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Socio-Cultural Correlates of Breast-feeding and Abstinence in India: Evidence from Uttar Pradesh and Tamilnadu

Introduction

IN HUMAN population the variation in natural fertility are highly related to differences in the duration of female reproductive period and in the components of birth intervals. The major component of birth intervals are: gestation, the anovulatory period (post-partum amenorrhea), the menstrual interval, and the time lost to the foetal wastage (Henry, 1961). The postpartum amenorrhea segment of birth intervals are highly subject to biological variations, specifically among non-contracepting women. The duration of postpartum amenorrhea may be extended by frequent and longer period of breast-feeding. In fact, frequent and robust suckling defers resumption of ovulation as several evidences points to prolactin playing a role in suppressing ovulation either by acting on hypothalamus which releases hormones necessary for ovulation of/or by directly acting on ovaries. However, the exact mechanism responsible for increased anovulatory state remains undetermined. Some research work points that the hormone prolactin which is produced and secreted in response to the suckling stimulus, interferes with normal gonadotropic hormone production which prevents ovulation (Delvoye *etal.,* 1976; Martin, 1976; Tyson et al., 1976).

Several other studies have also established that prolonged breast-feeding enhances the period of infertility after a birth by suppressing the normal ovulatory cycle. Analysis of World Fertility Survey data, carried out during 1980's, have estimated that every additional month of breastfeeding pushes the infertile period following a birth by 0.4 months and breastfeeding accounted for 8 to 25 percent of the length of the birth interval which is equivalent to 5-10 months in time (Ferry and Singh, 1980). Some research findings point out that exclusive breastfeeding induces more than 98 percent prolactin from pregnancy in the first 6 months. Apart from these, other studies suggest that even after the resumption of menstruation, breastfeeding associated with sexual abstinence plays vital role in augmenting fertility reducing

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effects of lactation on the population (Millman *et al.,* 1993). In developing countries, generally, a shorter period of postpartum abstinence is noticed. However, within these societies, the average periods of postpartum abstinence may be long enough to have a negative influence upon fertility. Additionally, cultural norms promoting taboos for sexual-intercourse while lactating may also contribute to the fertility-reducing effects. Thus, it appears that in natural populations with relatively low levels of contraception, the fertility levels are highly subject to prevailing lactational practices and sexual abstinence.

Recent evidences suggest that in several developing countries, breastfeeding patterns are changing along with urbanization and life-style changes. These changes are tending towards a shortening of the duration of breastfeeding, a reduction in the frequency of breastfeeding episodes, and an earlier introduction of baby-food supplements. As a result, the risk of pregnancy during lactation has increased. Therefore, any change in breastfeeding practices ′, has implication for fertility and child-bearings. Surely, these have led to demographic } speculations about the impact of postpartum variables on population with low levels of t contraception. In order to understand the potential impact of breastfeeding and sexual-abstinence on birth intervals, it is important in the first place to study the levels, differentials and correlates of postpartum variables. This paper examines differentials in breastfeeding practices and in sexual-abstinence by various socio-cultural and demographic attributes of women, and also identifies associated factors for two large states of India; namely, Uttar Pradesh and Tamilnadu.

Objectives of the Study

An attempt has been made in the paper to study the following aspects:

(1) To examine the current levels of breast feeding and post partum abstinence in the two states,
(2) To analyze the socio-economic and demographic determinants of breast feeding practices and
(3) To analyze the socio-economic and demographic determinants ofpost-partum sexual abstinence.

Method and Material

Data for the present study is collected from National Family Health Survey (NFHS), which is a sample based nation wide survey covering 26 states in India (NFHS, India, 1995). The information regarding breast feeding and sexual abstinence are available in the survey and the data are collected from 11,438 and 3,948 ever married women of age group 13-49, from Uttar Pradesh and Tamilnadu respectively. The data are utilized for carrying out in-depth investigations on breast feeding and post partum sexual abstinence in both rural and urban areas. The data on duration of breastfeeding, postpartum abstinence and amenorrhea were obtained directly from the respondent women i.e., mothers who had given birth in the preceding 4 years from the survey date. In the survey such information were recorded for the

last 3 births occurring within 4 years, preceding the survey. This paper analyses the lactational and postpartum abstinence experiences of mothers of last child pertaining to open birth-intervals. The information on breastfeeding durations for the last child was collected for completed breastfeedings only. Since the information on durations of breastfeeding for last child pertains to most recent period prior to the survey, it is considered that such data are less prone to errors due to recall-lapse. Besides cross tabulation, multivariate analysis has been utilized to study the socio-cultural correlates of breastfeeding and postpartum sexual abstinence in Uttar Pradesh and Tamilnadu.

