

SPATIAL VARIATION OF ADOLESCENT FERTILITY AND THEIR REPRODUCTIVE HEALTH PROBLEMS IN INDIA

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Introduction

The largest generation of adolescents – 1.2 billion is preparing to enter adulthood in a rapidly changing world (UNFPA 2004). Their educational and health status, their readiness to take on adult roles and responsibilities, and the support they receive from their families, communities and governments will not only determine their own future but also the prospect of their countries. In a developing country like India, the sexual activity among adolescent females takes place overwhelmingly within the context of marriage, as the priorities in the life of a girl child are primarily related to marriage and later on with motherhood. For example, as many as 34 percent of the adolescent girls aged 15-19 years are already married and presumably sexually active, while fewer than 10 percent of unmarried girls are reported to be sexually experienced (Jejeebhoy 2000). Married adolescents in India are far more likely to experience regular sexual interactions than are unmarried sexually active adolescents. The reason behind this is that the age at marriage and the age at first cohabitation with husband is very low. Thus it is obvious that adolescent fertility is quite common in the Indian society and in fact contributes almost 19 percent of the total fertility of the country and more than 25 percent (Table 1) for the states of Andhra Pradesh, Karnataka, Maharashtra and Madhya Pradesh.

Adolescence is the period of physical, psychological and social change from childhood to adulthood. In the Indian context, it generally starts at the age of 13 or 14 years and continues up to 19 years or more. The period of adolescence marks an abrupt transition in the lives of large numbers of Indian girls – many experience marriage, a break-up with natal family and familiar social networks, new pressures to initiate childbearing and in many cases new health problems, many of which relate to sexual and reproductive issues. Despite the enormity of this transition, little is known about the lives of the married adolescents and the adverse effects on their health due to early pregnancies. This paper synthesises the available evidence on the situation of

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married adolescent girls and sheds light on the spatial variation of adolescent fertility in respect to the states of India. The paper first assesses the performance of each state in respect to the measures of proximate determinants of fertility and then explores the different reproductive health problems faced by this vulnerable age group.

For the purpose of the present study, the focus will be only on females in the age group 15-19 years, as the fertility of women before that particular age is negligible. Again, this age group is accepted as the 'quinquennial age' and thus helps in classification, compilation and comparison of the data. The evidences present in this paper are based on National Family Health Survey-2 (NFHS-2), 1998-99 data on ever-married women in the age group 15-19 years.

Table 1: Percent share of adolescents (15-19) towards TFR, 1998-99.

States	TFR	ASFR	Share of adolescent towards TFR
India	2.85	0.107	18.77
Andhra Pradesh	2.25	0.132	29.33
Arunachal Pradesh	2.52	0.066	13.09
Assam	2.31	0.089	19.26
Bihar	3.49	0.113	16.19
Gujarat	2.72	0.087	15.99
Haryana	2.88	0.092	15.97
Karnataka	2.13	0.112	26.29
Kerala	1.96	0.039	9.95
Madhya Pradesh	2.21	0.142	32.13
Maharashtra	2.52	0.129	25.59
Manipur	3.04	0.042	6.90
Meghalaya	4.57	0.086	9.40
Mizoram	2.89	0.054	9.34
Nagaland	3.77	0.056	7.43
Orissa	2.46	0.079	16.05
Punjab	3.31	0.040	6.04
Rajasthan	3.78	0.126	16.67
Tamil Nadu	2.19	0.083	18.95
Tripura	1.87	0.075	20.05
Uttar Pradesh	3.99	0.120	15.04
West Bengal	2.29	0.107	23.36

Altogether twenty-one states have been considered for the analysis except Jammu & Kashmir, Sikkim, Himachal Pradesh, Goa and the newly formed states of Chattisgarh, Uttaranchal and Jharkhand.

Determinants of fertility

There are various social, cultural, psychological and economic factors, which determine human fertility. The behavioral dimensions of fertility are linked through a set of proximate determinants of human reproduction. John Bongaarts has identified the following seven proximate determinants of fertility - age at marriage, onset of permanent sterility, postpartum infecundability, fecundability, use effectiveness of contraception, spontaneous intrauterine mortality and induced abortions. But Bongaarts in his aggregate model has focused only on the four proximate determinants of fertility, namely, marriage and marital disruption, the use of contraception, postpartum infecundability and induced abortions. In the present paper, the highlight will only be on these four proximate determinants of fertility.

