	29	42.64	39	57.36	-14.72
Literacy Status (*N=136*)	Literate	51	37.50	13	9.56	27.94
	Illiterate	7	5.15	65	47.79	-42.64
	Total	58	42.65	78	57.35	-14.70
Education Level (*N=136*)	Primary Education	1	1.96	7	53.84	-51.88
	Middle School	3	5.89	3	23.08	-17.19
	High School	8	15.68	3	23.08	-7.40
	H. S. School	21	41.18	-	-	41.18
	Graduate & above	18	35.29	-	-	35.29
	Total	51	100.00	13	100.00	

Table 5: Mean Number of Live Children by Residence

Variables	Range	Number of Children by Residence Mean		Gap
		Urban	Rural	
Number of Married Couple	Newly Married (>1.5 year)	0.14	0.50	-0.36
	1.5-4 year	0.33	2.10	-1.77
	4-6.5 year	0.67	2.25	-1.58
	6.5-10 year	1.5	2.20	-0.7
Monthly Income	Rs. ≥5000	1.00	2.35	-1.35
	Rs. 5001-10000	1.5	2.08	-0.58
	Rs. 10001-15000	0.57	1.42	-0.85
	Rs. 15001≤	0.42	2.33	-1.91
Wealth Quintile	Low	1.33	2.24	-0.91
	Middle	2.00	1.42	+0.58
	High	0.47	2.33	-1.86
Literacy Status	Literate	0.27	0.76	-0.49
	Illiterate	0.28	1.10	-0.82

Source: Primary Data

the child bearing capacity and frequency is higher than that of urban area in the same ethnic and ecological communities. Yi and Vaupel (1989) also found that birth rates in rural areas were higher and that child bearing started earlier there. Wealth quintile and monthly income is closely associated with the average number of children by residence. When the number of children is compared between rural and urban areas, it is 1.35 point high in rural areas, under Rs. 5000/- of monthly income group, as 0.58 point high in the group of Rs. 5001/- to Rs. 10000/-, along with 0.85 point and 1.91 point high in the group of Rs. 10001/- to Rs. 15000/- and more than Rs. 15001/- of income group respectively. It has been seen that at the all level of economy and income group, the number of children was higher in rural areas than the urban areas. The mean number of children is also higher amongst illiterate tribal population rather than literate tribal communities.

Table 6 reveals that the age specific fertility rate of both urban and rural areas of Dantewada, Chhattisgarh State where ASFR is higher in rural areas. Between 15 to 20 age group ASFR is 698.57 point high, it is 825.55 point high from 20 to 25 age group, between 25 to 30 it is 759.87, as well as from 30 to 35 age group it is 200.67 point, from 35 to 40 it is 150 point higher and between 40 to 45 it is 394.93 point high as compare to that of ASFR in urban areas. The data (table 7) shows, the TMFR is 8.4 in rural area while it is 2.3 in urban area. When the TMFR is compared to State level it has been found that the primary data of TMFR and TLB is lower than the State level and also it is lower than rural TMFR and TLB while the abortion rate and foetus losses is higher in urban areas. It is observed from table 8 that the estimated pregnancy, estimated total foetus loss are lower in urban areas while abortion rate is higher. When the pregnancy rate is compared between rural and urban areas, it has been analyzed that the PR in rural area is higher (1079.09) as compare to urban pregnancy rate (248.67). The PR is 830.42 point lower in urban area.

Correlation between Education, Wealth Quintile and Pregnancy Rate

It has been stated in table 9 that the total live birth in urban areas is very low while the loss of foetus and abortion rate is higher in low income group (Rs. ≥5000/-). The total live birth is 28 point less than the TLB of rural areas whereas abortion rate is 52.06 point high in urban area along with the loss of foetus is also 10 point high in that area in same income group. Hence, the high abortion rate and loss of foetus had been seen in low wealth quintile in urban population while abortion rate and loss of foetus were high in the middle wealth quintile category in rural areas. It is positive result of our research that the abortion rate and loss of foetus both are comparatively

Table 6: Age Specific Fertility Rate (per 1000)