Background of Study Area

Uttar Pradesh is the largest state in terms of population, which occupies the central sector of the great plains of northern India whereas Tamilnadu is situated in the south-eastern extreme of the Indian peninsula. Both the states are thickly populated regions of India. The population of Uttar Pradesh was 139 million in 1991 Census, accounting for nearly 16 percent of the population of country as a whole and the total population for Tamilnadu was enumerated as 56 million in 1991 Census, which constitutes one of the largest state in the southern part of the Country. The data from NFHS reveals that fertility levels have started to decline in Uttar Pradesh lately, but still, the fertility rate continues to be high. Women in their forties have had an average of six children, but women who are currently in their child-bearing years can be expected to have fewer than five children, on average, during their life time if current fertility levels prevail (NFHS, U.P., 1994). The current levels of fertility in Tamilnadu is lower than that of all the major states in India, except Kerala, and approaching replacement levels of fertility (NFHS, Tamilnadu, 1995). It is conjectured that the influence of postpartum variables and the resulting demographic situation in these two major states of country, would largely determine the fertility trends and health conditions for the country as a whole.

Table 1 presents selected demographic and social indicators along with selected individual characteristic of women from the two states.

TABLE 1: SELECTED SOCIO-DEMOGRAPHIC INDICATORS FOR UTTAR PRADESH AND TAMILNADU, 1992-93

Selected Indicators	*Uttar Pradesh*	*Tamilnadu*
Total Population®	139 million	56 million
Percent Urban	19.8	34.2
Crude Birth Rate	35.9	23.5
Total Fertility rate	4.8	2.5
Average Children Ever Born	6.0	4.2
Percent Female illiterate (6+)	68.5	43.9
Percent Women age 20-24 married before age 18	63.9	36.1
Singulate mean age at marriage	18.6	20.5
Contraceptive Ever-use	26.1	56.1
Percent of children 0-1 month who are breast feeding	97.6	95.6
Percent of Children 12-23 months who are breast	91.5	64.9

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Breastfeeding, Abstinence and Postpartum Amenorrhea

As discussed earlier several studies have suggested that the practice of breastfeeding significantly increases the intervals between births and thereby lowers fertility (Ferry *et al.,* 1980). In addition, breastfeeding associated with postpartum sexual abstinence lengthens the infertile period since the durations of postpartum amenorrhea is closely associated with durations of breastfeeding (Millman *et al.,* 1993). Moreover, conception can also be delayed by prolonged postpartum abstinence.

Table 2 gives the primary result from this analysis showing that the average duration of i breastfeeding is longer for Uttar Pradesh (19.6 months) than for Tamilnadu (14.6 months), | almost by 5 months; whereas the average period of postpartum sexual-abstinence is almost double for Tamilnadu (6.1 months) compared to Uttar Pradesh (3.2 months). Though the duration of breastfeeding is shorter for Tamilnadu compared to Uttar Pradesh, the longer periods of abstinence for Tamilnadu, as noted, has possibly contributed to fertility-reducing ' effects through delayed conception, hi Uttar Pradesh, a shorter period of abstinence is associated with relatively longer period of breastfeeding, thus, contributing to fertility-reducing effects more through lactational practices in suppressing ovulation. It is interesting to note that with such contrasting levels of breastfeeding and abstinence for the two states, the average periods of postpartum amenorrhea is nearly the same, i.e., 7 months for Uttar Pradesh and 6.7 months for Tamilnadu. Thus, it appears that the fertility-reducing effects of postpartum variables in Uttar Pradesh through longer periods of breastfeeding is compensated through longer periods of abstinence in Tamilnadu. Thus, the contrasting patterns of postpartum variables as observed for the two states in India, provides an interesting situation and an unique opportunity to examine the differentials and to investigate for the factors associated with such patterns.