Age at marriage

Since marriage identifies the onset of exposure to the risk of socially sanctioned child bearing in all the societies, it is one of the principal determinants of fertility. Table 2 gives the state wise variation in the median age at marriage, which is lowest for Madhya Pradesh (14.7 years) while Mizoram records the highest (22 years).

For most of the states, more than 40 percent of the adolescents (table 3) are married off before the attainment of the legal age at marriage, which is 18 years for females. More than 50 percent of the women, who ever marry, do so in their adolescence, except in Punjab (21 percent), and in the north-eastern states of Manipur (19 percent) and Nagaland (12 percent). The lowest proportion of married adolescents at the age of 19 years has been found in Nagaland and the highest in Andhra Pradesh (72.3 percent) followed by Rajasthan (71.6 percent). This proportion is also high for the states of Uttar Pradesh (66 percent), Madhya Pradesh (67 percent) and Bihar (69 percent). Although Maharashtra and Tamil Nadu are having almost the same proportion of married adolescents at age 19, still the pace at which the proportion is rising from age 18 to 19 is essentially different. The proportion increase in married women is doubled in case of Tamil Nadu (from 33 to 58 percent) than in Maharashtra (44 to 56 percent) which signifies that quite a large number of marriages take place at the age of 19 years in the southern state of Tamil Nadu.

Table 2: Median age at marriage for India and the selected states, 1998-99.

States	Age at marriage
India	16.4
Andhra Pradesh	15.1
Arunachal Pradesh	18.7
Assam	18.1
Bihar	14.9
Gujarat	17.6
Haryana	16.9
Karnataka	16.8
Kerala	20.2
Madhya Pradesh	14.7
Maharashtra	16.4
Manipur	21.7
Meghalaya	19.1
Mizoram	22.0
Nagaland	20.1
Orissa	17.5
Punjab	20.0
Rajasthan	15.1
Tamil Nadu	18.7
Tripura	15.6
Uttar Pradesh	15.0
West Bengal	16.8

The proportion married in the age group of 15-19 is highest for the state of Andhra Pradesh (44 percent) and lowest for Punjab (7 percent). The proportion married in the age group (15-19) is also quite high for the states of Karnataka, Bihar, West Bengal, Rajasthan, Madhya Pradesh and Uttar Pradesh where 30 to 37 percent adolescents are married in this particular age group. For the remaining states, more than 70 percent are unmarried in this age group, but for Kerala and the northeastern states of Arunachal Pradesh, Manipur, Mizoram, and Nagaland the proportion of unmarried females is as high as 85 percent.

State wise Age-Specific Marital Fertility Rate (ASMFR) for the 15-19 years age group is given below in table 4. It shows that the ASMFR is highest for the state of Mizoram and lowest

Table 3: Percentage of married by age among the adolescents (15-19 yrs), 1998-99.

States	15 years	16 years	17 years	18 years	19 years	15-19 years
India	10.2	19.4	29.7	47.7	56.7	32.3
Andhra Pradesh	20.2	31.7	46.3	62.8	72.3	43.6
Arunachal Pradesh	5.1	2.3	10.4	25.0	36.2	15.0
Assam	10.2	21.8	29.3	42.9	63.2	23.4
Bihar	13.1	21.5	40.1	52.2	68.5	36.5
Gujarat	6.4	11.1	17.5	34.8	47.4	21.0
Haryana	2.7	13.9	16.8	44.8	53.9	22.3
Karnataka	14.5	16.7	30.9	47.2	52.2	30.0
Kerala	0.6	6.1	11.3	23.3	35.3	14.0
Madhya Pradesh	13.4	29.1	36.7	62.3	66.8	36.6
Maharashtra	9.3	17	22.4	43.8	56	28.1
Manipur	0.9	-	6.1	17.1	18.6	8.6
Meghalaya	1.0	6.0	13.8	13.9	27.5	14.3
Mizoram	1.0	1.1	1.1	17.7	24.2	8.4
Nagaland	6.6	6.3	8.5	25.6	11.6	13.4
Orissa	5.8	9.0	14.8	27.4	40.2	17.0
Punjab	-	2.4	5.1	13.9	21.3	7.40
Rajasthan	16.9	30.9	43.3	66.5	71.6	37.3
Tamil Nadu	3.6	5.3	26	33	57.7	23.5
Tripura	5.3	12.2	21.9	37.3	40.0	22.9
Uttar Pradesh	9.5	20.5	34.2	52.8	65.8	31.4
West Bengal	13.3	27.9	42.9	50.3	56.4	35.9

