Caste Variations in Reproductive Health Status of Women: A Study of Three Eastern States

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Based on the National Family Health Survey (NFHS)-1 (1992-93) data, this paper analyses the reproductive health status of women across various caste groups in three eastern states of India–Bihar, Orissa and West Bengal. A Reproductive Health Index (RHI) is computed from a series of reproductive health indicators (contraceptive use, birth order, birth interval, antenatal care and skilled assistance at delivery) for the caste groups (based on H.H. Risley's classification). Multivariate regression analysis is carried out to understand the impact of demographic and socioeconomic characteristics on reproductive health. It is observed that RHI is highest in West Bengal, followed by Orissa and Bihar. Caste variations in the RHI are discernible in all three states, with the upper-caste women showing higher reproductive health status as compared with the lower-caste women.

Introduction

In India, caste plays a major role in the life of her people, influencing their socioeconomic activities, and in turn regulating their health status. S.N.M. Kopparty (1991) shows the variation in the utilisation of health resources among different caste groups and its impact on their health status. Similarly, Thomas Matthai (1996) states that, because of differential literacy rate and economic status between the scheduled castes and non-scheduled castes, there is also a difference in their health status. In caste-based Indian society, women of the lower castes are the worst hit, as they suffer from double discrimination: First, in the patriarchal society women are discriminated against men, as they have to bear the burden of household work demanding much time and energy without adequate compensatory diet. And second, a lower-caste woman, owing to her poor socioeconomic status, also experiences social deprivation. Both these factors are detrimental to the health status of women, especially their reproductive health.

Given that caste is important in the life of an individual, in this paper we examine the caste variations in the reproductive health of women. There are as yet no studies on the reproductive health status among different caste

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groups. The National Family Health Survey (NFHS)-1 (1992-93) gives us an opportunity to conduct such a study, as it has compiled data on caste (International Institute of Population Sciences 1994). Though a second round of NFHS also collected similar data in 1997-98 (International Institute of Population Sciences 2000), we have not considered that data in this study for two reasons: First, when the NFHS-2 was conducted, the state of Bihar had been divided into Bihar and Jharkhand. And second, since the NFHS is a sample survey, and not a longitudinal survey, comparing the two sets of data would not throw much light on the actual situation.

Reproductive Health in India

Women and child health received a major impetus after the International Conference on Population and Development (ICPD) in Cairo (1994), which recommended that the participant countries should implement unified programmes for Reproductive and Child Health (RCH), as it was considered essential to human welfare and development. In the ICPD, reproductive health was defined as the state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes (ICPD Programme of Action, paragraph 7.2). India, being a signatory to the ICPD, strongly supports the Programme of Action and, since the 1990s, the Government of India has introduced the RCH Approach. This approach includes the ability (of couples) to reproduce and regulate their fertility. Women can go through pregnancy and childbirth safely, the outcome of pregnancy is successful as for maternal and infant survival and well-being, and couples can have sexual relations free of fear of pregnancy and of contracting diseases.

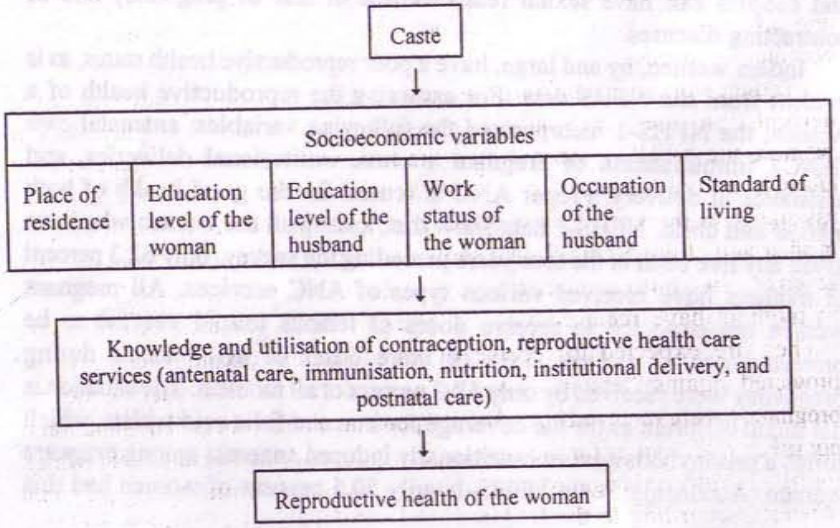
Indian women, by and large, have a poor reproductive health status, as is evident from the NFHS data. For assessing the reproductive health of a woman, the NFHS-1 incorporated the following variables: antenatal care (ANC), immunisation of pregnant women, institutional deliveries, and assistance at delivery. Proper ANC is crucial for the good health of both mother and child. NFHS-1 data show that, among all the women who have given any live birth in the four years preceding the survey, only 62.3 percent of mothers have received various types of ANC services. All pregnant women are expected to receive doses of tetanus toxoid vaccine to be protected against tetanus. Two or more doses of this vaccine during pregnancy were received by only 53.8 percent of all mothers. The situation is not much different as for the coverage for iron and folic acid tablets, which forms a prophylaxis against nutritionally induced anaemia among pregnant women. According to the NFHS-1, only 50.5 percent of women had this

coverage. Another important thrust of maternal health services is the encouragement of institutional deliveries attended by trained health professionals to ensure better health for the mother and the child. The proportion of institutional births (25.6 percent) is very low in India.