TABLE 2: BREASTFEEDING DURATION, POST-PARTUM SEXUAL ABSTINENCE AND AMENORRHEA PERIODS, UTTAR PRADESH AND TAMILNADU (OPEN BIRTH INTERVALS), NFHS, 1992-93

States	*Average Duration in Months*		
	Breast feeding	*Abstinence*	*Amenorrhe*
Uttar Pradesh	19.6	3.2	7.0
	(1303)	(5374)	(4385)
Tamilnadu	14.6	6.1	6.7
	(710)	(1150)	(1140)

Differential in Breastfeeding and Abstinence

The differentials in breastfeeding practices and postpartum sexual abstinence among women of Uttar Pradesh and Tamilnadu has been examined by socio-cultural characteristics and by age cohort of women.

Table 3(a) presents the estimates for breastfeeding durations by age-cohort of women, it indicates that the women of age group 40-49 (at survey date) have breastfed their children 6

months more in Uttar Pradesh, and about 4 months more in Tamilnadu, compared to younger women age 20-24. Thus it is clear that the average period of breast-feeding has declined marginally in the recent period. Regarding postpartum sexual abstinence, in Uttar Pradesh, the average period of abstinence has reduced from 4 months for women age 40-49, to 3.2 nonths for younger women age 20-24. Similarly, the average duration of abstinence in Tamilnadu tias also declined from 7.6 months for women age 40-49, to 5.5 months for women age 20-24. Thus, it appears that postpartum sexual abstinence has reduced by nearly 1 month for Uttar Pradesh, and by 2 months for Tamilnadu, in the past two decades.

TABLE 3(a): DIFFERENTIALS IN AVERAGE LENGTH OF BREASTFEEDING AND ABSTINENCE (in months) BY AGE OF WOMEN, UTTAR PRADESH AND TAMILNADU, 1992-93

Age of women	*Breastfeeding*		*Abstinence*	
	*Uttar Pradesh**	*Tamilnadu*	*Uttar Pradesh**	*Tamilnadu*
20-24	17.8	13.5	3.2	5.5
25-29	19.1	15.7	3.2	6.3
30-34	19.8	14.7	3.6	6.4
35-39	23.6	14.8	3.5	8.6
40-49	23.8	17.6	4.0	7.6

*Weighted for sampling designing

Table 3(b) presents the estimates for average durations of breastfeeding and sexual-**abstinence** (in months) by selected socio-cultural attributes of women, i.e., residence status, **education** of women, working status, religion, caste affiliations, contraceptive-use status, exposure to media channels, and standard of living index of the household (SLI). It is observed from the table that a substantial differential exists in breastfeeding practices between urban and rural areas of both the states. In Uttar Pradesh, urban women have breastfed 4 months les**ser** than their rural counterparts, again in Tamilnadu, urban women have breastfed for lesser durations than rural women (by 3 months). Regarding duration of breast feeding it may be observed that there has been a simultaneous decline in durations of breastfeeding with rising levels of education, for both the states, e.g. the average duration of breastfeeding of 21 months for illiterate women in Uttar Pradesh declined gradually to 16 months for those who had education level of high school and above. Similar pattern was noticed for Tamilnadu, a decline of 5 months in breastfeeding duration, as the literacy level rises from illiterate to high school pass.

There appears to be some differentials in breast feeding practices by working status of women suggesting that working women have breastfed longer than non-working women. The data show that working women, on an average, have breastfed 2.5 months more than non working women in Uttar Pradesh, and about 3 months more in Tamilnadu. The data do not show such differentials by contraceptive-use status, as the gap between never-users and ever user have been very minor for both the states. The differentials by religion and cast background of women indicates that Hindu women and Scheduled caste women have breastfed longer than Muslims and Other caste groups, on an average, in both the states. The

TABLE 3(b): SOCIO-ECONOMIC DIFFERENTIALS IN BREASTFEEDING DURATIONS AND ABSTINENCE PERIODS, UTTAR PRADESH AND TAMILNADU, NFHS, 1992-93

