ADOLESCENT FERTILITY IN INDIA: A COMPARATIVE ANALYSIS OF MADHYA PRADESH, ANDHRA PRADESH, PUNJAB AND KERALA BASED ON NFHS DATA

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CERTIFICATE

This is to certify that the dissertation entitled "Adolescent Fertility in India: A comparative analysis of Madhya Pradesh, Andhra Pradesh, Punjab and Kerala based on NFHS data" submitted by Ms. ABHILASHA SHARMA in partial fulfillment of six credits out of total requirements of twenty four credits for the degree of Master of philosophy of the University is to the best of my knowledge a bonafide work and may be placed before examiners for evaluation.

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Chapter I

Introduction

*"There are more than one billion young people
in the world today aged between 15-24 years -
the largest generation ever".*

- Nafis Sadik

Adolescents constitute an important section of society. But, until recently it was not realized that this sub-group of population not only has special needs for education and employment but also for health care especially, reproductive health care. At the International Conference on Population and Development, the international community for the first time recognized formally that adolescent reproductive and sexual health involves a specific set of needs distinct from adult needs (UNFPA, 1997).

Today about fifteen million children are born annually to women aged 15-19 years throughout the world and around eight out of every ten births are to adolescents living in developing countries in Asia, Africa and Latin America (Mc Devitt, 1996). In the developed countries, though the adolescent fertility rates among married women are much lower and declining, there is a concern with rising rates of premarital sexual activity among young adults with falling age at puberty and rising age at marriage more and more young adults are

beginning sexual activity at much younger ages. In United States, which has the highest rate of teen childbearing among developed countries, the proportion of teen births occurring outside of marriage has risen 50 percent since 1980 (Noble, et.al., 1996). As a result, today a large number of births to young women are unintended. Multiple and unprotected sexual relations also result in increased risk of Sexually Transmitted Diseases and HIV infection. Teens aged 15-19 have the second highest rate of infection from STD's including HIV (Parikh, 1998).

On the other hand, in developing countries where most of the sexual activity of young women takes place within marriage, adolescent fertility rates remain high. The demographic and health surveys conducted between 1990-94 in various developing countries indicate that unintended or unplanned pregnancies are not rare even in those societies where early marriage and childbearing are normally practiced. For example, in Bangladesh 31 percent and in India 16 percent of current pregnancies among ever married young women were unintended (McCauley and Salter, 1995). Thus, births to women below 20 years of age, both married and unmarried are often unplanned and these births if postponded can lead to substantial decline in the adolescent fertility rate.

But the effects of teenage childbearing are not only demographic. A relatively high level of adolescent fertility in developing countries such as India requires

the urgent attention of policy makers not only because of the fact that 17 percent of all births in India occur to adolescent women but also due to its serious health and socio-economic consequences. For a young woman pregnancy elevates the risk of injury, illness and death for both mother and infant (Population Council, 1996). Data collected in National Family Health Survey (NFHS) show that one in every nine pregnancies to adolescent women in India results in pregnancy wastage (spontaneous abortion, induced abortion or still birth). Out of the total pregnancy wastage of 11.3 percent, spontaneous abortions alone account for 7 percent of pregnancy loss among adolescents. Too-early or unwanted pregnancy often leads to induced abortion and its complications which are among the main causes of death for women under age 20. Moreover, it is also an indicator of prevalence of high degree of unmet need for family planning among adolescent women. As most of these women who resort to abortion would use contraception if given a choice. Not only is the pregnancy wastage among teenage women is very high, infants who are born alive to adolescent mothers face higher risks of illness and death than those born to women in their 20's. According to NFHS, the neo-natal mortality rate among women under age 20 is 71 per 1000 live births and the infant mortality rate is 107 per 1000 live births.

Beginning early parenthood also means lost education. The data collected in NFHS show that in India

only 33 percent of women aged 15-19 years are literate and out of these only 13 percent have completed primary school, 5 percent of these women have finished high school and only 0.2 percent are able to reach the educational level of above high school. The level of literacy is much lower in rural than in urban areas. In addition, early childbearing also worsens a young woman's economic prospects. Moreover, the use of contraception among adolescent women is also deplorably low as they lack information about what services exist and how to use them.

Thus, "the contemporary socio-economic and demographic conditions have conspired to make what was once simply a traditional life event into one with far reaching adverse effects on the adolescent mother, her child and the society as a whole" (Remez, 1989).

Adolescent Fertility Scenario in India

As can be seen from Table 1.1, during the last twenty years, data collected in NFHS show that the adolescent fertility rate (number of live births per 1,000 women aged 15-19 years) in India has declined. Two decades ago, the rate in India was 166 which has shown a slight increase and then a constant decrease. In rural areas of the country also the rate has shown a declining trend. There has been a decrease from a level of 181 in 1973-77 to 131 in 1992-93. But despite this decline, high

levels of teenage childbearing still persists in India. Data show that the current adolescent fertility rate in India is 116 and this rate is substantially higher compared with other developing countries.

Table 1.1 Trends in Adolescent Fertility Rate (15-19 years) by Residence

Year	Total	Rural	Urban
1973-1977	166	181	129
1978-1982	172	190	128
1983-1987	162	181	114
1988-1992	121	137	79
1992-1993	116	131	75

Source: International Institute of Population Science (IIPS), 1995. National Family Health Survey, India, 1992-93.

It can be seen from Table 1.2 that in terms of adolescent fertility rate, India ranks only next to Bangladesh in the Asia Pacific region.

Table 1.2: Adolescent Fertility Rate (15-19 years) in Asia and Pacific Region

Country and year of Survey		Birth per 1000 women aged 15-19
Bangladesh	1993-94	159
India	1992-93	116
Indonesia	1991	70
Pakistan	1990-91	84
Philippines	1993	52
Sri Lanka	1987	38
Thailand	1987	52

Source: McCauley and Salter, Population Reports, 1995.

Also, data from sample Registration System (SRS) show that adolescent fertility rate in India for 1992-93 is 242. The adolescent fertility rate from SRS in relatively much higher suggesting that India may have the highest fertility in Asia-Pacific region. In fact, if adolescent fertility rate from SRS is closer to reality then India may rank as one of the countries of the world with a very high adolescent fertility rate.

As can be expected, there is a large variation in the adolescent fertility rate in the different states of India. Table 1.3 clearly shows that unlike TFR, Adolescent Fertility Rate (AFR) in India does not show a distinct north-south divide. Early childbearing is particularly high in Madhya Pradesh, Haryana, Bihar, Andhra Pradesh, Karnataka, Maharastra and West Bengal where the rate is above 120 births per 1000 teenage women, the highest being in Madhya Pradesh (153 births per 1000 women). Other northern states of Uttar Pradesh and Rajasthan and the northeastern states of Arunanchal Pradesh and Assam recorded a rate of more than 100 births. At the other extreme are Goa, Manipur and Kerala where the rate is below 40. Among these states Goa has the lowest level of only 16 births per 1000 adolescent women.

The table also shows that there are large differentials in the levels of teenage childbearing between rural and urban areas. The rate in rural areas is

74 percent higher than in urban areas. A similar pattern is found in almost all the states. For instance in Maharastra, the rate in rural areas is 183 as against only 88 in urban areas. Similarly, Haryana and Madhya Pradesh have rural urban differentials of more than 90 points. On the other hand, in urban areas, Karnataka reported the highest level of teenage childbearing with 94 births. The rate in urban areas is also high in Madhya Pradesh, Bihar, Maharastra, Andhra Pradesh and West Bengal. Contrary to the expected pattern, in Goa and Mizoram the adolescent fertility rate in urban areas is higher that that in rural areas.

Table 1.3: Adolescent Fertility Rate (15-19 years) by Residence, 1992-93.

State	Total	Rural	Urban
Andhra Pradesh	144	164	85
Arunachal Pradesh	115	118	-
Assam	116	122	70
Bihar	121	127	89
Delhi	66	-	61
Goa	16	11	19
Gujarat	86	96	63
Haryana	143	166	75
Himachal Pradesh	75	80	23
Jammu and Kashmir	54	58	26
Karnataka	129	147	94
Kerala	38	40	33
Madhya Pradesh	153	173	92
Maharastra	141	183	88

Manipur	37	33	30
Meghalaya	79	86	46
Mizoram	46	39	53
Nagaland	57	64	26
Orissa	86	89	70
Punjab	65	74	41
Rajasthan	112	124	63
Tamil Nadu	87	99	63
Tripura	85	91	-
Uttar Pradesh	113	128	62
West Bengal	123	140	83
India	116	131	75

Source: International Institute of Population Sciences (IIPS), 1995. National Family Health Survey, India, 1992-93.

- based on 25-49 cases.

The above data demonstrate the gravity and urgency of the problem in India. Today, there is a growing realization towards the need to reduce AFR in India. The adolescents in India are not only underserved by the reproductive health needs but also by the social science research (Jejeebhoy, 1996). Population policies and programmes in India have consistently focussed on the reduction of TFR and the services are generally designed for adult women or children. Young women have been largely left out particularly because the policies and programmes do not focus on adolescent women as a distinct audience and thus, expect young women to use the same services as other clients use.

Furthermore, despite the widespread interest which has been generated in adolescent fertility in the recent years, little attempt has been made to analyze adolescent fertility in India and in its states. This relative lack of research on adolescent fertility may be partially due to non-availability of data on the reproductive behaviour and attitudes of adolescent women in India. An important source of data on fertility is SRS but it provides only limited information on the subject. The data recently collected in the NFHS provides us an opportunity to analyse adolescent fertility. This study is an attempt to fill a gap in the literature on adolescent fertility in India.

About the Study

The study is a comparative analysis of adolescent fertility in four states: Madhya Pradesh, Andhra Pradesh Punjab and Kerala. These four states have been selected on the basis of their adolescent fertility rates. Among the fifteen major states (Table 1.3), Madhiya Pradesh and Andhra Pradesh have the highest rates and Punjab and Kerala have the lowest rates. Even if we look at the adolescent fertility rates (15-19 years) of these states relative to 20-24 years or for all the reproductive ages (15-49 years), these four states have the highest and the lowest adolescent fertility rates. As two of the states are from the northern region and two belong to the southern region, the study also examines the factors

responsible for the variation in the level of adolescent fertility in both between and within the two regions.

The study is divided into six chapters. Following an introductory section, Chapter II of the study presents literature review. This Chapter focuses on studies conducted on adolescent fertility. Chapter III presents a conceptual framework which explains the relationship between adolescent fertility and the factors that influence it. This Chapter also includes methodology used in the study, hypotheses which have been formulated and data base of the study. Chapter IV presents the empirical results of the study. The conclusions and policy implications drawn from the study are presented in the concluding chapter.

Chapter II

A Review of Literature on Adolescent Fertility

Adolescent fertility is relatively a new subject in developing countries especially in India. In the developed countries, particularly in the United States, however, adolescent fertility has been extensively studied. In the review of literature that follows we attempt to draw upon the findings that are available to us from the developing world especially, India. But because of the nature of the subject we have reviewed the relevant literature from the other countries as well. This review of literature is divided into two parts. In part I we present literature related to determinants while in Part II the consequences of teenage pregnancy are discussed.

I. Determinants of Adolescent Fertility

The section on determinants of adolescent fertility considers four major determinants. They are the marriage patterns, use of contraception, abortion practices and socio-economic determinants.

(a) Marriage patterns

As most of the adolescent fertility in developing countries such as India occurs within marriage, the timing of marriage is viewed as the most important factor

in determining adolescent fertility rate. In India marriage is considered universal and girls are married at a younger age to protect girl's and family's honour. Islam and Mahmud (1996) contend that in rural Bangladesh parents of pubescent girls remain under the societal pressure to marry off their daughters as soon as possible and are criticised if they do not conform to the norms. On the basis of 1989 Bangladesh Fertility Survey, they reported that around 96 percent of girls were married before age 20 with most of such marriages taking place between 13-16 years. They found that the average age at marriage in Bangladesh is only 14.8 years.

Also as soon as a girl is married, she is expected to conceive in order to prove her fertility and consolidate the union. According to Mandelbaum (1974), "as soon as a young woman is married, the whole pressure of her husband's family and the expectations of natal family are that she will become pregnant as soon as possible and, having borne one child, will bear more." (p. 16)

Sendortwitz and Paxman (1985) showed that rates and levels of adolescent fertility largely reflect marriage patterns as the high proportions of married teenagers and low age at marriage have been generally associated with high rates of adolescent fertility. They substantiated this hypothesis by taking an example of Bangladesh, a country which has the highest known proportion married in

the 15-19 year age group and the lowest mean age at marriage (11.6 years) in the world. Consequently, the adolescent fertility rate (number of births per 1000 women aged 15-19 years) of Bangladesh is as high as 253.