Both international and national organisations–such as the World Health Organisation (WHO), United Nations Population Fund (UNFPA), Population Association International (PAI) and Population Foundation of India (PFI)–have attempted to measure the reproductive health of women with the help of certain sets of indicators. The most recent index of reproductive health has been computed by PAI (2001). It puts India in moderate rank, with a score of 44.8 on a scale ranging from 0 to 100.

However, despite government programmes and intervention, the reproductive health status of women in India presents a sorry scenario, mainly because of the socioeconomic forces that influence reproductive health. Caste is one social institution in India whose impact on the life of her people cannot be exaggerated. To understand the influence of caste on reproductive health of women a schematic framework is developed. From Figure 1 it follows that caste influences socioeconomic variables that include educational status, work status and standard of living. These variables, in turn, have an impact on knowledge and utilisation of contraception and reproductive health care services, ultimately affecting the reproductive health of women.

Figure 1: Schematic framework for analysing the influence of caste on reproductive health of women



The Study

The study area is restricted to the eastern region of India, comprising the states of Bihar (that is, former Bihar, including Jharkhand), Orissa and West Bengal. Obviously, the caste structure is not uniform across the country, and there are significant regional variations. We use a modified version of H.H. Risley's (1881) classification (see Appendix 1) as his survey was undertaken when the geographical area comprising these three states was administratively united. In these three states the caste structure is more or less similar due to their historical moorings. Moreover, the authors' acquaintance with the area facilitated better understanding of the behaviour of various caste groups.

The three main objectives of the study are:

1. To analyse the variations in the reproductive health status of currently married women belonging to different caste groups in the states of Bihar, Orissa and West Bengal.
2. To compute a Reproductive Health Index (RHI), for the various castes in these three states.
3. To examine the influence of social and economic factors on the reproductive health of women, with special reference to their caste membership.

The data used in this study were obtained from the NFHS-1 (1992-93) conducted between April 1992 and September 1993. The Survey covered more than 89,000 ever-married women in the age-group 13-49 in twenty-four states and the union territory of Delhi; it was, thus, the largest of its kind in the subcontinent. It provides national- and state-level estimates of fertility, infant and child mortality, family planning and maternal and child health. In this study, we have drawn data from the following sections of the Women's Questionnaire used in the Survey: the respondent's background, reproduction, contraception, pregnancy and breast feeding, husband's background, and women's work. For analysis, only those women who have given any live birth during the four years preceding the survey (1988-91) are considered, and only the recent birth is taken into account. Since the main purpose of the study is to analyse the impact of caste on reproductive health, only the Hindu women falling in this category are considered.

The reproductive health indicators used in the present study are as follows: contraceptive usage (any method), birth order, birth interval, antenatal care (any type), status of immunisation of women during pregnancy (doses of Tetanus toxoid vaccination), obtaining iron and folic

acid tablets, place of delivery, assistance during delivery, weight of the child at birth.[1]

Caste Variations in Reproductive Health Indicators

Table 1 presents caste variations in the reproductive health indicators. 'Use of contraceptives' is an important indicator of reproductive health. In Bihar, only 55.7 percent of the couples use contraceptives, and there exist castewise variations: among the High Caste 73 percent of the couples use contraceptives, followed by the Highest Caste (62.2 percent). The rural-urban difference in contraceptive use is large, and it is more so in case of the upper castes and the Intermediate Caste. The high rural-urban disparity among the upper castes is because, unlike in urban areas, in rural areas there are some taboos attached to the use of contraceptives, and these taboos are more observed by the upper castes. Also, in rural areas, the joint family system is still prevalent among the upper castes, which are land-owning communities. The joint family norms regulate the reproductive behaviour of the couples and hence affect the use of contraceptives. In urban areas, due to the prevalence of nuclear households, even among the upper castes such controls do not operate and the couples are relatively free to exercise their reproductive choices. In the case of the lower castes that are generally engaged in agricultural labour, the joint family system does not exist even in rural areas. Hence, their reproductive behaviour does not change much with place of residence. Apart from this, the upper castes have a higher literacy rate in urban areas as compared with the lower castes, and this increases their awareness about the various family-planning methods, thus influencing the use of contraceptives.

Orissa also presents a similar situation where 59.9 percent of the couples presently use contraceptives. The highest proportion of contraceptive use is among the High Caste (79.2 percent), followed by the Highest Caste (72.5 percent), while less than 60 percent of the couples among the Intermediate, Lowest and Low Castes use contraceptives. Striking differences are also noticed between rural and urban areas in the use of contraceptives. In West Bengal, 66 percent of the couples use contraceptives, and, unlike in Bihar and Orissa, there is not much caste variation. In fact, the proportion of couples using contraceptives is the same for the High Caste and the Low Caste (that is, 69 percent). There is also not much rural-urban difference among these caste groups. In West Bengal, the marginal difference in the use of contraceptives by various castes is due to the caste structure being not as rigid as in Bihar and Orissa. One reason for this is that the reform movements in Bengal had liberalised the caste system. Moreover, the relatively

Table 1: Caste-Group and Reproductive Health Indicators - Eastern Region of India, 1992-93