Socio-citltiiral attribute of women	*Breastfeeding*		*Abstinence*	
	*Uttar Pradesh**	*Tcimilnadu*	*Uttar Pradesh**	*Tamilnadu*
All Women	19.8(1306)	14.6(710)	3.3(5420)	6.1(1150)
Residence				
Urban	16.9	12.9	2.9	5.2
Rural	21.0	15.9	3.4	6.6
Education				
Illiterate	20.9	17.0	3.4	6.6
Up to primary	19.5	14.5	3.5	5.7
Up to secondary	18.2	12.0	3.1	5.6
High School-l	15.8	12.0	3.0	5.5
Religion				
Hindu	20.4	15.4	3.4	6.3
Muslim	18.1	10.4	3.1	4.4
Caste				
SC	20.5	19.7	3.5	6.6
Others	19.6	13.7	3.3	5.9
Media				
Not exposed	20.6	16.8	3.4	6.6
Exposed	18.8	14.2	3.3	6.0
Contraceptive use				
Never used	20.0	14.4	3.4	6.0
Ever-used	19.5	14.7	3.1	6.1
SLI				
Low	21.2	16.6	3.4	6.5
Medium	20.6	13.8	3.4	5.7
High+	15.9	11.0	2.8	5.4
Working status				
Working	22.0	16.4	3.8	6.9
Not-working	19.5	13.5	3.3	5.5

*Weighted for sampling designing

variable 'media exposure' takes into account any exposure to the women through media activities relating to family planning, mother and child health care through radio, television and cinema. In the analysis, an attempt has been made to examine the possible influence of media exposure on post-partum variables. It appears that there are only minor differentials in breastfeeding practices between 'exposed' and 'non-exposed' groups, in both the states. The. non-exposed group are found to breastfed a little more than the exposed groups and regarding post partum abstinence the non-exposed group are found to go for a little longer duration than the exposed ones. Apart from these, some economic factors may have also influenced the post-partum variables, and keeping this in-view, standard of living index (SLI) has been included in the analysis. Tills variable has been obtained by constructing an index termed as

'Standard of Living Index', *which* represents the overall family income status of the household to which the respondent women belongs. This index (SLI) is based upon possession of various household items and scores assigned to each of them. The index is categorized in three groups: low, medium, and high. The influence of family income and living standard on breastfeeding and abstinence can be assessed through this index. The results from Table 3(b) show that there has been a simultaneous decline in durations of breastfeeding with increase in standard of living of households. This inverse relationship between breastfeeding durations and SLI has been found to be true for both the states. The findings suggest that with rise in living standard from 'low' status to 'high' status, there has been substantial decline in the duration of breastfeeding, almost by 5 months for Uttar Pradesh, and nearly by 5.6 months for Tamilnadu.

Thus, the findings show that within the study area, the section which comprises rural background, low literacy rate, low family income (poor), older age-cohort and Hindus and Scheduled Caste groups, generally, have breastfed their children longer, than women of younger generations, of urban background, with high literacy, and high family income - typically identified as from modem societies. Also, a similar pattern emerges with regard to postpartum sexual abstinence practices prevalent in the two states. The bi-variate analysis done so far, perhaps, does not take into account the influence of background variables upon postpartum variables independently, e.g., the contraceptive-use status of women may be influenced by her educational status or religious affiliation or residence background. Also, it is possible that there may be compounding effects of one or more variables. Thus, in order to identify independent effects of each of the background variable upon postpartum variables, it is necessary to eliminate the influence of remaining variables through appropriate statistical techniques. In order to examine the independent effects, a detailed multivariate analysis has been carried-out by employing the techniques of multiple classification analysis (MCA) and hierarchical analysis of variance (Andrews *et al.*, 1973).

The multivariate analysis presented in the following sections deal mainly with the attempts to identify independent influence of background variables upon the durations of breastfeeding and postpartum abstinence periods at the micro-levels by taking the respondent women as the unit of analysis.

Determinants of Breastfeeding Practices

In the multivariate analysis, a set of seven predictors are included to determine the independent influence of predictors upon duration of breastfeeding. The selected predictors are; Residence status. Age-cohort, Religion, Media exposure. Education of women, Contraceptive status, and SLI. The predictors were chosen partly on the basis of their causal relationship with dependent variable and partly on their relevance to the study. The analysis of variance was carried out, initially, by testing for all two-way and three-way interactions between the predictors. It was found that none of the interactions were significant. In the absence of any significant interactions, the MCA model can be efficiently used for comparing category means and for examining the deviations from the grand mean.