for the state of Kerala. It is also relatively low for the states of Bihar, Andhra Pradesh, Tripura, Tamil Nadu and Rajasthan, which implies that though the proportion married in these states are higher than that of Punjab, but the rate at which married adolescents are becoming mothers are slower. As in respect to Bihar, Andhra Pradesh, Uttar Pradesh and Madhya Pradesh, marriage of females take place at an early age, therefore the proportion of married adolescent women is large, but it might be that because of adolescent sterility, their contribution towards fertility is little. On the other hand, in the states of Punjab, Tamil Nadu and Gujarat, most of the adolescent marriages take place in the late teen ages, hence females are biologically more mature to conceive and contribute largely towards fertility.

Table 4: Age specific marital fertility for adolescents (15-19) in the selected states, 1998-99.

States	ASFR	ASMFR
India	0.107	0.36
Andhra Pradesh	0.132	0.30
Arunachal Pradesh	0.066	0.44
Assam	0.089	0.38
Bihar	0.113	0.31
Gujarat	0.087	0.41
Haryana	0.092	0.41
Karnataka	0.112	0.37
Kerala	0.039	0.28
Madhya Pradesh	0.142	0.39
Maharashtra	0.129	0.46
Manipur	0.042	0.49
Meghalaya	0.086	0.60
Mizoram	0.054	0.64
Nagaland	0.056	0.42
Orissa	0.079	0.40
Punjab	0.040	0.54
Rajasthan	0.126	0.34
Tamil Nadu	0.083	0.35
Tripura	0.075	0.33
Uttar Pradesh	0.120	0.38
West Bengal	0.107	0.37

Postpartum infecundability

Postpartum infecundability is another very important proximate determinant of fertility. It affects fertility by lengthening the birth interval. It is lengthened if breastfeeding is prolonged and post partum abstinence is practiced. Table 5 shows the distribution of adolescent mothers in the age group 15-19 years by their parity. For most of the states 40 to 60 percent of the women do not have any children in this particular age group and only a few have two children or more. Hence the fertility inhibiting effect of post partum infecundability on adolescent fertility is very small. The median duration of Post Partum Amenorrhea (PPA) in months for different states (table 6) exemplify that it is as high as 12 months for the states of Andhra Pradesh and Bihar and low (5 – 6 months) in case of Kerala, Punjab and Tripura. For rest of the states, the duration ranges from 7 to 10 months. Therefore, it becomes quite apparent that postpartum infecundability does not have that much of an effect in reducing adolescent fertility, because of the negligible proportion of the higher order parity women in the age group of 15-19 years.

Table 5: The distribution of adolescent mothers (15-19) by their parity, 1998-99.

States	0	1	2	3	4	Total
India	52.5	34.7	10.9	1.7	0.2	8276
Andhra Pradesh	49.5 (200)	38.1 (154)	10.6 (43)	1.2 (05)	0.5 (2)	404
Arunachal Pradesh	51.9 (41)	35.4 (28)	12.7 (10)	-	-	79
Assam	50.0 (103)	39.3 (81)	8.3 (17)	2.4 (5)	-	206
Bihar	56.5 (466)	32.7 (270)	9.7 (80)	1.1 (09)	-	825
Gujarat	52.3 (125)	33.1 (79)	10.9 (26)	3.3 (08)	0.4 (1)	239
Haryana	58.2 (106)	35.7 (65)	5.5 (10)	0.5 (01)	-	182
Karnataka	45.4 (194)	37.9 (162)	14.5 (62)	2.1 (09)	-	427
Kerala	73.9 (65)	26.1 (23)	-	-	-	88
Madhya Pradesh	51.6 (49)	33.7 (301)	13.2 (118)	1.6 (14)	-	894
Maharashtra	46.0 (230)	36.2 (181)	15.0 (75)	2.8 (14)	-	500
Manipur	37.0 (17)	43.5 (20)	15.2 (7)	2.2 (1)	2.2 (1)	46
Meghalaya	26.1 (12)	60.9 (28)	10.9 (5)	-	2.2 (1)	46
Mizoram	35.0 (14)	50.0 (20)	15.0 (6)	-	-	40
Nagaland	55.6 (25)	35.6 (16)	6.7 (3)	2.2 (1)	-	45
Orissa	50.7 (152)	37.3 (112)	9.3 (28)	2.7 (8)	-	300
Punjab	57.6 (49)	37.6 (32)	3.5 (03)	1.2 (01)	-	85
Rajasthan	62.3 (378)	30.0 (182)	6.8 (41)	1.0 (6)	0.4 (01)	607
Tamil Nadu	50.2 (122)	39.5 (96)	9.1 (22)	0.8 (2)	0.4 (01)	243
Tripura	51.9 (40)	41.6 (32)	6.5 (5)	-	-	77
Uttar Pradesh	53.7 (599)	33.2 (371)	10.8 (121)	1.8 (20)	0.4 (05)	1116
West Bengal	52.5 (201)	35.0 (134)	11.2 (43)	1.3 (5)	-	383