State/Caste-Group	Presently using contraceptives			Birth order (<4)			Birth interval (>24 months)			Availed ANC			Skilled assistance at birth		
	R	U	C	R	U	C	R	U	C	R	U	C	R	U	C
Bihar															
Highest	59.9	70.7	62.2	60.9	72.0	63.2	40.4	42.7	40.9	43.0	70.7	48.8	21.2	53.7	28.0
High	65.7	85.2	73.0	61.8	82.0	69.3	41.2	57.4	47.2	53.9	91.8	68.1	37.3	80.3	53.4
Intermediate	47.5	81.1	53.3	62.1	59.8	61.7	36.1	41.0	36.9	30.4	64.8	36.4	15.9	54.9	22.6
Low	49.9	62.1	51.6	58.1	74.2	60.3	35.1	47.0	36.7	28.6	78.8	35.5	09.2	59.1	16.1
Lowest	51.0	55.1	51.7	58.3	55.1	57.7	39.4	44.9	40.4	34.1	46.2	36.3	13.2	37.2	17.6
Total	52.0	71.6	55.7	60.2	67.0	61.4	37.6	45.5	39.1	34.3	68.7	40.8	15.9	55.7	23.4
Orissa															
Highest	68.3	78.6	72.5	75.0	90.5	81.4	50.0	47.6	49.0	71.3	90.5	88.3	38.3	69.0	51.0
High	77.8	81.4	79.2	66.7	93.0	77.4	50.8	44.2	48.1	74.6	88.4	80.2	33.3	55.8	42.5
Intermediate	55.8	66.7	58.6	66.5	66.7	66.5	52.4	61.6	54.7	66.0	81.9	70.1	19.4	52.8	28.1
Low	52.3	62.9	54.8	68.5	67.7	68.3	63.2	47.6	59.5	62.2	83.9	67.4	15.7	50.0	23.9
Lowest	54.4	67.7	57.5	67.9	61.5	66.4	60.0	63.1	60.7	60.0	72.3	62.9	13.5	47.7	21.4
Total	56.3	68.8	59.7	68.2	72.3	69.3	58.4	52.9	56.9	64.4	82.7	69.3	18.7	53.2	28.0
West Bengal															
Highest	71.0	69.0	70.3	80.4	79.3	80.0	50.5	37.9	46.1	83.2	89.7	85.5	39.3	89.7	57.0
High	68.9	69.0	68.9	77.0	93.1	82.2	41.0	48.3	43.3	72.1	96.6	80.0	45.9	89.7	60.0
Intermediate	63.5	68.6	64.4	75.8	76.5	75.9	40.6	52.9	43.0	79.0	86.3	80.4	32.9	80.4	41.9
Low	68.9	66.7	68.6	76.8	70.8	76.0	49.0	37.5	47.4	78.1	91.7	80.0	31.1	75.0	37.1
Lowest	62.6	54.8	61.5	69.2	61.3	68.1	47.2	38.7	46.0	74.9	74.2	74.8	23.6	41.9	26.1
Total	65.9	66.3	66.0	75.0	76.7	75.4	45.6	43.5	45.1	77.8	87.6	79.8	32.1	77.7	41.6

Note: Figures refer to percentages. R = Rural, U = Urban, C = Combined

higher literacy rate in rural areas of West Bengal has fostered a more liberal outlook, which positively influences the reproductive behaviour.

The higher the birth order of a child, the more adverse the effect it has on the reproductive health of the mother, as it means repeated number of pregnancies. In Bihar, 38.6 percent of the live births are higher order births, that is, birth order of equal to or more than four. With a higher proportion of their members using contraceptives, the upper castes have low proportions of high order births. The rural-urban difference in birth order among the caste groups is high, except for the Lowest and the Intermediate castes. This is obviously the result of the prevalence of joint family system in rural areas which encourages couples to have more number of children. Moreover, in rural areas, where the standard of living is not very high and the economy is labour-based, children are viewed as an economic asset, and more so among the lower castes, who are also generally the low income-groups. On the other hand, in urban areas, the cost of bringing up a child is relatively high. This also is responsible for the differential birth order between the rural and urban areas.

In Orissa, 30.7 percent of the births are of higher order; a large difference in birth order is noticed among the various castes in this state. As in Bihar, the proportion of higher order births is much less in urban areas and irrespective of caste affiliation. In West Bengal, all the castes have fairly small proportion of higher order births, ranging between 20 percent (Highest Caste) and 31.9 percent (Lowest Caste). Since there is not much variation in the pattern of contraceptive use between the rural and urban areas in West Bengal, it gets reflected in the birth-order pattern.

Apart from birth order, it is also the interval between two births that has a bearing on the reproductive health of a woman. A little over 39 percent of all live births in Bihar have a birth interval of more than or equal to twenty-four months, without much caste variation. In Orissa, 56.9 percent of the live births have a birth interval of equal to or more than twenty-four months. The proportion of births with a higher interval is almost 60 percent among the lower castes, while it is only 48 percent among the upper castes. Since, in West Bengal, only 25 percent of the births are of higher order, and among the lower order births 32 percent are of first order, the proportion of births with large intervals is quite low (45.1 percent). This applies to all castes.

Antenatal care (ANC) is one of the four most important pillars of safe motherhood along with family planning, safe delivery and essential obstetric care (WHO 1996). In the study region, there is a large difference in the proportion of women receiving ANC: it is only 40.8 percent in Bihar, while it is 79.8 percent in West Bengal. In Bihar, the proportion of lower-caste women receiving ANC is much less (35.5 percent) compared with their upper-caste counterparts (68.1 percent). This difference is accentuated in

rural areas, where only 34.3 percent of the women receive any type of ANC–either visited by a health worker or going to a clinic. However, the position of the Lowest Caste does not improve much with place of residence: it is 34.1 percent in rural areas and 46.2 percent in urban areas.