The result from the analysis of variance has been shown in Table 4(a). The result indicates that among all the seven predictors; five for Uttar Pradesh and three for Tamilnadu are statistically significant. The findings from this table reveals that the breastfeeding practices in Uttar Pradesh could be well explained through residence background, age-cohort, religion, education of women, and standard of living index, whereas for Tamilnadu, it can be explained only through religion, education and standard of living index. It is revealing that for Tamilnadu, the residence background and changes over generation as reflected through age-cohort does not show significant impact upon breastfeeding practices. The impact of media exposure' and 'contraceptive use' has been found to be statistically insignificant for both the states.

TABLE 4(a): ANALYSIS OF VARIANCE OF BREASTFEEDING DURATION SHOWING IMPACT OF SELECTED SOCIO-CULTURAL AND DEMOGRAPHIC VARIABLES, UTTAR PRADESH AND TAMILNADU, 1992-93

Source of variation	*Uttar Pradesh*				*Tamilnadu*			
	Sum of Squares	*D.F.*	*Mean Squares*	*F Values*	*Sum of Squares*	*D.F.*	*Mean Squares*	*F Values*
Main Effect	13962.22	7	1994.60	22.90*	5661.63	7	808.81	12.73**
1. Residence	1072.49	1	1072.49	12.31**	56.56	1	56.56	0.89
2. Age-cohort	3837.08	1	3837.08	44.06**	4.41	1	4.41	0.07
3. Religion	1929.76	1	1929.76	22.16**	1336.16	1	1336.16	1.02**
4. Media	44.72	1	44.72	0.51	71.78	1	71.78	1.13
5. Education of women	1593.49	1	1593.49	18.30**	597.89	1	597.89	9.41**
6. Contraceptive use	10.17	1	10.17	0.12ns	215.52	1	215.52	3.39ns
7.SLI	522.13	1	522.13	6.00**	473.94	1	473.94	7.46**
Summary Explained	20587.36	63	326.78	3.57**	9361.47	63	148.60	2.34**

*$p \leq 0.05$** $\leq$ 0.01 ns: Not Significant at 5% level

In Table 4(b), the multiple classification analysis results shows the relationship between predictors and dependent variable in terms of deviations from grand mean. The grand mean for the dependent variable i.e., average duration of breastfeeding, is 20.4 months for Uttar Pradesh and 14.8 months for Tamilnadu. The unadjusted and adjusted category deviations have been considered for significant variables only, showing the effects of predictors in , deviation forms. The influence of predictors 'residence' and 'age-cohort' are particularly important for Uttar Pradesh as they show high statistical significance in ANOVA analysis, | however, they do not show significance in case of Tamilnadu. For Uttar Pradesh the adjusted category means for predictor 'residence' being urban area, was 18.79 (=20.43-1.64) months, and for rural area, it was 21.16 (= 20.43 + 0.73) months, thus, the duration of breastfeeding for rural women was longer by 2.37 months compared to their urban counterparts. Again, H we consider the adjusted deviations and beta coefficients for predictor 'age cohort', it becomes clear that women above age 30 years have breastfed their children longer (22.47 months)

TABLE 4(b): RELATIONSHIP BETWEEN BREASTFEEDING DURATION AND BACKGROUND CHARACTERISTICS SHOWING CATEGORY MEANS AS DEVIATIONS FROM THE GRAND MEAN, UTTAR PRADESH AND TAMILNADU, 1992-93

Socio-cultural characteristics of women	*Uttar Pradesh*			*Tamilnadii*		
	(N)	*Unadjusted dev. (eta)*	*Adjusted dev. (beta)*	*(N)*	*Unadjusted dev. (eta)*	*Adjusted dev. (beta)*
Grand inciin		20.43			14.77	
1. Residence						
Urban	378	-3.02	-1.64	302	-1.78	-.37
Rural	854	1.34	.73	397	1.35	.28
		(.20)	(.11)		(.18)	(.04)
2. Age-Cohort						
Below 30	692	-1.74	-1.59	512	-.11	-.05
Above 30	540	2.22	2.04	187	.30	.13
		(.20)	(.18)		(.02)	(.01)
3. Religion						
Hindus	962	.73	.70	591	.80	.62
Muslims & Oth.	270	-2.61	-2.48	108	-4.40	-3.41
		(.14)	(.13)		(.22)	(.17)
4. Media exposure						
Not Exposed	667 565	1.20	-.22	117	2.36	.80
Exposed		-1.42	.26	582	-.48	-.16
		(.13)	(.02)		(.13)	(.04)
5. Education of women						
Illiterate	829	1.45	.97	280	2.47	1.36
Literate	403	-2.99	-2.00	419	-1.65	-.91
		(.21)	(.14)		(.24)	(.13)
6. Contraceptive use						
Never used	759	.46	-.08	249	-.12	-.77
Ever used	473	-.74	.13	450	.07	.42
		(.06)	(.01)		(.01)	(.07)
7.SLI						
Low	461	2.11	.98	327	2.20	1.11
Medium & High	771	-1.26	-.58	372	-1.94	-.98
		(.16)	(.08)		(.25)	(.12)
Multiple *R* squared		.114			.110	
Multiple *R*		.338			.331	
No. of cases		. 1232			699	