In a study of status of married adolescent girls in the three districts of Madhya Pradesh, Rajagopal and Philip (1995) observed that marriage age of women is the most important factor in determining the level of fertility whereas educational and employment status before marriage determine the female age at marriage. They found that a quarter of the adolescent girls were married and the proportion of ever married teenage girls was significantly higher in rural than in urban areas. The mean age at marriage was found to be 15 years.

Similarly, in a study of teenage fertility of rural females in eastern Uttar Pradesh, based on data collected in three large scale demographic surveys in 1969, 1978 and 1987, Yadav (1995) found low age at marriage as an important determinant of overall high rate of teenage fertility. According to him the average age at marriage for females in Uttar Pradesh is still below 18 years. A number of socio-cultural constraints inhibit the increase in marriage age. Daughters in eastern Uttar Pradesh are considered other people's wealth (paraya dhan) who have to be married off as early as possible. In addition, illiteracy or low educational status and domestic work as the main occupation also promote lower marriage age.

Bhatia and Chandra (1993) pointed out that in India adolescent pregnancies make up 10 to 15 percent of the total pregnancies and they largely attributed it to early marriage. According to them early marriage leads to long fertility periods resulting in a large number of surviving children.

(b) Use of contraception

Another important variable affecting adolescent fertility is the use of contraceptive methods. A rise in contraceptive prevalence has been the principal cause of fertility decline.

According to Macauley and Salter (1995) the use of contraception is lower among young people compared with adults, even within marriage. For young married couples this may be due to the desire to have a child or because the marriage has resulted from premarital pregnancy. It is only after the first birth, some women begin using contraceptives to space the next birth. Moreover, unmarried women who face additional barriers to obtaining contraceptives, such as social disapproval, are even less likely to use contraception than young married women. In their study of ever use of contraception among married women aged 15-19, they found that only 12 percent of women in India have used any method of family planning. This percentage is lowest for Pakistan (2%).

The most common reason cited for low levels of contraceptive use among young women is the lack of knowledge about contraceptives. Saez (1994) has pointed out that although adolescents in Venezuela mature early, they are not informed about sexuality, reproduction or contraception. Little attention is given to sexuality in the curricula even of medical schools. A survey by Venezuela's Ministry of the Family estimated that fewer than 7 percent of adolescent couples use contraception.

Similarly, Agyei and Epema (1992) in their study of sexual behaviour and contraceptive use among 15-24 year olds in Uganda observed that young people often know little or have incorrect information about fertility and contraception. Even when young people can name contraceptives, they often do not know where to get them and how to use them.

On the other hand, in a study of adolescent contraceptive use and its determinants in Bangladesh based on 1989 Bangladesh Fertility Survey, Mahmud and Islam (1995) found that the lack of knowledge does not appear to play a role in this pattern since awareness of contraceptive methods is almost universal among adolescents. According to them, the low contraceptive prevalence rate for married adolescent women (only 15.3%) seem to reflect socio-economic and cultural factors. The use rate was 29 percent among adolescents with a higher secondary and above level of education compared to 10.3

percent among those with less education. In the logit regression analysis they identified education, participation in family planning decisions, visits from family planning workers, administrative divisions, husband's occupation and electricity in the household as significant predictors of adolescent contraceptive usage.

Rajagopal and Philip (1995) in their survey regarding the status of married adolescent girls in three districts of Madhya Pradesh also showed that the lack of knowledge is not as important a factor as generally believed in determining the contraceptive usage among adolescent women. In their study they found that 92 percent of the adolescents knew at least one modern contraceptive method and 83 percent knew at least one modern method of birth spacing. But only 19 percent of the married teenagers had ever used a contraceptive method and only 10 percent were currently using any method of family planning.

These studies show that there is a wide gap between knowledge and practice of contraception among adolescents. The mere knowledge of contraception does not mean that the young women actually use it. According to Sendorwitz and Paxman (1985) even when young adults know about contraceptives, few use them as motivation or access to use it are lacking.

In an Indian survey conducted in 1988, Bhattacharya and Joshi (1995) reported that only 8.6 percent of girls aged 15-19 years were using contraception. They observed that most of the adolescent contraceptive use was among married girls and girls living in urban areas.

Macauley and Salter (1995) contend that even when young people have information about contraceptives and access to services, many contextual factors affect their contraceptive practices. For example in many cultures sex-related issues are rarely discussed even between spouses.

Billy et al., (1994) in study of contextual effects on the sexual behaviour of adolescent women have pointed out that the extent of communication between partners, attitudes about social and sexual roles and the taboo nature of their sexual activity all influence young adults' sexual decision making. Rajagopal and Philip(1995) in their study of Madhya Pradesh contend that husband-wife communication regarding the number of children desired was only 38 percent among teenagers compared with 50 percent among those aged 20-44 years.

According to Pathak and Ram (1993) the reproductive behaviour of an adolescent women is also influenced by the attitude and behaviour of her parents, kin and the society at large, towards childbearing. As most adolescent girls are illiterate they lack knowledge of

family planning methods. Even if they are aware of contraceptives, they do not have access or unable to utilise them. It is due to the fact that as soon as they are married they are under tremendous pressure to attain motherhood to satisfy their mothers-in-law or husbands.

Rutenberg and Watkins (1996) mentioned that in Kenya mothers-in-law prevent some women from using contraception because they think that it would weaken the control of the husband's family or that their daughters-in-law should not expect anything different from their own experience. According to Jeejebhoy (1996) in India adolescent girls have no say in the reproductive decision making : matters relating to marriage, sexual relation, contraception and reproduction. Sexual relations are considered as a prerogative of men and contraceptive and reproductive decision making rests with either husbands or other elder members of the family.

Bergnaza et al.,(1989) in a study of sexual attitudes and behaviour of Guatemalan teenagers observed that some men and women themselves may disapprove of contraception because they believe it encourages women to promiscuity. Barker and Rich (1992) emphasised the role of negative attitudes about contraceptives as major hindrance in its use by young adults. They found that students in Kenya and Nigeria had heard about contraceptives but incorrectly cited dangerous side effects.

(c) Abortion practices

In order to get rid of unintended pregnancy, young
women often resort to abortion. According to Macualey and
Salter (1995) estimates of abortions among women under
age 20 years in developing countries range from 1 million
to 4.4 million a year. In a study of Sholapur hospital
setting *Solapurkar and Sangam* (1985) found that out of
1684 abortion seekers around 499 (30%) were adolescent
women.

Although abortion is helpful in terminating an
unwanted pregnancy, attempts to induced abortion is one
of the leading causes of death for women under age 20
years. Brabin et al.,(1995) noted that unsafe abortion to
adolescent women often results in life long disability,
infertility, or death. Hirsh and Barker (1992) observed
that women under age 20 years account for more than their
share of abortion complication cases and related deaths
reported by developing country hospitals. According to
Bledsoc and Chonen (1993), young married women are more
likely than older women to seek abortions from untrained
providers and to attempt dangerous, late and often self-
induced abortions.

(d) Other socio-economic determinants of adolescent fertility

Several socio-economic factors also act as
determinants of early marriage and childbearing.

According to Maculey and Salter (1995) women who attain more formal education are more likely to delay childbearing, as well as marriage, than their peers with little or no schooling. A similar view has been expressed by Barker and Rich (1992) who believe that women who leave school early, whatever the reason, usually marry and begin childbearing within a year.

In a study Bhattacharya and Joshi (1995) argued that early marriage is still practised in the northern states of India where the educational level of the girls is low. According to them findings of a survey showed that from four northern states only 25 percent of girls aged 10-14 years were enrolled in school compared to 84 percent in Kerala. Findings also indicated that 82 percent of rural and urban teenagers who delivered in hospitals were illiterate.

Aras (1992) observed that the states of Bihar, Rajasthan, Madhya Pradesh and Uttar Pradesh account for 50 percent of the girls who are married off before age 16. She argued that low levels of female literacy is associated with early marriages, which expose girls to pregnancy in their teen years. Female literacy according to her is particularly important both for utilisation and provision of medical, health and social welfare services. She also found that poverty associated with adverse socio-cultural practices and low status of women aggravates malnutrition and anaemia in pregnant women.

Mahmud and Islam (1996) in their logistic regression analysis of various socio-economic differentials of adolescent marriage identified education, region of residence, place of residence, work status, husband's occupation and education as important covariates of teenage marriage.

II. **Consequences of teenage pregnancy**

This section discusses various health socio-economic and psychological consequences of teenage childbearing.

(a) **Health consequences**   TH-6913

In the literature considerable attention has been given to the biological or health risks of teenage childbearing. Due to multiple and unprotected sexual exposure women in their teens face a grave risk of being infected with STD's including HIV/AIDS. The cervical mucus of young women makes them more susceptible to various venereal diseases. The STD's also causes various pregnancy related complications, sepsis, spontaneous abortions, premature birth, stillbirth and congenital infections (UNFPA, 1997). Verkuyl (1995) in a recent study in Zimbabwe found that around 30 percent of pregnant girls aged 15 to 19 years were HIV positive.

In a study of adolescent motherhood and maternal mortality in India Pathak and Singh (1994), estimated 469 maternal deaths per 100,000 live births during 1986-90

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and maternal mortality among adolescents aged 15-19 years was very high at 965 per 100,000. According to them about 29 percent of maternal deaths in India occurred among women aged 15-19 years.

In a retrospective study of 2730 pregnancies to females aged 12-19 years in 1978-82 at West Bengal's Drugapur sub-divisional hospital, Mishra and Dawn (1986) also found that complications of pregnancy such as anaemia, spontaneous abortions, eclampsia and premature labour were significantly higher among teenagers than their counterparts in the 20-30 age group. Teenagers also had a significantly higher incidence of maternal mortality rate and perinatal mortality rate and premature infants. Thus these findings confirm that teenage pregnancies carry a high risk.

Kushwaha et al., (1993) examined the perinatal mortality and morbidity among adolescent pregnancies in the semi-urban population of Gorakhpur. Of 430 married adolescent girls, 242 (56.3%) became pregnant during the study period. They found that the incidence of low birth weight babies was 67.3 percent of all live births. Infection during the neonatal period, congenital anomalies, and birth injuries were seen in 21.6 percent, 8.6 percent and 13.1 percent of new born babies respectively. The neonatal mortality rate was 136.2 per 1000 live births. Three adolescent mothers died due to pregnancy related causes. Thus, the incidence of low

birth weight, neonatal and maternal morbidity and mortality associated with adolescent pregnancies were significantly higher.

According to Lovel (1988) in the three studies which were carried out in developing countries - Bangladesh, Cameroon and Sierra Leone - all showed high rates of pregnancy wastage which is usually associated with the mother being too young, underweight, or not fully recovered from a previous pregnancy. Of 107 women in the Bangladesh study, 13 percent of the 280 pregnancies reported resulted in miscarriage or stillbirth. In Cameroon 61 of 259 pregnant girls aged 13-19 were having their second or third pregnancy. 20 percent of last pregnancies ended in induced abortion, miscarriage, stillbirth or a premature baby who soon died. A further 11 percent were born full term but died later. 15 percent of 200 women questioned in Sierra Leone had lost their pregnancies. Of 791 pregnancies, 40 had been wasted. 191 of the babies born alive had died.

Pratinidhi et al.,(1990) Investigated a sample 5994 deliveries in the rural health district area of Sirur, Maharastra state. They observed that adolescent pregnancies to women under 20 years old amounted to 10 percent of all deliveries. They found perinatal mortality rate among teenage mothers under 18 years was 67.2 per 100 births and neonatal mortality rate was 61.4. Statistically significant differences were found in the

rate of low birth weight infants, still births and late neonatal deaths among women aged under 18 years compared to other women.

According to Aras (1992) in a slum area of Bombay, teenage pregnancy appeared to be a risk factor for low birth weight when compared with pregnancies of women 21-30 years old. The incidence of low birth weight babies in India range from 30 percent to 40 percent and they account for over 80 percent of neonatal deaths. Perinatal mortality rates for Indian teenage pregnancies vary between 6 percent and 11 percent and the incidence of premature labour in teenagers in various Indian studies ranges from 11 percent to 31 percent.

McAnarney (1987) showed that young maternal age has been associated with adverse neonatal outcome, particularly an increased incidence of neonatal mortality. Young adolescents and multiparous adolescents are at particularly high risk: 13.8 percent of the infants born to women under 15 years of age weigh less than 2500 gm at birth compared to 5.8 percent of the infants of women 25-29 years old. Moreover, the infants of adolescents under age 15 years are nearly three times as likely to die than are infants born to women of all ages.