Age Group	Urban	Rural	Gap
15-20	90.90	789.47	-698.57
20-25	230.76	1055.55	-825.55
25-30	52.63	812.50	-759.87
30-35	538.46	739.13	-200.67
35-40	200.0	350.00	-150.00
40-45	83.33	478.26	-394.93

Source: Primary Data

Table 7: Comparison between Measures of Pregnancy Rate by Residence

Attributes	Primary Data			2012		
	Urban	Rural	Gap	Urban	Rural	Gap
Total Marital Fertility Rate	2.3	8.4	-6.15	3.9	5.2	-1.3
Total Live Birth	55.2	82.8	-27.6	81.7	60.5	21.2
Abortion Rate	29	17	+12	NE	NE	-
Loss of Foetus	17	7	+10	NE	NE	-

Source: Primary Data and mospi.nic.in/Mospi_New/upload/man_and.../Chapter%202.pdfý**NE* :** Not Estimated

Table 8: Comparison of Pregnancy Rate by Residence

Attributes	Urban	Rural	Gap
Estimated Pregnancy	62	106	-44
Estimated Total Foetus Loss	6.1	18.1	-12
Abortion Rate	322.22	171.71	+150.51
Pregnancy Rate	248.67	1079.09	-830.42

low in high wealth quintile group in both rural and urban areas as compare to low and middle economy group. Literacy always create awareness, by this sense our analysis resulted that the abortion rate and loss of foetus were lower amongst literate people of urban (141.76) and rural areas (98.55) as compared to illiterate people of both residential areas (urban: 180.46 and rural: 73.16) but it has been significant of the study is both abortion with 43.21 point and loss of foetus with 1 point high in rate in urban population rather than rural population.

Recommendation

Health improvement especially towards pregnancy and marital fertility associated problems,

Table 9: Correlation between Wealth and Pregnancy Rate

Attributes	Category	Measures of Pregnancy Rate in Urban Area			Measures of Pregnancy Rate in Rural Area			Gap		
		Total Live Birth	Abortion Rate	Loss of Foetus	Total Live Birth	Abortion Rate	Loss of Foetus	Total Live Birth	Abortion Rate	Loss of Foetus
Monthly Income (in Rs.)	≥5000	1	112.39	13	29	60.33	3	-28	52.06	+10
	5001-10000	5	104.74	2	31	68.72	2	-25	36.02	0
	10001-15000	7	51.63	1	15	23.43	1	-8	28.20	0
	15001≤	3	53.46	1	7	19.23	1	-4	34.23	0
Wealth Quintile	Low	1	136.08	13	29	53.27	3	-28	82.81	+10
	Middle	12	96.48	3	46	90.71	2	-34	5.77	+1
	High	3	89.68	1	7	27.73	2	-4	61.95	-1
Education Status	Literate	11	141.76	4	19	98.55	3	8	43.21	+1
	Illiterate	5	180.46	13	63	73.16	4	-58	107.30	+9

Source: Primary Data

the health of tribal peoples cannot be achieved through clinics and medications alone: the major factors causing their poor heath are social, economic, political and legal by transition. So, a local action is urgently needed to enable indigenous peoples to reconnect with their socio-cultural life, rebuild their shattered lives and gain control over their future health. Thus there is a need of assessment by anthropologist and medical practitioners together to find out the pregnancy and fertility related socio-physical factors for their betterment.

Conclusion

The findings of our study are the evident about the tribal population who had been resided in urban areas had lower pregnancy rate (242.67) and also low fertility rate (2.3) with higher abortion (322.22) and higher rate of the loss of foetus (6.1) which plays an essential role of declining in their population in Chhattisgarh. Tribal peoples who have suffered from forced settlement, assimilation policies and other forms of marginalization and removal from ancestral lands almost always experience a dramatic decline in health and wellbeing. Dislocation from their land is always coupled with rising illness. Economic and social changes such as industrialization, urbanization and increased education accelerated a decline in mortality. Subsequently, the declining economic value and the rising cost of children in urban life and the desire of parents to promote better health and education for their children prompted fertility decline in developed countries and this could be expected to soon reduce fertility in developing countries as well. In a similar vein, Goldstein *et al.* (1997) compared fertility rates of migrants, non-migrants, temporary migrants and urbanites in the country and found that migrant fertility is systematically lower.

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