compared to women below age 30 years (18.84 months), nearly by over 3.6 months. However, for Tamilnadu, these two predictors do not show any important role in influencing breastfeeding practices. The ANOVA analysis, further indicates that the other three predictors; religion, education of women and standard of living index are statistically significant for both the states. By examining adjusted deviations and beta coefficients for these three predictors, it

becomes clear that Hindu women, illiterate women, and those from households of low standard of living have breastfed their children longer compared to non-Hindu women, literate, and those belonging to households of medium and high standard of living index. The findings from the MCA analysis very clearly indicate that poor, illiterate and Hindu women have longer durations of breastfeedings than the rich, literate and non-Hindu women, which is equally true for Uttar Pradesh and Tamilnadu. Among the three predictors, the explanatory power of 'religion' and 'education of women' are quite impressive as exhibited by relatively strong beta coefficients. Thus, it becomes clear that breastfeeding practices in Uttar Pradesh and Tamilnadu are highly influenced by religion, educational status of women, and level of household economic status. Additionally, for Uttar Pradesh, residence background and age-cohort are also important determinants.

Determinants of Postpartum Sexual Abstinence

The role ofsocio-cultural variables in influencing post-partum sexual abstinence has been examined by employing once again the techniques of multiple classification analysis and analysis of variance. The results are presented through Tables 5(a) and Table 5(b). In the multivariate model, five predictors were chosen in order to determine the independent influence ofsocio-cultural variables. The predictor variables chosen were; residence background, age-cohort, religion, education and occupation of women.

TABLE 5(a): ANALYSIS OF VARIANCE OF ABSTINENCE PERIOD SHOWING IMPACT OF SELECTED SOCIO-ECONOMIC AND DEMOGRAPHIC VARIABLES, UTTAR PRADESH AND TAMILNADU, 1992-93

Source of	*Sum of Squares*	*D.F*	*Mean Squares*	*F Values*	*Sum of Squares*	*D.F.*	*Mean Squares*	F *Values*
Main effect	579.10	*5*	115.82	16.94"	1093.80	5	218.76	12.74"
1. Residence	140.34	1	140.34	20.53"	110.93	1	110.93	6.46*
2. Age-cohort	215.43	1	215.43	31.51"	271.59	1	271.59	15.82**
3. Religion	60.12	1	60.12	8.79"	137.13	1	137.13	7.99**
4. Education of women	0.26	1	0.26	0.04ns	28.26	1	28.26	1.65ns
5. Occupation of women	31.00	1	31.00	4.54"'	142.16	1	142.16	8.28**
Summary Explained	611.11	15	40.74	5.96"	1240.67	15	82.71	4.82**'

*$P <$ 0.05 ** < 0.01 **ns** : Not **Significant at** 5% level

The results from Table 5(a) reveals that except for the predictor 'education of women', all other predictors have turned out to be statistically significant in explaining the variations in the dependent variable. Thus, it is clear from this analysis that the role of residence background, age-cohort, religion and working status of women are quite important in explaining the variations in postpartum sexual-abstinence for both the states of Uttar Pradesh and Tamilnadu.