K.A Crews (1989) also found that pregnant teens are at greater risk of toxaemia, anaemia, long and difficult

labour, premature delivery and maternal mortality, while infants born to teen mothers are more likely to be of low birth weight, stillborn, to have developmental problems, and to die in infancy. These problems are exacerbated by a tendency on the part of the pregnant teenagers to be undernourished.

Frish (1978) in her study of population, food intake and fertility found that malnutrition inhibits reproductive performance as it elevates the risk of spontaneous intrauterine mortality and the incidence of an novulatory cycles. Robey et al.,(1992) observed that generally adolescent women in developing countries do not receive any prenatal care. Similarly, Sendorwitz and Paxman (1985) also reported that adolescents tend to seek prenatal care much later than older women.

(b) Socio-economic and psychological consequences

In addition to medical risks, often there are severe social and psychological consequences of early pregnancy. Bouge (1976) argued that in those societies where out of wedlock pregnancy is socially unacceptable, a teenage mother faces permanent rejection and is regarded as a "second class citizen". On the other hand, according to Steienberg (1981) even in societies where social approval is given to teenage pregnancies through the custom of early marriage, implications for teenage mothers are enormous.

Crews (1989) observed that early childbearing not only forecloses many job opportunities for teen parents but it also tends to force them into poverty, which has further deleterious effects on the health of mother and child. On the societal level, studies have shown that families started by younger parents are likely to be larger than those started by older parents. The tendency for teenage parents and their children to fail to reach their full potential represents a loss on both the individual and societal levels.

Bhatia and Chandra (1993) contend that as an adolescent girl herself requires care and attention, she is still not prepared for motherhood and thus she can only play a poor parental role. According to them pregnancy in adolescence can lead to poverty, deprivation, insecurity, lack of parental love and disturbed emotional background of the family.

According to Aras (1986) evidence from studies conducted in the US and UK confirms that marriages to women under 20 are especially vulnerable to divorce. She found that when bride is 17 years old or even younger she is three times more likely to be separated from her husband than those who marry after attaining 20 years of age. Teenage pregnancies can be reduced, if not altogether avoided, through better education and preventive services.

Islam and Mahmud (1996) used data from the 1989 Bangladesh Fertility Survey to examine marriage patterns among adolescents. They found that about 13.9 percent of marriages were dissolved among women who married before the age 20 years and 46 percent remarried. They concluded that adolescent marriages were relatively unstable compared with those of adults as they found a comparatively higher marital dissolution rate among women who married before age 20 years.

According to Singh (1992) who related adolescent reproductive behaviour and women's status, early marriage, independent of early motherhood may reduce a woman's status by continuing a pattern of familial control. A woman's power may also be limited if she marries earlier. Early motherhood reduces a woman's status by limiting her chances to attain education and reducing her ability to gain economic status.

The above review of literature clearly brings out that age at marriage, use of contraception and abortion are the important determinants of adolescent fertility. The socio-economic status of an adolescent also influences fertility. The consequences of teenage childbearing have been well documented in the literature. Women who give birth in their teens suffer from severe health problems. children born to teenage women also face a very high risk of morbidity and mortality. The social

and psychological consequences of teenage pregnancy are rather enormous. An adolescent woman who becomes pregnant also faces severe economic hardships for day to day existence.

Chapter III

A Conceptual Framework for the Analysis of Adolescent Fertility

In this chapter, based on the review of literature, we have developed a conceptual framework for analysing adolescent fertility. The conceptual framework that we have developed is shown in fig. 3.1.

As can be seen from the figure, adolescent fertility is influenced by a number of concepts which are interrelated with each other. Each of the concept can be defined in terms of a number of variables. The socio-economic characteristics of women include place of residence, education and caste. Women's exposure to the outside world represented by three means of mass media communication - radio, television and cinema. The attitude towards family planning measures husband's attitude in terms of his approval for the use of family planning. The contextual factors include woman's autonomy in reproductive decision making and husband-wife communication. Finally, proximate variables as defined by John Bongaarts (1978) in his study include age at effective marriage, use of contraception and pregnancy wastage. Although Bongaarts identified four important proximate variables, we have included only three in this study as the role of breast feeding may not be as

A Conceptual Framework for the Analysis of Adolescent Fertility
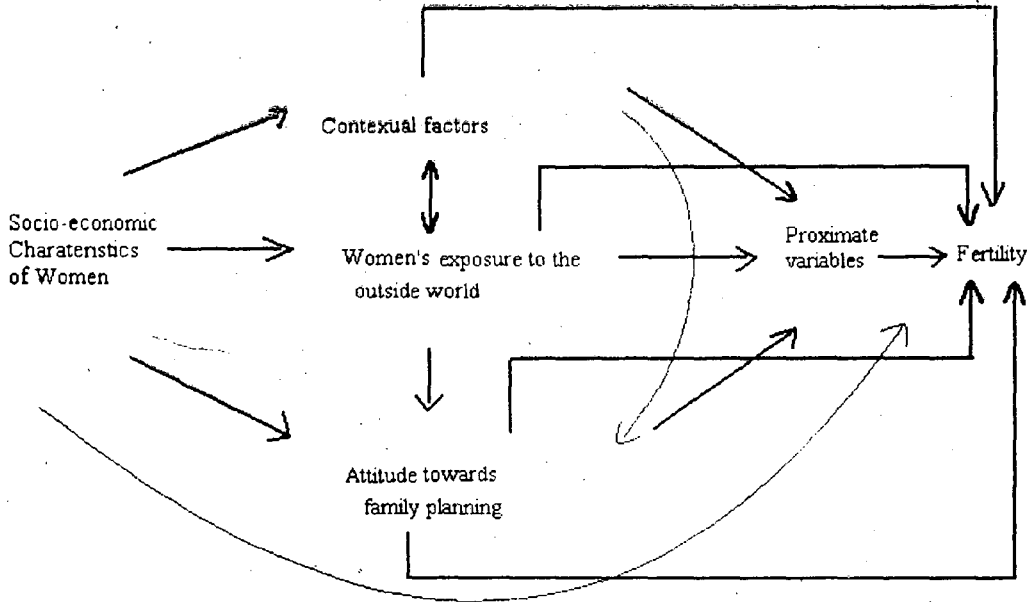
Fig 3.1

important for an analysis of adolescent fertility as for analysis of women in all the reproductive ages.

The figure shows that the socio-economic characteristics of a woman, her exposure to the outside world, contextual factors and attitude towards family planning affect the proximate variables and, in turn these proximate variables affect adolescent fertility. The framework also shows that these factors not only indirectly affect adolescent fertility through the proximate variables but they also have a direct influence on adolescent fertility. Furthermore, we can infer from the framework that various direct as well as indirect determinants of fertility are also interrelated among themselves. For instance, the socio-economic characteristics of women such as their level of education, place residence and caste to which they belong affects contextual factors, attitude of husband towards family planning and extent to which a woman is exposed to the outside world. Similarly, contextual factors influence the attitude of the husband towards family planning and women's exposure. Our dependent variable is adolescent fertility which is measured in terms of number of children ever born to adolescent women.

The mechanism through which various socio-economic, contextual, attitude, exposure and proximate variables influence the number of children ever born to a adolescent woman is discussed below.

(a) Woman's Socio-economic characteristics

(i) Education

The relationship between education and fertility has been widely discussed. Higher level of education of a couple is usually associated with less number of children ever born (Mandelbaum, 1974). But it has been observed that the education of wife plays a more important role than that of husband in influencing fertility behaviour of a couple.

Maternal education affects fertility in several ways. According to Macauley and Salter (1995) "as formal education has become more avaliable in developing countries, it has become a factor in delayed marriage". Islam and Mahmud (1996) contend that education has a significant effect on teenage marriage ; an increase in educational level can significantly raise the age at which women marry and consequently decrease the number of adolescent marriages.

Education increases a woman's access to better employment opportunities and thus provides her an alternative to early marriage and childbearing. Furthermore, a better educated woman is more likely to plan her family through deliberate use of birth control methods. She is more informed of contraceptive methods and is able to participate in the decision making process of her life and her family.

(ii) Place of residence

There are several reasons for an inverse correlation
between fertility and urban place of residence.
Generally, marriages in rural areas take place at
relatively young ages than in urban areas. This is due to
the fact that in urban areas women are more educated and
thus they prefer to delay marriage. Women living in urban
areas are also more likely to use contraceptives than
rural women. Urban residents are not only more educated
but are also exposed to newer ideas. Higher costs of
living in urban areas also motivates a couple to plan
their family. Also, family planning services are often
easily accesible in cities and towns than in villages.

Besides higher age at marriage and greater use of
contraception, higher pregnancy wastage in urban areas
also depresses fertility. There may also be more
facilities that carry out induced abortions in urban
areas. Also, spontaneous abortions and still births to
adolescent women are reported to be generally higher in
urban than in rural areas (Sharma, 1998).

(iii) Caste

Caste is also an important determinant of fertility.
The differences in the fertility behaviour of women
belonging to distinct caste groups are a result of
various factors such as the differences in the age at
which a woman marries, differential practice of

contraceptive methods etc. Many studies have shown that women belonging to SC/ST marry at lower ages compared with non-SC/ST women. Furthermore, the contraceptive prevalance rate among SC/ST women is lower than their non-SC/ST counterparts. This is perhaps why the number of children ever born to SC/ST women is much higher than to those who are non-SC/ST (Arora, 1990, p. 26).

(b) Woman's exposure to the outside world

A woman's exposure to the outside world plays an important role in determining her fertility behaviour. An important means of exposure to the outside world is the electronic media.

The mass media exposure significantly influences the age at which a woman marries. Access to mass media such as radio, television or cinema not only makes a woman aware of the importance of education but also of various negative consequences of childbearing at an early age. Communication through mass media informs a woman about means of raising awareness and it also stimulates the use of modren contraceptives. Many studies have found that family planning messages broadcast in the mass media such as radio, television or cinema increases the use of contraception (Robey et al., 1992, Devi et al., 1996).

(c) Contextual factors

It has been rightly pointed out by Srinivas and Ramaswamy (1977) that "fertility is not a matter of individual choice, rather it takes place in a total social context". There are various societal and normative factors which affect the fertility behaviour of a woman.

(i) Woman's autonomy in reproductive decision making

A newly married young woman has no say in the reproductive decision making that is, in the matters regarding her sexuality and childbearing. Although important decisions in the family are made by the eldest male, the eldest woman also gains considerable authority over all women in the household.

"On marriage a woman comes under the authority of the husband's family, that the authority is mainly exerted by her mother-in-law, and that nothing, neither her relationship with her husband nor those with her parents, should impair the legitimate authority or her willing submission" (Mandelbaum, 1970). A wife enters the household of her husband's family at a young age and is expected to obey her mother-in-law and to avoid the elder males. It is the mother-in-law who takes decision regarding her daughter-in-law's family size or the use of birth control methods.

(ii) Husband-wife communication

As reproductive decision making is generally considered a perogative of the husband or other elder members of his family, there is very little or often no communication between a young woman and her husband regarding the use of contraception or family size (Jejeebhoy,1996). But many studies have shown that disscusion of family size desires and family planning methods between husbands and wives is associated with higher level of use of contraceptive methods. Mahmud and Islam (1995) found that in Bangladesh young couples who made joint decision regarding family planning were 1.8 times more likely to be current contraceptive users than those where husband alone made such decisions. Similarly, Mccauley et al., 1994 in their study of seven African DHS, report that women who had discussed family planning with their husbands in the preceding 12 months were on avearge almost four times more likely to be using contraceptives than those who had not discussed family planning.

(d) Attitude towards family planning

In addition to the social and normative influence, the decision to use birth control methods is also influenced by couple's attitude towards family planning.

(i) Husband's approval for family planning

Generally women have a more positive attitude towards family planning than their husbands. Husband's opposition is often cited by women as one of the reasons for the non use of any contraceptive method (Stash, 1995). Husband's attitude not only influences the use or non use of contraception but he also decides the particular method to be used and for how long it should be used. A survey of five urban areas in Indonesia indicated that unmet need could be reduced by nearly one-half if all husbands approved of contraceptive use (Joesoef et al., 1988). A wife's perception of her husband's attitude assumes significant importance as it may affect her decision to use a contraception.

Thus, the approval of family planning by wife or husband or both of them can improve the use of birth control measures.