Lack of accessibility to ANC services is a major cause for this. Accessibility refers to both physical accessibility (in terms of distance travelled) and accessibility in terms of cost incurred to avail such services. Long distance and inadequate public transportation facility are common constraints to health-care utilisation, and this is more so in rural areas (Thaddeus and Maine 1994). This applies to rural Bihar too, where the availability of medical facilities does not meet the requirements of the people, and the transport infrastructure is underdeveloped. Also, in the rural areas of the states under study, the residential pattern follows caste hierarchy: the houses of the upper castes are located in the centre of the village, and those of the other castes are located farther away from them according to their ritual and occupational status. As a result, the lower castes are usually settled on the periphery of the village.

Moreover, in Bihar, as is well known, the family-planning programme is not a success story, and the health workers visiting homes is also rare. Also, as elsewhere in rural India, land continues to be the most important source of income, and the upper castes are usually the land-owning communities (Chakravarti 2001). This contributes to the improvement in the standard of living of the upper castes in rural areas. The lower castes, on the other hand, are also down in the hierarchy as for their economic status and they cannot afford the transport-cost for availing the ANC services if they are located at a far off place. Even the private clinics, due to their exorbitant charges, are out of their reach. All these lead to a drop in the percentage of lower-caste women receiving ANC. On the contrary, in urban areas, physical inaccessibility is not a problem, as there are many clinics and the transport system is also better. Moreover, urban areas are free from caste-based settlement patterns, which fact too acts facilitates lower-caste women receiving ANC. Lower standard of living and lack of knowledge among the urban lower castes may be responsible for less proportion of their women availing ANC.

Similar caste variations are noticed in Orissa, too. Among the upper castes more than 80 percent receive ANC, while among the lower castes the figure is below 70 percent. The ANC coverage is higher in West Bengal, without much rural (77.8 percent) and urban (87.6 percent) differentiation. There is also not much caste variation in availing the ANC services.

Apart from the ANC services, a birth attended by skilled health professionals assures safe delivery and reduces risk to the life of the mother and the child. In Bihar, skilled health professionals attend only 23.4 percent of the births. The situation is grimmer for the lower castes, as less than 20 percent

of their births are assisted by skilled health professionals. Only among the High Caste a majority (53.4 percent) of the births are assisted by skilled health professionals. Rural areas are worse off, as the figure for no caste exceeds 40 percent. This is due to the traditional outlook prevalent in rural societies, where most of the births still take place at home and are assisted by *dais* (traditional midwives) who are not very skilled and follow traditional practices, some of which are unhygienic. Even in urban areas, the situation is not satisfactory for the lower castes: skilled health professionals assist only 37.2 percent of the births among the Lowest Caste, but the corresponding percentage is 80.3 for the High Caste. It is perhaps the inaccessibility due to high cost that influences this variation in urban areas. The government hospitals lack adequate infrastructures in terms of both equipment and personnel, while the poor lower-caste people cannot afford the services of private hospitals.

In Orissa too, skilled health professionals assist a very low proportion of (28 percent) births, and a large caste variation is noticed. The upper castes have higher proportion of births assisted by skilled professionals (51 percent). Skilled assistance at delivery is also not very satisfactory in West Bengal (41.6 percent), and caste variations exist: 60 percent of the births among the High Caste are assisted by skilled professionals, in contrast to 26.1 percent, among the Lowest Caste.

To summarise, the caste differences are the highest in Bihar, followed by Orissa and West Bengal. In all the three states, the upper castes are in a better position in comparison with the lower castes. The Intermediate Caste shares more characteristics of the lower castes than that of the upper castes. The place of residence has a great influence on the reproductive health status of women as is evident from the striking rural-urban differences in all the states for all the reproductive health indicators, with urban areas presenting a better picture.

Reproductive Health Index

For a comprehensive understanding of caste differences in reproductive health status of women, based on the above discussed indicators, a Reproductive Health Index (RHI) has been computed for the various caste groups (see Appendix 2). The range of this index varies between '0' and '5'. The higher the value of the index, the better the reproductive health status of the women. Based on the mean value of the index, women are grouped under two broad categories of reproductive health status: High RHI and Low RHI.

In Bihar, as most of the reproductive health indicators for women are poor, only 39.1 percent of them show High RHI (see Table 2a). Caste variation is also large: 64.4 percent of the High Caste women have High RHI, and

only 36.5 percent of the Lowest Caste women have High RHI. Though in urban areas 65.3 percent of women have High RHI, this percentage drops to 33 in rural areas.

Table 2a: Caste-group and RHI - Bihar, 1992-93

Caste Groups	Low RHI (%)			High RHI (%)		
	Rural	Urban	Combined	Rural	Urban	Combined
Highest	57.65	34.15	52.70	42.35	65.85	47.30
High	50.00	11.48	35.58	50.00	88.52	64.42
Intermediate	70.43	35.25	64.36	29.57	64.75	35.64
Low	74.09	34.85	68.68	25.91	65.15	31.32
Lowest	65.92	52.56	63.51	34.08	47.44	36.49
Total	66.97	34.72	60.89	33.03	65.28	39.10

The proportion of women having High RHI is 57.2 percent in Orissa (see Table 2b), with the upper castes holding a much higher position in comparison with the lower castes. Orissa has a sharp rural-urban difference as regards reproductive health status of women. Irrespective of the place of residence, the upper castes have better index in Orissa.