TABLE 5(b): RELATIONSHIP BETWEEN ABSTINENCE PERIOD AND BACKGROUND CHARACTERISTICS SHOWING CATEGORY MEANS AS DEVIATIONS FROM THE GRAND MEAN, UTTAR PRADESH AND TAMILNADU, 1992-93

Soda-cultural characteristics of women	*Uttar Pradesh Tamilnudii*					
	m	*Unadjusted dev. (eta)*	*Adjusted dev. (beta)*	*(N)*	*Unadjusted dev. (eta)*	*Adjusted dev. (beta)*
Grand mean		3.165			6.096	
1. Residence						
Urban	954	-.45	-.38	374	-.80	-.47
Rural	3696	.12	.10	639	.47	.28
		(.09)	(.07)		(.14)	(.09)
2. Age-Cohort						
Below 30	2944	-.17	-.17	776	-.31	-.29
Above 30	1706	.29	.29	237	1.01	.95
		(.08)	(.08)		(.13)	(.12)
3. Religion						
Hindus	3830	.08	.06	881	.21	.15
MuslimsA Oth.	820	-.36	-.26	132	-1.38	-.98
		(.06)	(.05)		(.13)	(.09)
4. Education of women						
Illiterate	3534	.05	.00	457	.54	20
Literate	1116	-.16	-.01	556	-.44	-.17
		(.03)	(.00)		(.12)	(.04)
5. Working Status						
Worker	780	.31	.91	405	.83	.50
Non-Worker	3870	-.06	-.04	608	-.55	-.33
		(.05)	(.03)		(.16)	(.10)
Multiple *R* squared		.018			.060	
Multiple *R*		.134			.244	
No. of cases		4651			1013	

The relationship between abstinence periods and socio-cultural variables in terms of category deviations from grand mean, as obtained through multiple classification analysis has been presented in Table 5(b). The results from this table point out that urban women, of younger cohorts (below 30 years), non-Hindu and non-working women have shorter postpartum sexual-abstinence periods compared to rural women of older cohorts (above 30 years), Hindus, and working women; as exhibited by negative deviations from the grand means, for both Uttar Pradesh and Tamilnadu. However, the findings from this table suggest that the influence of predictors are quite strong for Tamilnadu as seen through the high values of beta-coefficients and larger deviations from the grand mean, compared to Uttar Pradesh. Moreover, the grand mean itself is twice large for Tamilnadu compared to Uttar Pradesh. The total variation (R^2) explained by predictors is relatively large for Tamilnadu (24 percent) than for Uttar Pradesh (13 percent). Thus, the multiple classification analysis brings out very clearly that rural and

Hindu women, of older cohorts (above 30 years), and working women have longer abstinence periods than their counterparts, in both the states. Moreover, the influence ofsocio-cultural predictors are greatly pronounced in case ofTamilnadu, as shown by strong beta coefficients.

Discussion

Davis and Blake have proposed a comprehensive set of eleven intermediate variables divided into three major sections: intercourse, conception, and gestation variables (Davis and Blake, 1956). Further work by Bongaarts has identified four intermediate variables—proportion married, levels of contraceptive use, induced abortion, and postpartum infecundability— which could explain 96 percent of the variance in the observed total fertility rates (Bongaarts, 1978). The sensitivity of the fertility levels to variation in the different intermediate variables is determined by the stage in the fertility transition process. The synthetic transition model of Bongaarts and Potter (Bongaarts and Potter, 1983) characterizes fertility transition measured in terms ofTFRs into four stages: I. TFR above 6.0; II. TFR between 4.5 and 6.0; III. TFR between 3.0 and 4.5; and IV. TFR below 3.5. In stage I the postpartum infecundability plays a significant role; the rate of contraceptive use is minor, generally well below 10%, and the breastfeeding duration averages about thirteen months. In contrast, in stage IV the roles of these two important variables are reversed; the average breastfeeding period to less than three months, and the average rate of contraceptive use rises upto 70%. The National'Family Health Survey data (NFHS, 1995) has estimated TFR of 4.8 in 1990-92 for Uttar Pradesh and of contraceptive use 20 percent; whereas forTamilnadu, the estimated TFR was 2.5 and contraceptive-use of nearly 50 percent. In the transition model, Uttar Pradesh with high TFR, low contraceptive-use, average breastfeeding duration of 20 months, and average abstinence period of three months would have reached II stage. At the other end, Tamilnadu with a relatively low TFR, high contraceptive use, average breastfeeding duration of 14 months, and average abstinence period of six months may already have reached stage IV. In the contrasting patterns, as observed, it appears that fertility reducing effects of postpartum variables are significantly important in the two states.