(e) Proximate Variables

(i) Age at effective marriage

Studies have shown that raising marriage age reduces fertility rate. An estimate shows that, if the avearge age at marriage for the Indian women is postponded to 20 years, the birth rate would very likely decline by about 30 percent (Agarwala, 1966). The argument behind this is that raising age at marriage means a woman spends less

time regularly exposed to the risk of becoming pregnant and thus it leads to a reduction in the total number of children ever born.

But in the Indian context marriage may not coincide with the beginning of exposure to the risk of pregnancy. According to Basu (1992) "there is a need to distinguish between the marriage ceremony which formalizes a girls's marital status and sexual relationship between husband and wife. The former can occur at any age but the later must typically await puberty". Thus, it is the age at effective marriage rather than age at marriage which act as a proximate determinant of fertility, especially when we are considering fertility behaviour among adolescent women.

(ii) Use of contraception

The second important proximate determinant of fertility is the use of birth control methods. According to Robey et al (1992) "in the past two decades changes in the use of family planning have largely dertermined national fertility trends". In those countries where there has been an increase in the percentage of women using contraception, fertility levels have substantially reduced. On the other hand, the fertility rate has remained high where few couples use contraceptive methods. Pathak and Ram (1987) reported that about 27 percent of the total change in TFR in India between 1970-85 can be attributed to contraception.

(iii) Pregnancy Wastage

Adolescent women generally record a higher percentage of pregnancy loss in terms of spontaneous abortions and still births (McAnarney, 1987, Mishra and Dawn, 1986, Fraser, et.al., 1995). Thus, pregnancy before age 20 is not only dangerous for the mother but it also poses risk to the young woman's infant. While some of the women loose the foctus involuntarily others deliberately abort it. The loss of foctus either voluntarily or involuntarily before the pregnancy comes to a full term influences the fertility rate.

The framework described above is used for the analysis in Chapter 4. We now describe the measurement of variables, methodology used in the study, source of data and the hypotheses framed to be tested.

Hypotheses:

The following hypotheses have been framed on the based of above mentioned conceptual framework which will be empirically tested in the study.

1. Adolescent women who attend school have lower fertility than those who have never been to school.

2. Adolescent fertility rate varies with place of residence.

3. The caste of a woman influences her fertility behaviour.

4. There is a positive relationship between mass media exposure and adolescent fertility rate.

5. The higher the interspousal communication, lesser will be the adolescent fertility rate.

6. Autonomy in reproductive decision making among adolescent women depresses adolescent fertility.

7. Husband's approval for the use of family planning methods reduces adolescent fertility.

8. The higher the age at effective marriage, lower will be the adolescent fertility rate.

9. Use of contraception in inversely related to adolescent fertility rate.

10. Higher the incidence of pregnancy wastage to adolescent women, lower the fertility.

Data

The data used in this study are from the National Family Health Survey (NFHS) which was launched by the Ministry of Health and Family Welfare (MOHFW), New Delhi, 1991. The data collection in the NFHS was carried out in three phases in 1992 and 1993. The survey covered twenty

four states and the National Capital Territory of Delhi, comprising 99 percent of the total population of India. In all 89,777 ever-married women aged 13-49 and 88,562 households were covered in the survey.

Three types of questionnaires were used in NFHS: the Household Questionnaires, the Woman's Questionnaire and the Village Questionnaire. This study is based on the data collected in Woman's Questionnaires which consisted of seven sections: Respondent's Background, Reproduction, Contraception, Health of Children, Fertility Preferences, Husband's background and Woman's work and Weight.

The survey has proved to be a rich and illustrious source of data. It collected data not only on the demographic and socio-economic determinants of fertility, family planning, and maternal and child health but also on family size preference and the level of unwanted fertility etc. The survey used uniform questionnaires and uniform methods of sampling, data collection and analysis with the primary objective of providing a source of demographic and health data for inter-state comparisons.

Measurement of Variables:

The measurement of response and predictor variables and the notations used to represent each of these variables is given below:

Response Variable

The response or dependent variable used in the study is the total number of children ever born to ever married women aged 13-19 years. It is categorized as:

$$Y = \begin{matrix} 0 \\ 1 \\ 2 \end{matrix}$$

Predictor Variables

1. Age at effective marriage (X1): The age at which these women started living with their husbands is classified into:

$$X1 = \begin{matrix} <13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \end{matrix}$$

2. Use of contraception (X2): Women are classified as those who have:

$$X2 = \begin{matrix} 1 - \text{Ever used} \\ 2 - \text{Never used} \end{matrix}$$

3. Pregnancy wastage (X3): Total pregnancy wastage includes Spontaneous Abortions (SA), Induced Abortions (IA) and Still Brths (SB).

$$X3 = \begin{matrix} 1 - \text{experienced SA/IA/SB} \\ 2 - \text{Never experienced} \end{matrix}$$

4. Place of residence (X4): The place of residence of women is classified into rural and urban areas.

$$X4 = 1 - \text{urban}$$
$$2 - \text{Rural}$$

5. Education (X5): The educational level of women is measured in terms of whether they have ever been to school.

$$X5 = 1 - \text{Ever attended school}$$
$$2 - \text{Never attended school}$$

6. Caste (X6): Women were catagorized into:

$$X6 = 0 - \text{Scheduled Castes}$$
$$1 - \text{Scheduled Tribes}$$
$$2 - \text{Others}$$

7. There are three means of mass media exposure: Exposure to radio (x7):

$$X7 = 1 - \text{Listens to radio once a week}$$
$$2 - \text{do not listen}$$

8. Exposure to television (X8):

$$X8 = 1 - \text{Watches television once a week}$$
$$2 - \text{do not watch}$$

9. Exposure to cinema (X9):

$$X9 = 1 - \text{Goes to cinema once a month}$$
$$2 - \text{do not go}$$

10. Husband's approval for FP methods (X10): It is measured in terms of the women's perception that whether their husbands approve of using contraception

$$X10 = 1 - \text{Approves}$$
$$2 - \text{Disapproves}$$

11. Husband-wife communication is measured in two ways. Firstly, number of times the couple has discussed family planning in the past year.

$$X11 - 1 - \text{Never}$$
$$2 - \text{Once or twice}$$
$$3 - \text{More often}$$

12. Secondly, whether the woman has ever discussed with her husband regarding the number of children they would like to have.

$$X12 - 1 - \text{Discussed}$$
$$2 - \text{Never discussed}$$

13. Women's autonomy in reproduction decision making is measured in terms of presence of mother-in-law in the household. There are no such data available in NFHS. Therefore, we have used the data available for this variable in terms of whether the mother-in-law was present at the time of interview. We assume here that if she is present at the time of interview, she is very influencial and the women has no autonomy in the reproductive decision making.

X13 - 1 - Mother-in-law present
                      2 - Absent

Methodology

       In this study we have used statistical techniques
for the analysis of adolescent fertility. In order to
understand the nature of distribution of variables,
univariate descriptive statistics in terms of percentage
distribution of ever married women aged 13-19 years for
the response and predictor variables was obtained. The
univariate distribution is followed by a correlation
analysis. The correlation analysis is carried out to
understand how the predictor variables covary with each
other.

       For the multivariable analysis, the statistical
technique used in this study is Multiple Classification
Analysis (MCA). This technique is useful as most of our
predictor variables are either continuos or categorical
in nature. MCA is a technique for examining the
interrelationship between several predictor variables and
a dependent variable within the context of an additive
model. (Retherford and Choe, 1993).

Statistical Model: The statistical model specifies that a
coefficient should be assigned to each category of each
predictor, and that each person's score on the dependent
variable should be treated as the sum of the coefficients
assigned to categories characterized plus average for all
calsses plus an error term. Symbolically,

$$Y_{ijk} = Y + a_i + b_j + \text{---} + e_{ijk}$$

Where

Y_{ijk} = Score (on the dependent variable) of a particular individual variable who falls into the ith category of predictor A, j^{th} category of predictor B, etc.

Y = Grand mean of the dependent variable.

a_i = The effect of the membership in the ith category of predictor A.

b_j = The effect of membership in the jth category of predictor B (= difference between Y and the mean of jth category of predictor B).

e_{ijk} = Error term of individual.

Through this technique we are not only able to explain how each predictor variable is related to the dependent variable but also how well all the variables taken together explain variation in the dependent variable.

In the absence of effects of other predictors the impact of a predictor variable on response variable is called unadjusted effect and the effect of a predictor variable controlling the effect of other predictor variables constant is called adjusted effect. In addition to the adjusted and unadjusted effects, the eta(n) coefficient is the correlation ratio, which shows how

well a given predictor can explain the variation in the dependent variable; whole the eta square(n2) coefficient indicates the proportion of the variation expalined by the predictor alone. On the other hand, the beta (β) coefficient measures, on the basis of the adjusted mean, the ability of a given predictor to account for variation in the dependent variable whereas the n coefficient shows the proportion of the variation that is explained by the predictor, after taking into account the proportion explained by the other predictors.

Further, R2 unadjusted is the actual proportion of variance in the dependent variable explained by using the obtained coefficients in the additive model applied to the data cases actually used in the analysis. R2 adjusted is an estimate of how much variance the predictors would explain if used in an additive model applied to a different but comparable set of data cases.

Computationally, R2 adjusted is derived from R2 unadjusted by applying the adjustment factor AD which is determined by the no. of cases (N), catagories (C), and predictors (P) as

$$R^2 \text{ adjusted} = (1 \; (1 - R^2 \text{ unadjusted}) \; (AD)$$
$$\text{Where AD} = \frac{N - 1}{N+P-C-1}$$

Using this technique, we now proceed to an analysis of adolescent fertility.

Chapter IV

A Comparative Analysis of Adolescent Fertility In Madhya Pradesh, Andhra Pradesh, Punjab And Kerala

On the basis of conceptual framework developed in Chapter III, we now analyse adolescent fertility in the four states using various statistical techniques. In this chapter, we first present the percentage distribution of ever married women aged 13-19 by response and predictor variables. This description of percentage distribution of ever married adolescent women is followed by a correlation analysis. After examining the nature of correlation between various predictor variables for individual states, a multivariate analysis has been carried out by using the statistical technique of Multiple Classification Analysis (MCA).

I. Univariate Distribution

The univariate discriptive statistics in terms of percentages enables a reader to picture the way the cases are distributed. Table 4.1 tabulates the percentage of ever married women age 13-19 years by selected predictor and response variable. The description of predictor variables is followed by the response variable.

Table 4.1: Percentage distribution of ever married women aged 13-19 years by response and predictor variables for Madhya Pradesh, Andhra Pradesh, Punjab and Kerala

Variable(s)	Value	Madhya Pradesh No.	Percentage	Andhra Pradesh No.	Percentage	Punjab No.	Percentage	Kerala No.	Percentage
Predictor Variables									
Socio-Economic Characteristics									
Place of	Urban	121	14.8	95	15.3	26	19.7	26	15.4
Residence	Rural	696	85.2	527	84.7	106	80.3	143	84.6
Ever attended	Yes	224	27.4	194	31.2	55	41.7	167	98.8
School	No	593	72.6	428	68.8	77	58.3	2	1.2
Caste	SC	51	6.2	112	18.0	41	31.1	3	1.8
	ST	249	30.5	36	5.8	-	-	2	1.2
	Others	517	63.3	474	76.2	91	68.9	164	97.0
Women's Exposure to the Outside World									
Listen to radio	Yes	257	31.5	371	59.9	49	37.1	128	75.7
	No	559	68.5	248	40.1	83	62.9	41	24.3
Watches	Yes	182	22.3	210	33.9	72	54.5	55	32.5
Television	No	634	77.7	409	66.1	60	45.5	114	67.5
Goes to cinema	Yes	66	8.1	365	59.0	3	2.3	29	17.2
	No	749	91.9	254	41.0	129	97.9	140	82.8
Attitude Variable(s)									
Husband approves of	Yes	347	43.9	446	75.5	95	72.0	91	56.2
Family planning	No	443	56.1	145	24.5	37	28.0	71	43.8
Contextual Factors									
Couple. Discussed family planning last year	Never	616	78.0	363	61.4	56	42.4	75	46.3
	Once or twice	148	18.7	198	33.5	60	45.5	41	25.3
	More often	26	3.3	30	5.1	16	12.1	46	28.4
Discussed	Yes	360	45.6	352	59.6	104	78.8	100	61.7
Children	No	430	54.4	239	40.4	28	21.2	62	38.3
Mother-in-law	Yes	94	11.5	87	14.0	9	6.8	4	2.4
Present	No	723	88.5	535	86.0	123	93.2	165	97.6
Proximate Variables									
Age at effective	<13	70	.86	55	8.8	-	-	-	-
Marriage (in years)	13	103	12.6	101	16.2	-	-	-	-
	14	118	14.4	117	18.8	9	6.8	18	10.7
	15	191	23.4	150	24.1	15	11.4	30	17.8
	16	148	18.1	97	15.6	26	19.7	43	25.4
	17	118	14.4	49	7.9	29	22.0	39	23.1
	18	54	6.6	44	7.1	37	28.0	27	16.0
	19	15	1.8	9	1.4	16	12.1	12	7.1
Ever use of	yes	45	5.5	36	5.8	20	15.2	46	27.2
Contraception	no	772	94.5	586	94.2	112	84.8	123	72.8
Pregnancy	yes	40	4.9	43	6.9	10	7.6	13	7.7
Wastage	no	777	95.1	579	93.1	122	92.4	156	92.3
Response Variable									
Total number of	0	473	57.9	327	52.6	76	57.6	105	62.1
children ever	1	258	31.6	202	32.5	56	42.4	64	37.9
born	2	86	10.5	93	15.0	-	-	-	-

Predictor Variables

(a) Socio-economic Characteristics

(i) Place of Residence

An examination of table 4.1 shows that there is not much difference in the rural-urban distribution of adolescent women in all the four states. In Madhya Pradesh, Andhra Pradesh and Kerala around 15 percent of adolescent women are living in urban areas. The percentage is somewhat higher in Punjab where 19.7 percent of teenage women are urban residents.