Spontaneous and induced abortions

The information obtained on abortion from NFHS-2 data (shown in table 7) for adolescent women in the age group 15-19 years presents a distorting picture, if we compare the estimates with the existing literature on abortion of adolescents. A study by Chhabra et al during the period 1976-87 in Mahatma Gandhi Institute of Medical Sciences, Wardha found that 27 percent of the abortion seekers in rural settings are adolescents and the proportion was found to be 30 percent in general hospitals (Solapurkar and Sangam 1985).

So, we cannot use these data to estimate the effect of spontaneous or induced abortion on fertility. In most of the countries, the reporting of non-live births (particularly induced abortions) generally remains undocumented, mostly because of the sensitive nature of the issue and the

Table 6: The median duration of PPA in months for ever-married adolescents (15-19) in different states, 1998-99.

States	PPA (months)
India	9
Andhra Pradesh	12
Arunachal Pradesh	5
Assam	10
Bihar	12
Gujarat	9
Haryana	8
Karnataka	10
Kerala	5
Madhya Pradesh	11
Maharashtra	9
Manipur	8
Meghalaya	11
Mizoram	7
Nagaland	10
Orissa	10
Punjab	5
Rajasthan	9
Tamil Nadu	7
Tripura	6
Uttar Pradesh	10
West Bengal	8

social stigma attached to it. Therefore, it is likely that there is some under reporting of these events in NFHS-2 also. It is difficult to collect information on the number of pregnancies, particularly, pregnancies spontaneously aborted within the first few weeks of conception. Again, the respondents try to depress the information on the incidence of induced abortion and may misreport such cases as spontaneous abortion. The number of total pregnancies and the percentage of all pregnancies that end in spontaneous abortion are almost certainly underestimated, and should not be subject to very intensive interpretation (NFHS-2 Report, 1998-99).

Table 7: Number of spontaneous and induced abortions among adolescents (15-19) in the selected states, 1998-99.

States	No. of spontaneous abortion	No. of induced abortion	Number of pregnancies
India	137	11	4236
Andhra Pradesh	15	1	261
Arunachal Pradesh	-	-	47
Assam	2	2	128
Bihar	8	2	459
Gujarat	6	-	159
Haryana	6	-	89
Karnataka	10	-	316
Kerala	1	-	22
Madhya Pradesh	18	-	573
Maharashtra	13	3	299
Manipur	-	-	32
Meghalaya	1	-	41
Mizoram	-	-	42
Nagaland	-	-	25
Orissa	6	-	186
Punjab	2	-	39
Rajasthan	11	1	280
Tamil Nadu	6	1	137
Tripura	5	-	43
Uttar Pradesh	27	-	655
West Bengal	6	-	195

Use of contraception

Fertility inhibiting impact of contraception is considered to be the most important factor in controlling fertility as it reduces or eliminates the probability of conceiving by adoption of either spacing or terminal methods. Table 8 demonstrates the Contraceptive Prevalence Rate (CPR) among the adolescents at the state and country level and also according to the different method use along with the proportion of women among non-users willing to use contraception. In general, CPR is very low in all the states which ranges from 1.2 (Bihar) to 7.7 (Punjab); implying that the fertility inhibiting effect of contraception is almost insignificant in this age group. As the prevalence of CPR was very low, it was further investigated in NFHS-2 (1998-99) why they do not use contraception. The main reason (table not shown) cited was that women want children, which is obvious in the newly wedded status of marriage. Moreover in the Indian society, there is a constant pressure from the in-laws of the recently married brides to produce children.

Table 8: The Contraceptive Prevalence Rate (CPR) among the currently married adolescents (15-19) in the selected states with types of method use, 1998-99.