The analysis contained in this paper brings out very clearly that the practice of breastfeeding and abstinence in the two major states of India: Uttar Pradesh and Tamilnadu are highly related to socio-cultural factors and changes in generational gaps. The findings reveal that literate, non-Hindu, and rich (high SLI) women have shorter breastfeeding durations than illiterates, Hindus, and poor (low SLI) women. In addition, the breastfeeding practice in Uttar Pradesh is influenced by residence background and generational age-gaps. The role ofsocio-cultural factors in influencing post-partum sexual abstinence period has been found to be significantly important through the variables; residence background, generational age-gaps, religion and working status of women. The results reveal that urban women, of younger cohorts (below 30 years), non-Hindu, and non-working women have shorter abstinence periods compared to rural women, of older cohorts (above 30 years), Hindus, and working women in both the states.

The findings from this analysis suggest that apart from modernization process, defined in terms of higher literacy levels, higher developmental and urbanization levels, the changing

perceptions and attitudes towards lactational practices over the generation has significant dent on shortening of breastfeeding durations and abstinence periods. Thus, the study support the well approved hypothesis that the process of modernization defined in terms of improvement in level of education, family income, urbanization tends to shorten the period of breastfeeding and abstinence, and consequently, the post-partum infecundability is reduced. Such reductions in the infertile periods can be expected to contribute to an increase in natural fertility levels of the population and also on the observed fertility levels, if not counter balanced by the fertility reducing effects of contraception.

References

Andrew, F. M., James, N. M., John, S. and Laura, K., 1973, *Multiple Classification Analysis,* (2nd edn.). Ann Arbor, Institute for Social Research, University of Michigan. Bongaarts, John, 1978, A framework for analyzing the proximate determinants of fertility. *Population ami Development Review,* 4(1): 105-132.

Bongaarts, John and Potter, R. G., 1983, *Fertility, Biology and Behaviour.* New York: Academic Press. Chaudhry, M., 1990, Role of the social and cultural factors in human fertility in India. *Population and Environment.* Winter, 12(2): 117-37. Davis. K. and Blake, J., 1956, Social Structure and Fertility: Analytical Frame Work. *Economic Development und Cultural Change,* 4(4): 211-235. Delvoye. P., Delogne-Desnoeck, J. and Robyn, C., 1976, Serum Prolactin in Long-Lasting Lactational Amenorrhoea. *Lancet,* **ii:** 288-89.

Feny. B., Singh, S.. 1980. Breast-feeding: a vital factor in birth intervals. *People,* 7(4): 19-20. Henry. L.. 1961. Some Data on Natural Fertility. *Eugenics Quarterly,* 8(2): 81-91. Martin, C. R., 1976, *Conception, Contraception, Gestation, Parturition and Lactation.* Textbook of Endocrine Physiology, Williams and Willkins Company, pp. 301-45. Millman. S.. 1993. Promoting breastfeeding as birth control. *Health Transition Review,* April, 3(1): 101-6. National Family Health Survey, 1995, *MCH and Family Planning Survey, India 1992-93.* International Institute for Population Sciences, Bombay: IIPS. National Family Health Survey, 1994, *MCHandFamily Planning Survey, UttarPradesh 1992-93.* International Institute for Population Sciences; PRC, Lucknow, Bombay: UPS. National Family Health Survey, 1994. *MCHand Family Planning Survey, Tamilnadu, 1992.* International Institute for Population Sciences; PRC, G.I.R.H.F.W.T. Bombay: UPS. Sinha, R. K., 1994, Correlates of Breastfeeding in Bihar. *In:* K.B. Pathak, C. P. Prakasam & A. Pandey (eds.), *Biostatistical Aspects of Health.* B. R. Publishing Corporation, Delhi. Srinivasan, K.. Pathak. K. B. and Pandey, A., 1989, Determinants of Breastfeeding and Post-partum Amenorrhoea in Orissa. *Journal ofBiosocial Science,* **21:** 365-371. Tyson, J. E., Feedman. R. S., Perez, A., Zacur, H. A. and Zanurtu, J., 1976, Significance of the Secretion of Human Prolactin and Gonadotropin for Puerperal Lactational Infertility, in Breastfeeding and die Mother, Ciba Foundation Symposium. 45:49-71.