(ii) Education

As can be expected, the record of Madhya Pradesh in terms of education is relatively poor. Table 4.1 shows that only 27.4 percent of adolescent women in Madhya Pradesh have ever attended school. Similarly, only 31.2 percent of such women in Andhra Pradesh have ever been to school. The percentage is somewhat higher in Punjab where around two-fifths of adolescent women have attended school. Among all the states, Kerala is an exception where almost 98.8 percent of teenage women have ever been to school.

(iii) Caste

The distribution of scheduled caste, scheduled tribe and others among ever married women aged 13-19 years shows that (Table 4.2) in Madhya Pradesh 30.5 percent of women belong to scheduled tribes, 6.2 percent are scheduled castes, and 63.3

percent are non SC/ST. On the other hand, in Andhra Pradesh 18.0 percent of adolescent women belong to scheduled castes, 5.8 percent are scheduled tribes and nearly three-fourths are non SC/ST. In the case of Punjab 31.1% of adolescent women are scheduled castes and the rests are non SC/ST as no Scheduled tribes are found in the state. Unlike these three states, in Kerala almost all the adolescent women are non-scheduled castes and non scheduled tribes.

(b) Women's exposure to the outside world

(i) Exposure To Radio

Table 4.1 shows glaring North-south differences in terms of adolescent women's exposure to radio. In Madhya Pradesh only 31.5 percent of women regularly listen to radio at least once a week. Similarly, in Punjab a little more than one-third of women are exposed to radio. In contrast, in Andhra Pradesh 59.9 percent and in Kerala nearly three-fourths of women listen to radio at least once a week.

(ii) Exposure to Television

As in the case of exposure to radio, the lowest percentage of women who watch television at least once a week is found in Madhya Pradesh (22.3%). In Andhra Pradesh and Kerala the proportion of adolescent women who watch television regularly ranges from 32-34 percent. Television viewing is relatively high in Punjab where more than half of the adolescent women watch television at least once a week.

(iii) Exposure to Cinema or Theater

It is clearly evident from Table 4.1 that cinema is not a very popular means of mass media exposure in all the states except in Andhra Pradesh. In Punjab only 2.3 percent and in Madhya Pradesh only 8.1 percent of adolescent women go to a cinema hall or theater to see a movie at least once a month. In Kerala the percentage of such women is 17.2 percent. But, in Andhra Pradesh nearly 60.0 percent of women attend cinema at least once a month.

(c) Attitude Variable

(i) Husband's approval

In Madhya Pradesh only 43.9 percent of women perceive that their husbands approve of family planning. The percentage is somewhat higher in Kerala where a little more than half of their husband's approve of using contraceptive methods. On the other hand, in Andhra Pradesh and Punjab nearly three-fourths of adolescent women reported that their husband's approve of using family planning methods.

(d) Contextual factors

(i) Discussed children

The distribution in table 4.1 shows that husband-wife communication regarding the number of children is at the lowest in Madhya Pradesh. In Andhra Pradesh and Kerala, the percentage of women who have discussed the number of children

they would like to have varies from 60 to 62 percent. Among all the four states, intersponsal communication is the highest in Punjab where nearly 79 percent of adolescent women have had such discussions with their husbands.

(ii) Number of times discussed family planning last year

In Kerala 46.3 percent of adolescent women have never discussed family planning with their husbands at all in the year preceding the survey, 25.3 percent discussed once or twice and 28.4 percent discussed it more often. In Punjab, 42.4 percent women say that they did not discuss the subject, a somewhat higher percentage of women (45.5%) reported discussing family planning with their husbands once or twice and only 12.1 percent of women discussed it more often. In Andhra Pradesh, 61.4% of women have never discussed, 33.5 percent have discussed once or twice and only 5.1 percent have discussed more often. The extent of husband-wife communication about family planning is at the lowest in Madhya Pradesh where 78.0 percent have had no discussions, 18.7 percent have discussed it once or twice and only 3.3 percent have discussed more often.

(iii) Presence of mother-in-law

In Andhra Pradesh 14 percent and in Madhya Pradesh 11.5 percent of adolescent women reported the presence of their mothers-in-law whereas in Punjab and Kerala only 6.8 percent and 2.4 percent of women confirmed the presence of mother-in-law in the household.

(e) Proximate Variables

(i) Age at Effective Marriage

An examination of the distribution of ever married adolescent women by the age at which they started living with their husbands shows that Madhya Pradesh and Andhra Pradesh both have a very low age at effective marriage. In both the states around 9.0 percent of adolescent women started living with their husbands ever before age 13 years. In Madhya Pradesh a majority (59.0%) started living with their husbands by the age 15, 77.1 percent by age 16 years and almost all of them by 17 years. In Andhra Pradesh 67.9 percent of such women reported an age at effective marriage of 15 years, 83.5 percent started living by age 16 and almost 90 percent by age 17 years. In contrast, adolescent women of Punjab do not start living with their husbands before age 14, only 18.2 percent reported an age at effective marriage of 15 years. But 59.9 percent of such women started living by age 17 years. Similarly, in Kerala where age at effective marriage starts at 14 years, 28.5 percent of adolescent women started living with their husbands by age 15 years, almost half of them by 16 years and 77 percent by age 17 years.

(ii) Use of Contraception

It is evident from Table 4.1 that the use of contraception is deplorably low among adolescent women. In Madhya Pradesh and Andhra Pradesh only 5 to 6 percent of teenage women have ever used any contraceptive method. The use

is relatively high in Punjab where 15.0 percent of such women have used any contraceptive methods. Among all the four states, ever use of fertility regulation methods is the highest in Kerala where 27.2 percent of adolescent women have ever used any birth control method.

(iii) Pregnancy Wastage

Another important proximate variable is pregnancy loss among adolescent women. The total pregnancy wastage include spontaneous abortions, induced abortions and still births. In Kerala, Punjab and Andhra Pradesh 7-8 percent of pregnancies to adolescent women result either in spontaneous abortions, induced abortions or still births, the highest being in Kerala. On the other hand, in Madhya Pradesh only 4.9 percent of pregnancies to adolescent women do not result in live births.

Total Number of Children Ever Born

Table 4.1 shows that almost two fifths of adolescent women in Madhya Pradesh have given birth to at least one child. Out of these 10.5 percent of them have reported a parity two. The percentage is higher in Andhra Pradesh where 47.5 percent of the ever married adolescent women are mothers. Among these 15.0 percent of them have given birth to even two children. On the other hand, in Punjab and Kerala although 42.4 percent and 37.9 percent of adolescent women have become

mothers respectively, almost all of them have given birth to only one child.

II Correlation Analysis

The above description shows the distribution of variables but in order to understand how the predictor variables covary with each other a correlation analysis has been carried out for each state separately. The analysis does not include caste as it is a categorical variable whereas all other predictor variables are continous in nature. The results of the correlation analysis are discussed below.

Madhya Pradesh

Table 4.2 presents the correlation matrix of the predictor variables for Madhya Pradesh. The table shows a strong positive correlation between age at effective marriage of adolescent women and the place of residence (.14) education (.26) and exposure to mass media. Those women who live in urban areas or have attended school or are exposed to either radio, television and cinema have higher age at effective marriage. Similarly, use of contraception is positively related with the place of residence (.10), women's education (.14) and exposure to television and cinema (.14). That is, the use rate is higher in urban than in rural areas. Also, those women who have attended school or who watch television at least once a week or go to cinema at least once a month

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have a higher use rate. The use of contraception is also positively correlated with the husband's approval for family planning (.23) and husband-wife communication regarding the number of children (.14) as well as the use of contraception (.27). The correlation coefficient of all these variables are significant at below 1% level.

Table 4.2: Correlation coefficient matrix for predictor variables, Madhya Pradesh

	X1	X2	X3	X4	X5	X7	X8	X9	X10	X11	X12	X13
X1	1.0000											
X2	.0006	1.0000										
X3	.0984*	.1368**	1.0000									
X4	.1407**	.1009*	.2257**	1.0000								
X5	.2600**	.1430**	.0078	.2295**	1.0000							
X7	.1913**	.0398	.0489	.1790**	.3106**	1.0000						
X8	.1914**	.1458**	.0980*	.4036**	.3486**	.4408**	1.0000					
X9	.1286**	.1450**	.1302**	.3950**	.2699**	.2794**	.4597**	1.0000				
X10	.0765	.2374**	.0628	.0895*	.1369**	.1153**	.2246**	.1627**	1.0000			
X11	.0417	.2728**	.0628	.0840*	.0911*	.0648	.1151**	.0279	.3284**	1.0000		
X12	.0095	.1483**	.0795	.0621	.0377	.0775	.1211**	.0874**	.3435**	.3725**	1.0000	
X13	.0199	.0041	.0085	-.0301	.0372	-.0089	-.0407	.0070	-.0346	-.0166	-.0143	1.0000

X1 – Age at effective marriage

X2 – Use of contraception

X3 – Pregnancy wastage

X4 – Place of residence

X5 – Ever attended school

X7 – Exposure to radio

X8 – Exposure to television

X9 – Exposure to cinema

X10 – Husband's approval

X11 – Discussed family planning

X12 – Discussed children

X13 – Mother-in-law present

*   Signifi at 1% level
**   Signifi at below 1%level

The place of residence of adolescent women is positively correlated with all the three means of mass media exposure, women's education (.22), pregnancy wastage (.22) and husband's approval for family planning (.08). A significant positive correlation is also found between women's education and her exposure to mass media, her husband's approval (.13) and communication with her husband regarding the use of contraception (.09). Table 4.2 clearly indicates a positive correlation between women who watch television once a week, listen to radio once a week or go to cinema at least once a month and husband's approval for family planning. The correlation matrix also shows that women who are exposed to mass media are able to communicate more with their husbands regarding the number of children they would like to have than those who are not exposed. Finally, husband's approval for family planning and husband-wife communication in terms of discussion of children or of family planning methods are also positively correlated.

Andhra Pradesh

As in the case of Madhya Pradesh, table 4.3 indicates a strong positive correlation between age at effective marriage and place of residence (.20), women's education (.36) and women's exposure to either radio (.19) television (.20) or cinema (.11). But, unlike in Madhya Pradesh the use of

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^{Note} The codes Yes and No of other variables were changed into No and Yes during the correlation analysis of age at effective marriage and husband-wife communication regarding the use of contraception.

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contraception is Positively related to only television as a means of mass media exposure (.12). A strong positive correlation is also observed between husband-wife communication in terms of the use of family planning method and ever use of contraception (.17).

The place of residence is positively correlated with women's education (.26) and her exposure to television (.29) and cinema (.21). A significant relationship between place of residence and husband-wife communication (.10 and .12) indicates that intersponsal communication is higher in urban than in rural areas. As expected, women's education is positively correlated with her exposure to electronic media. A strong association is also found between women's education and husband's approval (.16) and husband-wife communication (.11 and .19).

Table 4.3 also shows that a woman's exposure to mass media leads to higher intersponsal communication and her husband's approval for family planning. A significant positive correlation is also found between women's perception that her husband approves of family planning and husband-wife communication in terms of the number of children they would like to have (.28) and the use of contraceptive methods (.29).