States	CPR	Pill	IUD	Condom	Sterilisation (male and female)	Proportion willing to use
India	4.7	1.3	0.5	1.4	1.5	67.9
Andhra Pradesh	7.4	0.9	0.3	0.2	5.9	68.4
Arunachal Pradesh	9.5	8.1	1.4	-	-	69.9
Assam	5.3	3.5	0.4	1.5	-	38.0
Bihar	1.2	0.6	0.0	0.4	0.2	72.8
Gujarat	6.5	0.9	1.7	2.6	1.3	80.6
Haryana	3.8	1.1	0.5	1.1	1.1	86.9
Karnataka	5.1	0.5	1.5	0.3	2.8	73.1
Kerala	3.3	0.0	0.0	3.3	0.0	47.9
Madhya Pradesh	6.2	0.9	0.9	1.2	3.2	83.9
Maharashtra	9.1	4.6	4.5	-	-	62.3
Manipur	3.0	3.0	0.0	-	-	27.3
Meghalaya	14.9	12.5	2.3	-	-	63.8
Mizoram	4.3	0.3	0.4	2.5	1.2	84.8
Nagaland	0.0	-	-	-	-	53.6
Orissa	3.3	2.2	-	0.4	0.7	66.3
Punjab	7.7	1.3	2.6	3.8	0.0	79.7
Rajasthan	2.9	1.0	0.0	1.7	0.2	67.0
Tamil Nadu	5.0	0.0	1.1	0.5	3.4	73.8
Tripura	14.5	10.6	-	2.6	1.3	55.8
Uttar Pradesh	2.5	0.8	0.0	1.7	0.0	60.7
West Bengal	10.9	6.5	1.1	2.3	0.9	46.3

Reproductive health problems

Absence of reproductive tract infections (RTIs) is essential for the reproductive health of adolescents and is critical for the ability to meet their desired reproductive goals. If left untreated, RTIs can cause pregnancy related complications, infertility and chronic pain. There are also other risk factors for pelvic inflammatory diseases and HIV (Population Council 1999). It has been shown in a number of studies that a large proportion of Indian women suffer from RTIs and majority of them often bear the symptoms silently without seeking proper and timely health care (Bang et al 1989; Bang and Bang 1991; Pachauri and Gittlesohn 1994; Jeejeebhoy and Rama Rao 1992). Adolescents are more vulnerable to get infected by different RTIs because of their lack of knowledge and awareness about reproductive morbidity. NFHS-2 (1998-99)

Table 9: Percentage of ever-married women reporting abnormal vaginal discharge or symptoms of a urinary tract infection during the three months preceding the survey and percentage of currently married women reporting painful intercourse or bleeding after intercourse among adolescents (15-19), 1998-99.

States	Ever married women										Currently married women				
	Vaginal discharge accompanied by										Painful intercourse	Bleeding after intercourse	Any reproductive health problem	Number of currently married women	
	Any abnormal vaginal discharge	Itching or irritation	Bad odour	Severe lower abdominal pain	Fever	Other problem	Symptoms of a urinary tract infection	Number of ever married women							
India	26.2	14.4	10.2	17.3	7.1	5.8	16.1	8182	16.9	3.7	37.9	8014			
Andhra Pradesh	38.7	15.1	7.4	30.2	8.6	9.4	18.6	425	21.9	4.3	52.1	417			
Bihar	24.4	13.0	10.2	15.4	6.5	6.4	19.7	825	13.9	2.8	36.9	802			
Gujarat	27.6	19.2	10.8	16.8	8.0	5.4	9.7	240	13.9	4.8	35.0	232			
Haryana	23.1	16.5	12.7	14.3	3.3	2.7	9.3	182	19.7	3.3	35.3	181			
Karnataka	8.6	5.2	1.4	4.6	.7	2.8	4.4	427	3.2	.2	13.5	414			
Kerala	17.1	10.0	4.20	7.3	1.3	1.3	15.0	89	22.2	7.0	39.0	89			
Maharashtra	26.6	17.0	9.5	14.8	8.3	11.0	20.1	499	15.5	2.5	38.3	490			
Madhya Pradesh	29.4	17.5	13.1	18.0	10.6	5.40	21.2	894	19.5	5.3	41.3	868			
Orissa	18.6	8.9	4.8	13.4	4.3	2.6	13.2	300	18.1	5.7	33.7	293			
Punjab	23.6	16.0	11.1	12.8	0.0	0.0	7.30	85	6.4	1.3	26.3	84			
Rajasthan	26.3	17.6	10.6	16.7	4.8	3.6	13.4	609	12.6	3.0	34.7	604			
Tamil Nadu	15.6	6.8	2.0	10.1	3.4	1.4	11.4	245	31.9	2.0	28.5	242			
Uttar Pradesh	21.3	13.6	11.9	14.1	7.6	5.8	13.4	1117	18.8	3.6	33.5	1102			
West Bengal	35.2	17.1	14.8	24.4	6.6	2.3	18.1	383	19.9	4.0	47.5	375			