The reproductive health status of women in West Bengal is the best as compared with that of Bihar and Orissa: 67.4 percent of women in this state have High RHI (see Table 2c). The difference among the highest (Highest Caste = 77 percent) and the lowest values (Lowest Caste = 58 percent) is only 19 percentage points.

Correlation among Predictor Variables

A correlation matrix has been constructed to understand the relationship among the predictor variables. For correlation, education of women has been re-coded as '0 = illiterate' and '1 = literate', and husband's occupation has been coded as '0 = agriculture and other primary activities' and '1 = others'. The other codes remain unchanged. The results of correlation are presented statewise. Only those results for which the 'r' value is more than 0.2 and that are statistically significant are discussed here. But, to highlight the influence of caste, all correlation results that are statistically significant against caste are discussed.

Table 2b: Caste-group and RHI - Orissa, 1992-93

Caste Groups	Low RHI (%)			High RHI (%)		
	Rural	Urban	Combined	Rural	Urban	Combined
Highest	31.67	7.14	21.57	68.33	92.86	78.43
High	33.33	6.98	22.64	66.67	93.02	77.36
Intermediate	44.17	29.17	40.29	55.83	70.83	59.71
Low	54.82	29.03	48.65	45.18	70.97	51.35
Lowest	53.95	36.92	50.00	46.05	63.08	50.00
Total	49.36	25.14	42.83	50.64	74.86	57.17

Table 2c: Caste-group and RHI - West Bengal, 1992-93

Caste Groups	Low RHI (%)			High RHI (%)		
	Rural	Urban	Combined	Rural	Urban	Combined
Highest	29.0	12.1	23.0	71.0	87.9	77.0
High	34.4	6.9	25.6	65.6	93.1	74.4
Intermediate	35.2	21.6	32.6	64.8	78.4	67.4
Low	34.4	25.0	33.1	65.6	75.0	66.9
Lowest	42.1	41.1	42.0	57.9	58.1	58.0
Total	35.9	20.2	32.6	64.1	79.8	67.4

Bihar

The correlation matrix for predictor variables for Bihar is presented in Table 3a. Age of the woman and experience of child-loss has a positive correlation (r = 0.27). It means that experience of child-loss is higher for women of older age-groups as compared with women of younger age-group. Caste also shows a negative correlation with child-loss (r = -0.07), as more women among the lower castes experience child-loss. This is because of the low

Table 3a: Correlation coefficients among predictor variables – Bihar, 1992-93

	Age	Child-loss	Residence	Caste	Woman's education	Woman's work status	Husband's occupation	Exposure to the mass media	Spousal commu-nication
Age	1								
Child-loss	0.2703**	1							
Residence	0.0040	-0.1024**	1						
Caste	0.0478*	-0.0678**	0.0699**	1					
Woman's education	-0.0899**	-0.1719**	0.3197**	0.2282**	1				
Woman's work status	0.0843**	0.1386**	-0.1990**	-0.1579**	-0.2721**	1			
Husband's occupation	0.0642**	-0.1020**	0.3377**	0.1367**	0.3546**	-0.2203**	1		
Exposure to the mass media	-0.0570**	-0.1320**	0.3371**	0.1415**	0.4860**	-0.2451**	0.3304**	1	
Spousal commu-nication	0.0137	-0.0670**	0.1213**	0.0872**	0.2202**	-0.0949**	0.0995**	0.1622**	1

Note: * Significant at 5 percent level of confidence; ** Significant at 1 percent level of confidence

literacy rate among the lower castes coupled with lower standard of living, hindering awareness of and accessibility to medical facilities.

Caste and place of residence are positively correlated (r = 0.07), which means that upper caste women usually live in urban areas. Place of residence has a positive correlation with education of women (r = 0.32). As expected, women in urban areas are more literate than those in rural areas. The negative correlation between work status of the woman and place of residence (r = -0.20) suggests that women in rural areas are engaged in work. In rural areas, due to the agrarian economy, which is labour intensive, even the womenfolk join hands with the male members of the family in the field, and this raises the work-participation rate among rural women. Since most of the men are engaged in agriculture in rural areas, there exists a positive correlation between place of residence and occupation of the husband (r = 0.34). Exposure to the mass media has a positive correlation with place of residence (r = 0.34), that is, women in urban areas are relatively better exposed to the mass media than those in rural areas.

There is a positive correlation between caste and the following variables: education of the woman (r = 0.23), husband's occupation (r = 0.14) and exposure to the mass media (r = 0.14). These correlations indicate that the literate women are from the upper castes and their husbands are engaged mainly in non-primary activities. These women are also better exposed to the mass media. Work status of the woman and caste are negatively correlated (r = -0.16).

Education of the woman is negatively correlated with her work status (r = -0.27), but is positively correlated with husband's occupation (r = 0.35). It follows from the results that illiterate women are generally working and their husbands are engaged in either agriculture or other primary activities. Exposure to the mass media (r = 0.49) and spousal communication (r = 0.22) show a positive correlation with education of the woman, as exposure to the mass media is high among literate women and this increases communication among the couples.