Table 4.3: Correlation coefficient matrix for predictor variables, Andhra Pradesh

	X1	X2	X3	X4	X5	X7	X8	X9	X10	X11	X12	X13
X1	1.0000											
X2	.0136	1.0000										
X3	.0727	.1940**	1.0000									
X4	.2082**	.0442	.0245	1.0000								
X5	.3675**	.0880	-.0232	.2635**	1.0000							
X7	.1915**	.0295	.0954	.0893	.2503**	1.0000						
X8	.2014**	.1213*	.0722	.2948**	.3370**	.2892**	1.0000					
X9	.1182*	-.0309	.0610	.2124**	.2115**	.2739**	.3612**	1.0000				
X10	.0392	.0465	.0533	.0683	.1673**	.2222**	.1696**	.1613**	1.0000			
X11	.0628	.1774**	.0912	.1059*	.1138*	.0913	.0780	.0887	.2936**	1.0000		
X12	.0784	.0743	.0325	.1236*	.1996**	.1105*	.1090*	.1421**	.2861**	.5058**	1.0000	
X13	.0333	-.0383	.0162	.0137	.0556	.0448	.0020	-.0358	.0061	.0712	-.0090	1.0000

X1 – Age at effective marriage
X2 – Use of contraception
X3 – Pregnancy wastage
X4 – Place of residence

X5 – Ever attended school
X7 – Exposure to radio
X8 – Exposure to television
X9 – Exposure to cinema
X10 – Husband's approval
X11 – Discussed family planning
X12 – Discussed children
X13 – Mother-in-law present

*   Signifi at 1% level
**   Signifi at below 1%level

Punjab

The correlation matrix of the predictor variables for Punjab is presented in table 4.4. In Punjab also a strong positive correlation is observed between age at effective marriage and women's education (.31) and her exposure to television as a means of mass media communication (.27). The use of contraception is positively related to husband's approval (.21). A significant positive correlation is also observed between use of contraception and husband-wife discussion regarding the use contraceptive methods in the last one year (.22). That is, as the frequency of discussion regarding contraceptive methods increases, the use of contraception also increases.

The place of residence is significantly and positively correlated with women watching television at least once a week (.29). A positive relationship is also found between women who have attended school and their exposure to radio (.33) and television (.37). Also, women who have ever attended school have a higher intersponsal communication (.21).

A woman's exposure to mass media is strongly co-related with discussion with her husband regarding the number of children and the use of any family planning methods. Finally, a strong association is observed between husband's approval and husband-wife communication in terms of both number of children (.46) and use of contraception (.59).

Table 4.4: Correlation coefficient matrix for predictor variables, Punjab

	X1	X2	X3	X4	X5	X7	X8	X9	X10	X11	X12	X13
X1	1.0000											
X2	.0725	1.0000										
X3	.0189	-.1210	1.0000									
X4	.0906	-.1030	-.1418	1.0000								
X5	.3118**	.1571	.0484	.1996	1.0000							
X7	.1236	.1126	.1948	.0926	.3366**	1.0000						
X8	.2745**	.1312	.0314	.2991**	.3703**	.4495**	1.0000					
X9	.0472	.0773	-.0437	.1801	.1804	.1985	.1392	1.0000				
X10	.0484	.2167*	.1787	-.0302	.1853	.1304	.1755	.0952	1.0000			
X11	.0321	.2215*	.1288	.0317	.1977	.1594	.2670**	.1441	.5957**	1.000		
X12	.0395	.0642	.0785	.1172	.2130*	.2453*	.2334*	.0791	.4601**	.4819*	1.0000	
X13	.0625	.0533	-.0774	-.0584	.0152	-0212	-.0549	-.0413	-.0319	.0122	-.0067	1.000

X1 – Age at effective marriage

X2 – Use of contraception

X3 – Pregnancy wastage

X4 – Place of residence

X5 – Ever attended school

X7 – Exposure to radio

X8 – Exposure to television

X9 – Exposure to cinema

X10 – Husband's approval

X11 – Discussed family planning

X12 – Discussed children

X13 – Mother-in-law present

*   signifi at 1% level
**   signifi at below 1%level

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Kerala

As can be seen from Table 4.5, unlike Punjab the age at effective marriage of adolescent women in Kerala is positively correlated with cinema as a means of man media exposure (.31). That is those women who go to cinema regularly have a higher age at effective marriage. A significant relationship between the use of contraception and women's exposure to television (.22) and cinema (.19) is observed. The matrix also indicates a significant positive correlation between the use of contraception and husband's approval for family planning (.35).

As expected, women's education is significantly related with her exposure to radio (.19). Similarly, those women who go to cinema at least once a month have a higher intersponsal communication regarding the number of children they would like to have (.22). Husband's approval is also positively related to husband-wife communication regarding the number of children (.32) as well as the use of family planning methods (.31).

In sum, the correlation analysis shows that husband-wife communication measured in terms of discussion regarding the number of children emerges as the highly correlated variable in all the four states. The other indicator of husband-wife communication, discussion regarding the use of contraception is significantly correlated in Punjab and Madhya Pradesh. Other predictor variables such as mass media exposure and husband's.

Table 4.5: Correlation coefficient matrix for predictor variables, Kerala

	X1	X2	X3	X4	X5	X7	X8	X9	X10	X11	X12	X13
X1	1.0000											
X2	.0406	1.0000										
X3	.0903	.0197	1.0000									
X4	.111	-.1035	.0687	1.0000								
X5	.0465	-.0555	.0330	.0466	1.0000							
X7	.0182	.0440	-.1416	.0030	.1921*	1.000						
X8	.0542	.2138*	.0362	.0055	.0780	.1941*	1.0000					
X9	.3188**	.1903*	.0453	-.0068	.0511	.1159	.1684	1.0000				
X10	.0874	.3534**	.0319	.0182	.0139	.1726	.1386	.1076	1.0000			
X11	.0338	.1313	.0894	.0350	.0237	-.0111	-.0076	.0582	.3133**	1.0000		
X12	.1185	.1764	.0456	-.0291	-.0880	-.0202	.1160	.2256*	.3283**	.3891**	1.0000	
X13	.1049	-.0099	-.0470	.0456	.0178	.0926	-.0262	-.0727	-.1000	.0604	-.0384	1.0000

X1 – Age at effective marriage

X2 – Use of contraception

X3 – Pregnancy wastage

X4 – Place of residence

X5 – Ever attended school

X7 – Exposure to radio

X8 – Exposure to television

X9 – Exposure to cinema

X10 – Husband's approval

X11 – Discussed family planning

X12 – Discussed children

X13 – Mother-in-law present

* signifi at 1% level
** signifi at below 1%level

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approval for family planning are also significantly correlated with many predictor variables in Madhya Pradesh, Andhra Pradesh and Kerala. Finally, the age at effective marriage is significantly correlated with a large number of predictor variables expecially in Madhya Pradesh and Andhra Pradesh.

III. Multiple Classification Analysis

After having examined the correlation coefficient, in order now to understand the influence of each predictor variable on the response variable, we have used the technique of multiple classification Analysis (MCA). As mentioned in Chapter - III, the MCA has been used because our list of predictor variables incudes both continous as well as catagorical variables.

Before presenting MCA tables for each state, we have presented the results of MCA in terms of β coefficients and multiple R squared. In this table which preceeds the final MCA table for each state, we have shown four equations. A woman's exposure to electronic media has been measured in three ways, exposure to radio, television and cinema. Equation 1 consists of radio as a means of mass media exposure which is replaced by television in equation 2 and equation 3 shows the β coefficient for women who go to cinema at least once a month. Similarly, husband-wife communication is measured in two ways: one by whether they have ever discussed the number of children

they would like to have and second, how frequently they discuss about the use of any family planning method in the last one year. Equation 1 consists of discussion about children and in equation 4 it is replaced by the discussion of contraceptive methods. The MCA is being performed in this manner in order to determine which of the variables that we have considered for mass media exposure and husband-wife communication are important. Thus, four equations are used for the states of Madhya Pradesh, Andhra Pradesh and Punjab. In the case of Kerala, we have used five equations instead of four as the variables women ever attended school and mother-in-law present have a very skewed distribution. Therefore, he have removed these two variables in equation 5 to observe whether there are any changes in the adjusted R square. But as there is not much change in the adjusted R square and β coefficient of other variables we have included these two variable in the MCA for the state of Kerala. We now discuss the results of MCA for the states.

Madhya Pradesh

Table 4.6 shows β coefficient and multiple R squared values for the predictor variables for the state of Madhya Pradesh. The table indicates that among the three types of mass media considered, radio emerges as the most important variable that influences teenage fertility. When we compare equation 1 and 4, we find that as far as husband-wife

communication is concerned frequency of discussion of family planning has β coefficient of .10 and discussion regarding the number of children is .17. This result indicates that the discussion about the number of children a couple would like to have has a more important influence on the number of children ever born than discussion regarding family planning methods.

Among the four equations for Madhya Pradesh we, therefore, select equation 1 which contains radio as a means of mass media exposure and discussion about the number of children between the couple as an indicator of husband-wife communication. The multiple R squared value for this equation is .21 which is significant at below 1% level.

Table 4.6: MCA of children ever born using different predictors, Madhya Pradesh

Variables	Equation 1	Equation 2	Equation 3	Equation 4
Age at effective marriage	.34	.35	.35	.35
Ever use of contraception	.08	.08	.08	.07
Pregnancy wastage	.06	.07	.06	.06
Place of residence	..07	.06	.07	.08
Ever attended school	.09	.12	.11	.10
Caste	.04	.05	.04	.04
Listens to radio	.11	-	-	.10
Watches television	-	.01	-	-
Goes to Cinema	-	-	.02	-
Husband approves of family planning	.10	.09	.09	.13
Discussed family planning last year	-	-	-	.10
Discussed children	.17	.16	.16	-
Mother-in-law present	.05	.06	.05	.05
Multiple R square (adjusted)	.212	.202	.203	.196

The MCA results for Madhya Pradesh are presented in Table 4.7. As can be seen from the table the age at effective marriage of adolescent women is the most important variable having a β coefficient of .34. The results in the MCA table clearly indicate a negative relationship between the total number of children ever born and age at effective marriage: as the age at effective marriage increases, the total number of children ever born decreases. The adjusted mean number of children ever born to adolescent women whose age at effective marriage is less than 13 years is 1.01 compared with .162 for those who start living with their husbands at age 19 years.

Husband-wife communication is the second most important variable influencing the fertility of adolescent women as the β value for this variable is .17. But the computed results show that those women who communicate with their husbands regarding the number of children, have .642 mean number of children ever born compared with .422 for those who do not communicate. This is different from our expectations. A reason for this difference is that these women have not yet completed their family size. It is generally believed than higher the level of communication between the spouses, the lesser is the completed family size (Arora, 1990, p. 80).

Table 4.7: MCA of number of children ever born, Madhya Pradesh

Variables	Value	No. of cases	β coefficients	No of children ever born	
				Unadjusted	Adjusted
Age at effective marriage	<13	62	.34	1.00	1.01
	13	99		.802	.762
	14	113		.632	.632
	15	186		.562	.542
	16	144		.412	.442
	17	116		.212	.232
	18	54		.152	.172
	19	15		.062	.162
Ever use of contraception	Yes	40	.08	.822	.752
	No	749		.502	.512
Pregnancy wastage	yes	38	.06	.552	.332
	No	751		.522	.532
Place of residence	Urban	115	.07	.512	.642
	Rural	674		.522	.502
Ever attended school	Yes	216	.09	.342	.422
	No	573		.592	.562
Caste	SC	49	.04	.412	.432
	ST	242		.602	.552
	Other	498		.492	.522
Listens to radio	Yes	253	.11	.362	.422
	No	536		.602	.572
Husband approves of family planning	Yes	347	.10	.612	.592
	No	442		.452	.462
Discussed children	Yes	359	.17	.672	.642
	No	430		.402	.422
Mother-in-law present	Yes	94	.05	.582	.622
	No	695		.512	.512

Grand mean = .522
No of cases = 789

For other variables the β values range between .05 to .11. As expected, those women who have attended school have a lower fertility (.422) than those who have not been to school (.562). Similarly, women who listen to radio at least once a week have .422 children ever born compared with .572 for those who do not. On the other hand, the use of contraception shows a positive relationship with the number of children ever born. There can be three reasons for such a relationship. First, as the use of contraception among adolescent women is very low in Madhya Pradesh, the variable has a skewed distribution. Second, amongst those adolescent women who have ever used contraception, a little less than one-third rely on traditional methods of contraception which have high contraceptive failure rates. Finally, adolescent women who have ever-used contraception have a higher number of children ever born than those who are not using it because women who are using contraception have already given birth to one or two children and perhaps they have already achieved their desired family size. Cross tabulation results between number of children ever born and use of contraception shows that out of a total of 5.5 percent adolescent women are using contraception only 1.6 percent of women who have not given birth to any child have ever used any contraceptive method compared with 3.9 percent who have given birth to at least one child.