** Data for the north-eastern states have been excluded due to small sample size.

collected information from women (15-49) on some common symptoms of RTIs such as problems with abnormal vaginal discharge or urinary tract infections in the last three months preceding the survey, intercourse related pain (often) and bleeding (ever). The estimation of the prevalence of such reproductive health problems among the ever-married women have been done on the basis of self-reported symptoms and hence may not reflect the actual situation as no clinical tests or examinations were conducted.

The prevalence of any reproductive health problem, as well as the prevalence of different types of these problems among adolescent married women has been enlisted state wise in table 9 (excluding the seven states of northeast India). Since these prevalence rates are based on self-reports and because of the willingness of the women to talk about and report their reproductive health problems, variation by state is obvious. Again, because a large majority of ever-married women are also currently married, there is slight difference in the estimates of prevalence of problems related to vaginal discharge and symptoms of urinary tract infections for currently married women and ever-married women.

A closer look at the estimates will reveal that the percentage of currently married women with any reproductive health problem varies considerably from 26 percent in Punjab, 48 percent in West Bengal and a low of 14 percent in Karnataka. Considering India, the overall figure is 38 percent and in all the other states at least one third of the women report one or more of such problems, the percentage being very high in case of Andhra Pradesh (52 percent). The proportion of currently married women who often experience painful intercourse ranges from 3 percent in Karnataka to 32 percent in Tamil Nadu and the percentage who ever experienced bleeding after intercourse varies from a low of 0.2 percent in Karnataka to 7 percent in Kerala. These higher percentages in the southern states may be simply because of the reporting bias on part of the women.

Women are much more likely to open up and report problems of vaginal discharge than to report symptoms of urinary tract infection or problems related to intercourse. Nonetheless, there is substantial variation by states in the prevalence of each of these different reproductive health problems. Almost one-third of the ever-married women in all the north Indian states report at least one reproductive health problem related to vaginal discharge, whereas this percentage is lower for the south Indian states, except Andhra Pradesh (39 percent). The percentage of women reporting symptoms of urinary tract infection is about 21 percent in Madhya Pradesh closely

followed by West Bengal (18 percent). The prevalence of these different types of reproductive health problems is pertinently low in Karnataka with only 4 percent of ever-married women reporting any symptom of urinary tract infection.

Summary and conclusion

Among the proximate determinants of fertility, age at marriage was found to affect adolescent fertility most significantly. Though the proportion married is much higher in the northern states than its southern counterparts, there are exceptions like Andhra Pradesh and Punjab. The marital fertility rate is much higher in the southern states compared to the states in the north, so the proportion married along with ASMFR are affecting the fertility performance of adolescent women. It has also been found that contraceptive prevalence is very low in the states of Bihar, Uttar Pradesh, Rajasthan and Haryana compared to Punjab, Andhra Pradesh, Gujarat and Maharashtra. But still then the situation is not satisfactory in the latter cases also. The post partum infecundable period is much higher in case of Andhra Pradesh, Bihar and Uttar Pradesh compared to Punjab, Kerala and Haryana. Since most of the married adolescents do not have children and only a few are in higher parity, so PPA do not significantly affect the adolescent fertility. In NFHS-2 (1998-99), the abortion statistics in case of adolescent women is very unreliable and hence the information on the effect of abortion on reducing fertility among adolescents is negligible. In respect to reproductive health problems, more than two-thirds of the women in the north are reporting one or any of the problems compared to others. The prevalence of such problems is quite low in case of the southern state of Karnataka while considering 38 percent for the country as a whole. In the northern zone, Punjab and Haryana have an edge over the other states.

On a final note, it can be added that in order to mobilize resources for family planning methods, it is imperative to have an idea about the proportion of adolescent married females in this particular age group and then to address their needs. In many cases, legal frameworks and administrative arrangements exist to provide adolescent girls with essential services but the problem is more with the implementation of the policy than of making it. Therefore investments in adolescents must be strategic.

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