A negative correlation is observed between work status of the woman and husband's occupation (r = -0.22), which means that if husbands are engaged in agriculture or other primary activities then the work-participation rate among their wives is also high. Such a situation is perhaps explained by the labour-intensive nature of primary activities, and the family being the main source of labour for them. Work status of the woman is negatively correlated with exposure to the mass media (r = -0.24) because more of the working women are settled in rural areas, where exposure to the mass media is limited, especially so in Bihar, where electricity supply is yet to reach all villages and the electronic media are noticeably absent. Also, owing to the low literacy rate, the print media is not widespread either. For those women

whose husbands are engaged in agriculture there is less exposure to the mass media (r = 0.33).

Orissa

Table 3b presents the correlation coefficients for predictor variables in Orissa. It is seen that age of the woman has a positive correlation with experience of child-loss (r = 0.24), suggesting that, as in Bihar, the experience of child-loss for women in older age-groups is higher. There is a positive correlation between caste and place of residence (r = 0.12). Place of residence also has a positive correlation with husband's occupation (r = 0.32) and exposure to mass media (r=0.23). Thus, women in urban areas, with their husbands mainly engaged in non-agricultural activities, are also better exposed to the mass media.

Caste has a positive correlation with education of the woman (r = 0.26), as in Bihar, indicating that more women of lower castes are illiterate than those of upper castes. A negative correlation, though small, is observed between caste and work status of the woman (r = -0.07). As a corollary, we find a positive correlation between caste and husband's occupation (r = 0.22), showing that lower-caste males are engaged in agricultural activities. Moreover, there is a positive correlation between caste and exposure to the mass media (r = 0.21). Hence, increasing status along the caste hierarchy leads to a decrease in exposure to the mass media.

Education of the woman shows a positive correlation with husband's occupation (r = 0.35) and exposure to the mass media (r = 0.43): husbands of literate women pursue mainly non-primary occupations, and these women are more exposed to the mass media. Husband's occupation, however, has a positive correlation with exposure to the mass media (r = 0.28). This shows that women are better exposed to the mass media if their husbands are not engaged in agriculture or other primary activities. A positive correlation is also noticed between exposure to the mass media and spousal communication (r = 0.22), that is, spousal communication increases with an increase in exposure to the mass media.

West Bengal

Table 3c presents the correlation coefficients for predictor variables in West Bengal. Age of the woman shows a positive correlation with experience of child-loss (r = 0.24), like in Bihar and Orissa. In West Bengal, caste and child-loss are negatively correlated (r = -0.08), indicating that experience of child-loss is common among lower-caste women. A positive correlation between place of residence and husband's occupation (r = 0.36) means that

Table 3b: Correlation coefficients among predictor variables - Orissa, 1992-93

	Age	Child-loss	Residence	Caste	Woman's education	Woman's work status	Husband's occupation	Exposure to the mass media	Spousal communication
Age	1								
Child-loss	0.2405**	1							
Residence	-0.0086	-0.1082**	1						
Caste	-0.0178	-0.0466	0.1222**	1					
Woman's education	-0.0225	-0.1277**	0.1433**	0.2573**	1				
Woman's work status	0.0237	0.0655*	-0.0366	-0.0678*	-0.1633**	1			
Husband's occupation	0.0133	-0.1023**	0.3223**	0.2207**	0.3517**	-0.1118**	1		
Exposure to the mass media	-0.0250	-0.1153**	0.2319**	0.2103**	0.4276**	-0.1337**	0.2804**	1	
Spousal communication	0.0546	-0.0341	0.0884**	0.0519*	0.1755**	-0.0100**	0.1576**	0.2165**	1

Note: * Significant at 5 percent level of confidence; ** Significant at 1 percent level of confidence

Table 3c: Correlation coefficients among predictor variables - West Bengal, 1992-93

	Age	Child-loss	Residence	Caste	Woman's education	Woman's work status	Husband's occupation	Exposure to the mass media	Spousal communication
Age	1								
Child-loss	0.2397**	1							
Residence	0.0903**	-0.0488	1						
Caste	0.0194	-0.0785*	0.1957**	1					
Woman's education	-0.0878**	-0.1866**	0.1772**	0.2094**	1				
Woman's work status	0.1513**	0.1094**	-0.0747*	-0.0662*	-0.2454**	1			
Husband's occupation	0.0358	-0.0778*	0.3609**	0.1538**	0.3030**	-0.1537**	1		
Exposure to the mass media	-0.0451	-0.1458**	0.2156**	0.1600**	0.3606**	-0.0664**	0.1802**	1	
Spousal communication	-0.0221	-0.0637	-0.0098	0.0207	0.1289**	-0.0410	0.0416	0.1536**	1

Note: * Significant at 5 percent level of confidence; ** Significant at 1 percent level of confidence

in rural areas males are involved in agriculture or other primary activities. In urban areas women are better exposed to the mass media, and this is also evident from the positive correlation between these two variables (r = 0.21).

Multivariate Analysis

The logistic regression analysis (see Table 4) represents the influence of demographic and socioeconomic conditions on RHI. The results for the eastern region of India show that all the predictor variables affect the reproductive health of women, as the odds-ratio is statistically significant. When other variables are controlled, caste is observed to be an important variable influencing reproductive health of women: High Caste women are 1.8 times more likely to have High RHI as compared with the lower-caste women. This is because the upper-caste women enjoy better socioeconomic status that influences their reproductive choices and reproductive behaviour, thereby improving their reproductive health.