The variable, husband's approval for family planning, has a β coefficient of .10 but the results are not in the expected direction. Those women whose husbands approve of family planning have .592 children compared with .462 for those who

do not. But these results, it should be remembered, refer to women's perception of her husband's attitude towards family planning. For those women living in urban areas, the unadjusted values obtained for mean number of children ever born show lower fertility than those living in rural areas. But, after controlling the effect of other variables the results show a positive relationship between urban place of residence and fertility behaviour of adolescent women in Madhya Pradesh. Here again, while adjusting for the number of children ever born the skewed distribution of residence may have contributed to the unexpected relationship.

Pregnancy wastage among adolescent women, which includes spontaneous abortions, induced abortions and still births, show a negative relationship with fertility. Women who have experienced pregnancy loss, have lower fertility (.332) than those who have not (.532). Also, presence of mother-in-law in the household has a positive relationship with the total number of children ever born to adolescent women. This finding clearly indicates that in Madhya Pradesh mother-in-law influences the fertility behaviour of adolescent women.

Caste of a woman has the lowest β coefficient of .04. The results for caste show that amongst the three categories scheduled tribe women have the highest number of children ever born (.552) and scheduled caste women have the lowest number of children ever born (.432). The women who are non SC/ST give birth to an average of .522 children. But the results of women belonging to scheduled castes may change if the variable had included a higher number of these women.

To sum up, the age at effective marriage, husband -wife communication, mass media exposure, women's education, husband's approval and the use of contraception significantly affect the fertility behaviour of adolescent women. Place of residence, pregnancy wastage and the presence of mother-in-law in the household are also important determinants of total number of children ever born to adolescent women. Amongst all the variables caste is the weakest predictor .

Andhra Pradesh

Table 4.8 presents β coefficient and multiple R squared values for Andhra Pradesh. After examining the first three equations we find that women's exposure to television has a relatively greater influence on the total number of children ever born than that of radio or cinema. Amongst the two indicators of intersponsal communication, the β coefficient for discussion of children (.23) is slightly higher than that for the discussion of the use of contraception (.20). Thus, we select equation 2 for the multivariate analysis of predictor variables for the state of Andhra Pradesh. The multiple R squared value of this equation which consists of television as a means of media exposure and discussion of children as a measure of husband-wife communication is .22. The F values for the equation is 9.45 and the multiple R squared is significant at below 1% level .

Table 4.8: MCA of children ever born using different predictors, Andhra Pradesh

Variables	Equation 1	Equation 2	Equation 3	Equation 4
Age at effective marriage	.36	.36	.37	.35
Ever use of contraception	.11	.13	.11	.12
Pregnancy wastage	.07	.07	.07	.07
Place of residence	.04	.07	.06	.07
Ever attended school	.05	.03	.05	.02
Caste	.03	.03	.03	.04
Listens to radio	.07	-	-	-
Watches television	-	.14	-	.13
Goes to Cinema	-	-	.08	-
Husband approves of family planning	.03	.03	.02	.03
Discussed family planning last year	-	-	-	.02
Discussed children	.22	.22	.23	-
Mother-in-law present	.03	.03	.03	.02
Multiple R square (adjusted)	.209	.220	.210	.211

In the MCA table (Table 4.9) for Andhra Pradesh, as in the case of Madhya Pradesh the age at effective marriage emerges as the most important variable which influences adolescent fertility. The β coefficient for the variable is .36. As can be seen from the table the age at effective marriage has a negative relationship with the total number of children ever born. The adjusted values for mean number of children ever born show considerable variation among the ages 13 to 19 years. The difference between those women whose age at effective marriage is less than 13 years and whose age at effective marriage is 19 years, is almost of one child.

The β coefficient for husband-wife communication is .22. But this variable shows an unexpected positive relationship with the number of children ever born. This is perhaps due to the fact that these adolescent women have not yet completed their family size. Moreover, adolescent women who discuss the number of children with their spouses may like to achieve the desired family size sooner than those who do not communicate.

Table 4.9: MCA of number of children ever born, Andhra Pradesh

Variables	Value	No. of cases	β coefficient	No. of children ever born	
				Unadjusted	Adjusted
Age at effective marriage	< 13	47	.36	1.06	1.06
	13	94		.754	.764
	14	109		.744	.774
	15	144		.614	.574
	16	96		.384	.404
	17	46		.324	.294
	18	44		.044	.084
	19	9		.004	.064
Ever use of contraception	Yes	16	.13	1.06	1.11
	No	573		.574	.574
Pregnancy wastage	Yes	43	.07	.554	.414
	No	546		.584	.594
Place of residence	Urban	91	.07	.554	.704
	Rural	498		.594	.564
Ever attended school	Yes	187	.03	.454	.554
	No	402		.644	.594
Caste	SC	104	.03	.664	.614
	ST	35		.774	.634
	Other	450		.554	.574
Watches television	Yes	202	.14	.434	.454
	No	387		.664	.654
Husband approves of family planning	Yes	445	.03	.604	.594
	No	144		.514	.554
Discussed children	Yes	350	.22	.694	.714
	No	239		.414	.394
Mother-in-law present	Yes	84	.03	.484	.534
	No	505		.604	.594

Grand mean = .584
No of cases = 589

A beta coefficient of .14 for exposure to television indicates that it significantly influences fertility behaviour of adolescent women. Those who watch television at least once a week have .454 children compared with .654 for those who do not. Although the use of contraception has a high beta coefficient of .13, results show that women who have ever used contraceptives have a higher fertility (1.11) than those who have never used it (.574). First, the variable has a skewed distribution in Andhra Pradesh and second, cross tabulation results show that the use of contraception is low among zero parity women (0.5%) compared with those who have given birth to at least one or two children (4.3%). This is due to the fact that the demand for spacing methods among adolescent women remain unment by the current family planning program. According to National family Health survey, out of 20.6 percent of adolescent women who have an unment need for family planning in the state, 18.8 percent have the need for spacing mehtods. Therefore, it is only after completing their desired family size that they resort to terminal methods such as female sterilization.

Both pregnancy wastage among adolescent women and place of residence have a beta coefficient of .07. Those women who have experienced spontaneous abortions, induced abortions and still births have a lower number of children ever born (.414) than those who have not (.594) experienced any pregnancy loss. In the case of place of residence, the unadjusted mean values for number of children ever born appear to be in the expected direction but the adjusted values show higher fertility for

adolescent women living in urban areas (.704) compared with those who are rural dwellers (.564). Perhaps, the skewed distribution of the variable has resulted in such a relationship in Andhra Pradesh too.

Women's education, husband's approval, presence of mother-in-law and caste are the weakest predictors in Andhra Pradesh and all of them have a beta coefficient of .03. The adjusted values for mean number of children ever born indicate lower fertility for those women who have ever been to school (.554) than those who have never attended school (.594). Husband's approval for family planning shows higher number of children ever born for those women whose husband's approve of using contraception than those whose husband's do not. The presence of mother-in-law does not seem to be affecting the fertility behaviour of adolescent women in Andhra Pradesh as those women who are staying with their mothers-in-law have an average of .534 children compared with .594 for those where mother-in-law is not present. The results for caste show that scheduled tribe women have a higher number of children ever born (.634) compared with scheduled caste women (.614). But the results have to be interpreted taking into consideration the fact that the number of scheduled tribes in Andhra Pradesh is comparatively smaller. As expected, non-scheduled castes and non-scheduled tribe adolescent women have the lowest fertility (.574) amongst the three categories.

All in all, the age at effective marriage, husband -wife communication, mass media exposure and use of contraception are important determinants of adolescent fertility in Andhra

Pradesh. Pregnancy wastage and place of residence also significantly affect the total number of children ever born to adolescent women. But women's education, husband's approval, presence of mother -in -law and caste have the lowest effect on the fertility behaviour of adolescent women in the state.

Punjab

The beta coefficient and multiple R squared for the predictor variables are presented in Table 4.10 for Punjab. An examination of first three equations reveals that women's exposure to radio has a beta coefficient of .17, women who watch television regularly has a beta coefficient of .05 and women's exposure to cinema does not have any affect on the number of children ever born to adolescent women at all. On comparing equations 1 and 4 we find that the husband - wife discussion regarding the number of children has a coefficient of only .02 and the discussion regarding the use of contraception has a β coefficient of .12. These coefficients show that unlike in Madhya Pradesh and Andhra Pradesh, in Punjab discussion regarding the use of family planning methods has a greater influence on adolescent fertility compared with the discussion about the number of children. Thus, we select equation 4 which has a multiple R square of .48 which is significant at below 1% level.

Table 4.10: MCA of children ever born using different predictors, Punjab

Variables	Equation 1	Equation 2	Equation 3	Equation 4
Age at effective marriage	.34	.33	.35	.34
Ever use of contraception	.40	.38	.37	.40
Pregnancy wastage	.03	.06	.06	.03
Place of residence	.05	.05	.06	.04
Ever attended school	.20	.23	.24	.20
Caste	.13	.13	.14	.13
Listens to radio	.17	-	-	.18
Watches television	-	.05	-	-
Goes to Cinema	-	-	.00	-
Husband approves of family planning	.18	.19	.19	.12
Discussed family planning last year	-	-	-	.12
Discussed children	.02	.00	.00	-
Mother-in-law present	.11	.11	.11	.11
Multiple R square (adjusted)	.479	.459	.457	.486

Table 4.11 shows MCA results for Punjab. The use of contraception in the state has the highest β coefficient of .40. But the result shows that those women who are using contraception have .894 children compared with .344 for those who are not using it. A reason for such a relationship is the fact that the use of traditional method among adolescent women in Punjab is very high. Among those women who are using any method, around 45 percent have used traditional methods of contraception. Also, cross tabulation results show that out of a total of 15.2 percent of women who have used contraception, women who do not have any child are less likely (1.5%) to use contraception compared to those who have at least one child (13.6%). This is due to the fact that the demand for spacing method is very high among adolescent women as they still want to have children. The data collected in NFHS show that out of 23.7 percent of adolescent women in Punjab have an unmet need for family planning and almost all of them (22.1%) have this need for spacing methods.

Table 4.11: MCA of number of children ever born, Punjab

Variables	Value	No. of cases	β coefficient	No. of children over born	
				Unadjusted	Adjusted
Age effective marriage	14	9	.34	.774	.804
	15	15		.664	.664
	16	26		.574	.504
	17	29		.514	.424
	18	37		.344	.304
	19	16		.004	.164
Ever use of contraception	Yes	20	.40	.904	.894
	No	112		.344	.344
Pregnancy wastage	Yes	10	.03	.304	.374
	No	122		.434	.424
Place of residence	Urban	26	.04	.264	.384
	Rural	106		.464	.434
Ever attended school	Yes	55	.20	.254	.304
	No	77		.544	.504
Caste	SC	41	.13	.514	.524
	Other	91		.384	.384
Listens to radio	Yes	49	.18	.284	.304
	No	83		.504	.494
Husband approves of family planning	Yes	95	.12	.484	.464
	No	37		.274	.334
Couple discussed family planning last year	Never	56	.12	.344	.354
	once or twice	60		.464	.474
	More often	16		.564	.464
Mother-in-law present	Yes	9	.11	.224	.234
	No	123		.434	.434

Grand mean = .424
No. of cases = 132

The second most important determinant of adolescent fertility in Punjab is the age at effective marriage having a β coefficient of .34. The table clearly shows a negative relationship between the age at effective marriage and total number of children ever born. As can be seen from the table, at age 14 years, total number of children ever born is .804 but at 19 years of age the number of children born is only .164. Education of women is also an important factor having a β coefficient of .20. Those women who have been to school have lower fertility (.304) compared with those who have never been to school (.504).

Women's exposure to radio also substantially affects the fertility of adolescent women. Those women who listen to radio regularly have a total children ever born of .304 compared with .494 for those who are not exposed to it. Similarly, caste is also an important factor influencing the fertility level of adolescent women. Those women who belong to scheduled castes have a higher fertility (.524) than those who are non-scheduled castes (.384).

Both husband-wife communication and husband's approval have a beta coefficient of .12. Those women who have never discussed the use of family planning methods have the lowest fertility (.354). As expected, those who have discussed only once or twice have a higher number of children ever born (.474) than those who have discussed it more often (.464). Those women whose husbands approve of family planning have an average of .464 children ever born compared with .334 for

those whose husband's do not approve. The results are not in the expected direction because husband's attitudes are those reported by their wives.