Age of the woman has an inverse relation with reproductive health: with an increase in age there is a decrease in the reproductive health status of women. Even experience of child-loss influences RHI. Women who have experienced child-loss are 39 percent less likely to have High RHI. Women's educational level and exposure to the mass media are important variables that exert a positive influence on reproductive health. Women exposed to the mass media are more informed and aware about various measures that affect reproductive health. However, women who have not discussed children with their husbands are less likely to have High RHI. Place of residence and husband's occupation are two other variables influencing RHI positively. The likelihood of High RHI is more among women who are settled in urban areas. Similarly, women whose husbands are not engaged in agriculture are more likely to have High RHI. On the other hand, work status of the woman shows an inverse relation with her reproductive health status. This is mainly because of the nature of women's job, which is mainly agricultural labour.

Discussion

This study highlights the impact of caste on reproductive health of women in the eastern states of Bihar, Orissa and West Bengal. It does not emphasise the overall status of the health-care system in these three states, as we are more concerned with the determinants of reproductive health of women at the individual level than with providing a generalised scenario. The study helps us to understand how even personal decisions like reproductive behaviour and reproductive choices are largely influenced by caste. One important finding of the study is that there persists an intra-regional differ-

Table 4: Logistic Regression Analysis for Reproductive Health Index in Bihar, Orissa, West Bengal and Eastern Region of India

Variable	Bihar			Orissa			West Bengal			Eastern Region		
	B	Sig	Exp (B)	B	Sig	Exp (B)	B	Sig	Exp (B)	B	Sig	Exp (B)
Age		0.0006			0.0007			0			0	
25-35	-0.3469	0.0027	0.7068***	-0.2662	0.0668	0.7663*	-1.5064	0	0.2217	-0.5149	0	0.5975***
35+	-0.6959	0.0027	0.4986***	-1.4697	0.0003	0.23***	-2.4203	0.0001	0.0889***	-1.129	0	0.3234***
Child-loss	-0.2991	0.0121	0.7415***	-0.5936	0.0001	0.5524***	-0.8501	0.0001	0.4274***	-0.4865	0	0.6148***
Residence	0.5913	0.0001	1.8064***	0.6191	0.0005	1.8573***	-0.1441	0.6133	0.8658	0.566	0	1.7612***
Caste		0.1503			0.537			0.4362			0.2332	
Intermediate	0.067	0.5774	1.0693	-0.0453	0.7656	0.9558	0.0352	0.8724	1.0358	0.0247	0.763	1.025
High	0.2638	0.0539	1.3019**	0.2062	0.3916	1.229	0.3182	0.2126	1.3746	0.1663	0.0986	1.1809*
Education		0			0.0027			0			0	
Primary	0.8955	0	2.4484***	0.3789	0.0262	1.4607**	0.8696	0.0001	2.3859***	0.8455	0	2.3291***
Middle	1.0743	0.0004	2.928***	0.5671	0.0884	1.7631*	1.7827	0.0001	5.9458***	1.1741	0	3.2351***
High School +	1.7351	0	5.6697***	1.2762	0.0009	3.5831***	8.4787	0.4396	4811.25	1.7051	0	5.5021***
Work status	-0.2353	0.0595	0.7903***	0.223	0.2779	1.2498	-0.0133	0.9544	0.9868	-0.1393	0.1243	0.87*
Husband's occupation		0.1805			0.024			0.2751			0.0016	
Professional	0.4584	0.1774	1.5816	0.2997	0.4667	1.3494	1.3034	0.3258	3.6818	0.5239	0.0318	1.6886**
Service	0.2126	0.1478	1.2368*	0.4895	0.0065	1.6315***	0.3253	0.1939	1.3844	0.307	0.0016	1.3593***
Exposure to mass media	-0.6592	0	0.5172***	-0.659	0	0.5174***	-0.7679	0.0001	0.4631***	-0.7446	0	0.4749***
Spousal communication	-0.485	0	0.6157***	-0.0862	0.5505	0.9175	0.0167	0.9358	-0.9835	-0.3495	0	0.705***
Constant	0.5972	0.0003		0.6299	0.0049		2.553	0.3578		0.741	0	
-2 log likelihood	26641			14220.4			931.36			55070		

Significant at * = 10 percent, ** = 5 percent, and *** = 1 percent levels of confidence

ence in reproductive health status of women. In the eastern region of India, caste differences in reproductive health are most pronounced in Bihar, while it is least so in West Bengal. This is mainly because the caste system in its rigid form is more a characteristic of the less developed state of Bihar, where caste and class are almost synonymous (Chakravarti 2001).

The economic differences among the caste groups widen the social inequalities among them. It is observed that poor educational status among women is an important reason for their poor reproductive health. The educational status of the woman is not free from her caste membership. In Bihar, according to the 1991 Census, literacy rate among the scheduled caste females is only 5.5 percent. During the colonial period the upper castes gained access to modern western education. The trend persists without much change in the educational status across the various castes. According to the 1931 Census, literacy rate was much higher among the Kayastha, Namasudra, Mahishya and Brahman caste groups, which constitute the upper castes; it was quite low among the Agarwals and Doms, who are the intermediate and lower castes. This implies that policies should be so framed that emphasis is placed on education, especially among the lower castes in rural areas, as caste variations are much higher in there.

Apart from trying to diversify the economy and provide better educational facilities, a major task for policy makers is to ensure that policies on reproductive and child health focus on campaigning the utilities of availing maternal care services and encouraging institutional deliveries assisted by professional health workers. It is observed that there prevails socioeconomic differences among the caste groups and this is one among various causes for inequality in their reproductive health status. Thus, different campaigning approaches should be adopted to reach different sections of the society to make the campaign more effective. Moreover, health workers should more regularly visit areas that comprise mainly of lower castes, who are deprived of access to formal maternal care due to reasons discussed earlier. Also, more auxiliary nurse and midwives should be trained so that births are assisted by skilled personnel.

This study leaves many gaps for future investigation. The caste classification considered in this study could be disaggregated for a detailed understanding of the influence of caste on the reproductive health of women. Our analysis is based on the individual level; the reproductive health status of various castes could also be studied at the district and state levels.

Note

1. In the present study the status of immunisation of women is not included in the RHI as it shows a strong positive correlation with ANC utilisation (Table not included). Women who avail ANC services usually receive two or more doses of tetanus toxoid injections. Similarly, iron and folic acid tablets also show a strong positive correlation with ANC, and hence it is also not included in the RHI. Since assistance at delivery is more important to determine the reproductive health status of women, in the RHI it is considered leaving out the place of delivery. Weight of the child at birth could not be included in the analysis as more than 70 percent of the children were not weighed at birth in the states covered by the study.

Appendix 1: Caste classification

Caste classification (Risley 1881)	Caste classification (based on ritual status) used in the study
1. Brahman	Highest Caste
2. Baidyas, Kayasthas and Kshatriyas, and also Rajputs	High Caste
3. Clean Sudra: Gandhabanik, Karmakar, Kansari, Kumar, Kuri, Madhunapit, Modak, Malakar, Napit, Sadgope, Sakhari, Tamil, Tanti, Tili, and Teli also Karan, Kustha and Raju of Midnapur, Khan of Rangpur and Sudra of East Bengal	Intermediate Caste
4. Clean castes with degraded Brahman: Chasi Kaivarta, Mahishya and Goala	Low Caste
5. Caste lower than group '4' whose water is not taken by Brahman: Sarak of Manbhum, Swarnakar, Sunri, Subarnabanik and Sutradhar	
6. Low caste who abstain from eating beef, pork and fowl: Bagdi, Barua, Bhaskar, Chain, Chasa, Dhoba, Doai, Gauran, Hajang, Jaliakaibarta, Kalu, Kan, Kapali, Kptl, Malo and Jualo, Mech, Namasudra, Chandal, Palia, Patri, Pod, Paro, Rajbanshi, Koch, Sukli, Tipura and Tipra etc. (This group includes most of the non-Aryan race and castes.)	Lowest Caste
7. Unclean feeders: Not served by Brahman, Dhoba or Napit: Bauri, Chamar, Dom, Hari, Bhuimali, Kaora, Konai, Kora, Lodha, Mal, Muchi, Sialgir	

Appendix 2: Reproductive Health Index

Variable	Score
1. Contraceptive usage	Presently using contraceptives = 1 Not using contraceptives = 0
2. Birth order of the last child	Low birth order (<4) = 1 High birth order (4 and above) = 0
3. Birth interval between the last child and the second last child	Birth interval of 24 months and more = 1 Birth interval of less than 24 months = 0
4. Antenatal care	Received antenatal care (any type) = 1 Did not receive any antenatal Care = 0
5. Skilled assistance at delivery	Received skilled assistance at delivery = 1 Did not receive skilled assistance at delivery = 0
Reproductive Health Index (RHI)	Score range 0 to 5
Categories of RHI Low RHI High RHI	Range 0 to 2 3 and above

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National Institute of Rural Development: A Study of an 'Epistemic Community'

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This paper attempts to understand the structure and functioning of the National Institute of Rural Development (NIRD), Hyderabad in the context of the changing relationship between the social scientists and the statist enterprise of rural development. The paper does not intend merely to chronicle the range of activities that the NIRD has so far undertaken or is presently engaged in. Rather, the focus is on its role as a mediating agency between the state and a plethora of rural development policies, programmes and projects introduced since independence.

The National Institute of Rural Development (NIRD), Hyderabad has been devoted to the theory and practice of rural development. In this paper,[1] though, our interest lies in its being a mediatory institution between the state and the village, both conceptually and empirically. We believe that an empirical exploration of the institutional setting of NIRD can give us an understanding of how its institutional discourse on the 'village'/'rural' informs the statist construction of the village in the context of rural development. Conversely, we can also see if the statist agenda informs its discourse, which it faithfully disseminates to a wider audience.

The NIRD has access to the state by virtue of its personnel who perform various interrelated roles as experts, scholars, social scientists, or consultants. At the same time, its distinctive self-image as a rural development knowledge institution[2] heavily relies on its ostensible applied research orientation. Unlike universities and other research institutes, the generation of knowledge at the NIRD has policy implications. Consequently, it has continually to renew its claims as a storehouse of academic experts and professional social scientists by highlighting and marketing the professional training and academic/research backgrounds of its personnel. Expectedly, it serves as a bridge between the state and the professional world of social sciences.

For our purposes, what is important is that the NIRD provides a context where its personnel frequently draw upon the various discourses