The presence of mother-in-law in the household has a β coefficient of .11. But the results show that women who report that their mothers-in-law are present in the household have .234 children compared with .434. The skewed distribution of the variable can be a possible explanation for this result.

Finally, place of residence and pregnancy wastage have beta coefficients of .04 and .03 respectively. The computed results show that women living in urban areas have a lower fertility (.384) than those living in the rural areas (.434). Similarly, women who have had either spontaneous abortion, induced abortion or still birth give birth to an average of .374 children during their teens compared with .424 for those who have never experienced any pregnancy loss.

To sum up, use of contraception, age at effective marriage, women's education and exposure to radio are important determinants of adolescent fertility in Punjab. Caste, husband's approval, husband-wife communication and presence of mother-in-law in the household also significantly affect the fertility behaviour of adolescent women. On the other hand, place of residence and pregnancy wastage have the lowest effect on total number of children ever born to adolescent women.

Kerala

Table 4.12 shows beta coefficient and adjusted R squared values for the predictor variables for the state of Kerala. After comparing the first three equations, we find that in Kerala women's exposure to cinema or theatre is the most important determinant of total number of children ever born. Also, husband-wife communication in terms of discussion regarding the number of children has a greater influence on adolescent fertility than discussion regarding the use of contraceptive methods. As can be seen from table 4.1, two predictor variables in Kerala, women's education and the presence of mother-in-law in the household have a skewed distribution. Thus, we have removed these two variables from our analysis in equation 5. The equation shows that even after removing these two variables there is hardly any change in the β coefficients. Moreover, the adjusted R squared changed only .20 in equation 3 to .18 in the equation 5. Thus, we select equation 3 which consists of all the nine variables. Caste has been dropped in Kerala as 97 percent of adolescent women in Kerala belong to the non-scheduled castes and the non-scheduled tribes. The multiple R squared for equation 3 is .20 which indicates that the predictor variables explain a small variation of total number of children ever born. However the F value of this equation is 2.909 and the multiple R squared is significant at below 1% level.

Table 4.12: MCA of children ever born using different predictors, Kerala

Variables	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5
Age at effective marriage	.33	.33	.26	.26	.27
Ever use of contraception	.06	.08	.10	.08	.09
Pregnancy wastage	.02	.00	.00	.02	.01
Place of residence	.06	.07	.06	.05	.07
Ever attended school	.14	.12	.13	.07	-
Caste	-	-	-	-	-
Listens to radio	.14	-	-	-	-
Watches television	-	.12	-	-	-
Goes to Cinema	-	-	.18	.12	.17
Husband approves of family planning	.13	.15	.16	.10	.15
Discussed family planning last year	-	-	-	.26	-
Discussed children	.28	.29	.31	-	.29
Mother-in-law present	.04	.02	.01	.00	-
Multiple R square (adjusted)	.193	.189	.204	.188	.188

Table 4.13 shows the results of equation 3. The multiple classification analysis of CEB in Kerala shows that husband-wife communication regarding the number of children they would like to have is the most important fertility influencing predictor variable in Kerala. The β coefficient for this variable is .31. The adjusted values for total mean number of children ever born shows that adolescent women who have discussions with their husband's have an average of .503 children compared with .193 children for those who do not communicate with their husband's. This unexpected relationship is due to the fact that these adolescent women have not yet completed their family size.

Table 4.13: MCA of number of children ever born, Kerala

Variables	Value	No. of cases	β coefficient	No. of children ever born	
				Unadjusted	Adjusted
Age at effective marriage	14	15	.26	.403	.413
	15	30		.563	.543
	16	40		.453	.453
	17	38		.393	.353
	18	27		.223	.283
	19	12		.003	.043
Ever use of contraception	Yes	45	.10	.423	.463
	No	117		.363	.353
Pregnancy wastage	Yes	13	.00	.383	.383
	No	149		.383	.383
Place of residence	Urban	24	.06	.413	.453
	Rural	138		.373	.373
Ever attended school	Yes	160	.13	.383	.393
	No	2		.003	-.157
Goes to cinema	Yes	28	.18	.183	.193
	No	134		.423	.423
Husband approves of family planning	Yes	91	.16	.363	.313
	No	71		.413	.473
Discussed children	Yes	100	.31	.463	.503
	No	62		.263	.193
Mother-in-law present	Yes	4	.01	.503	.433
	No	158		.383	.383

Grand mean = .383
No. of cases = 162

The second most important predictor variable is the age at effective marriage having a β coefficient of .26. As expected, there is a negative relationship between age at effective marriage and the total number of children ever born to adolescent women.

The β coefficient of women's exposure to cinema and husband's approval ranges between .16 to .18. Women who go to cinema at least once a month have given birth to only .193 children in their teens compared with .423 children for those who are not exposed to cinema. The finding suggests that cinema as a means of mass media exposure significantly affect the number of children ever born to adolescent women in Kerala.

Husband's approval for the use of family planning is also an important determinant of adolescent fertility. Table 4.13 clearly shows that those women who perceive that their husband's approve of family planning have a lower fertility (.313) than those who do not (.473). These results show that women in Kerala are able to correctly judge their husband's attitude towards the use of contraception. This may nave been facilitated due to better education in the state. As indicated by the β coefficient of .13, education of women in Kerala is also an important factor which has an impact on the fertility behaviour of adolescent women. But the results have to be interpreted taking into the consideration the fact that most women in Kerala attend school.

In the care of the variable use of contraception the results show that adolescent women who have ever used contraception have a higher fertility (.463 children) than those who do not use it (.353). This unexpected relationship can be a result of the fact that the use of traditional methods among adolescent women is very high in Kerala. Among those women are using any method, almost half of them rely on traditional methods which have higher contraceptive failure rates.

Place of residence has a beta coefficient of .06. Those women who are living in urban areas have .453 children compared with .373 for those living in rural areas. This is perhaps due to the fact that urban-rural difference as such does not exist in the state and thus the results may not capture the difference between rural and urban areas.

The beta coefficient for the presence of mother-in-law in the household is .01. But the results show that women who are staying with their mothers-in-law have a higher fertility (.433) than those where mother-in-law is not present (.383). But the skewness of the variable in Kerala does not allow an intensive interpretation of the results. The analysis of data in the above table indicates that pregnancy wastage in Kerala does not have any affect on the level of adolescent fertility. The adjusted mean number of children ever born to adolescent women who have had spontaneous abortions, induced abortions or

still birth and those who have not experienced any pregnancy loss is .383 children.

To sum up, the husband-wife communication, age at effective marriage, husband's approval of family planning, women's exposure to cinema, wife education and the use of contraception are all important determinants of total number of children ever born. Place of residence has a moderate influence an adolescent fertility and the presence of mother-in-law and pregnancy wastage do not seem to influence fertility behaviour of adolescent women in Kerala.

Summary

The MCA of the four states shows that the age at effective marriage, Husband-wife communication, use of contraception, mass media exposure, husband's approval for family planning and women's education significantly influence adolescent fertility.

A comparison of the β coefficients of number of children ever born among the four states is presented in Table 4.14. A comparison of Madhya Pradesh and Andhra Pradesh shows that in both the states age at effective marriage has emerged as the most important determinant of adolescent fertility followed by husband-wife discussion regarding the number of children they would like to have. Mass Media exposure in another important factor which influences adolescent fertility in both the

states. While in Madhya Pradesh exposure to radio has a relatively greater influence, television is the most important means of communication in Andhra Pradesh.

The β coefficients of Punjab and Kerala show that the use of contraception in Punjab and interspousal communication in Kerala play an important role in determining the fertility of adolescent women. Another important factor is electronic media: radio in Punjab and cinema in Kerala influence adolescent fertility rate.

Table 4.14: A Comparison of MCA of children ever born for Madhya Pradesh, Andhra Pradesh, Punjab and Kerala.

Variables	Madhya Pradesh β coefficients	Andhra Pradesh β coefficients	Punjab β coefficients	Kerala β coefficients
Age at effective marriage	.34 (1)	.36 (1)	.34 (2)	.26 (2)
Ever use of contraception	.08 (6)	.13 (4)	.40 (1)	.10 (6)
Pregnancy wastage	.06 (8)	.07 (5)	.03 (9)	.00 (9)
Place of residence	.07 (7)	.07 (5)	.04 (8)	.06 (7)
Ever attended school	.09 (5)	.03 (6)	.20 (3)	.13 (5)
Caste	.04 (10)	.03 (6)	.13 (5)	-
Listens radio	.11 (3)	-	.18 (4)	-
Watches television	-	.14 (3)	-	-
Goes to cinema	-	-	-	.18 (3)
Husband approves of family planning	.10 (4)	.03 (6)	.12 (6)	.16 (4)
Couple discussed family planning last year	-	-	.12 (6)	-
Discussed children	.17 (2)	.22 (2)	-	.31 (1)
Mother-in-law-present	.05 (9)	.03 (6)	.11 (7)	.01 (8)

Note: Parenthesis give rank order.
- not included in MCA.

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Of the two southern states, when we compare β coefficients of Andhra Pradesh and Kerala, MCA reveals that while lower age at effective marriage in Andhra Pradesh is an important variable, the relatively lower adolescent fertility rate of Kerala is accounted for by higher interspousal communication, which is the most important factor influencing adolescent fertility in this state. In the case of mass media communication, exposure to cinema has a greater influence in Kerala whereas television is the important means of mass media influencing adolescent fertility in Andhra Pradesh. Moreover, husband's approval of family planning plays an important role in determining adolescent fertility rate in the state of Kerala.

In the case of the two northern states of Madhya Pradesh and Punjab, the table shows that although age at effective marriage is important in both the states, higher use of contraception in Punjab accounts for the difference in adolescent fertility rate in the region. Exposure of adolescent women to radio also influences fertility rate in both the states. These findings show that unlike in the southern region, in the northern region of the country, radio is an important means of communication. In Punjab the education of adolescent women is also a significant variable which influences adolescent fertility rate.

Limitations of the Study

The above findings are based upon, as mentioned, data collected in NFHS. The data are of considerably good quality but do not permit a through analysis of adolescent fertility. As shown in our framework, the contextual factors in particular, women's autonomy in reproductive decision making affect adolescent fertility. However, in NFHS data on this variable are not available. For this reason we have selected the variable mother-in-law present at the time of interview. Measuring the influence of mother-in-law through her presence at the time of interview is not strictly speaking appropriate. Similarly, the data available on the variable husband's approval for the use of family planning have been collected from women and their perception of husband's approval for family planning has been recorded. Instead of women's perception about their husbands, it would have been better to have used responses based on questions directly asked to husbands regarding approval of contraceptive usage.

In our analysis of appropriate data were available regarding the variables mentioned above, the results of our analysis may have been different. Some of these variables may have emerged as more important than the variables presented in the analysis. Moreover, although NFHS collected data on malnutrition among infants and children, no such data are available for adolescent women. Therefore, we could not analyse the effect of malnutrition on pregnancy wastage among

adolescent women. The variable on abortion in NFHS does not distinguish between spontaneous and induced abortions and therefore, we could not analyse them separately.

Finally, as shown in the figure 3.1, the relationships that have been presented between the concepts are bidirectional in nature. We have not examined the bidirectional relationships which are out of the scope of the present study.

The limitations that have been mentioned above may have affected our analysis. Thus, the results that have been presented in this study should be considered in the light of these limitations.

CHAPTER V

Conclusion

Adolescent women comprise the largest generation ever in the world today. This also holds true for India. The population of adolescent women aged 10-19 years in the 1991 population census was 86 million. As the median age at marriage for women is 16 years nearly 40 percent of all young women aged 15-19 years are already married. As mentioned, according to NFHS nearly 17 percent of the annual number of births that occur in the country are to adolescent women. However, despite high fertility rates, adolescent fertility in India has not been extensively analysed.

In this study we have examined adolescent fertility in the four major states of India: Madhya Pradesh, Andhra Pradesh, Punjab and Kerla. Madhya Pradesh and Andhra Pradesh have the highest rates in India and Punjab and Kerala have the lowest. An attempt has also been made to understand the factors influeing adolescent fertility both within and across the regions.

The analysis of our study shows that age at effective marriage, use of contraception, interspousal communication and mass media exposure are the most important factors influencing adolescent fertility in the four states. Interestingly, the results of the study

point out that different policy measures are necessary in the states that have been examined. These are discussed below.

In view of the findings of the present study that age at effective marriage is the most important predictor of adolescent fertility in Madhya Pradesh and Andhra Pradesh, the states with the highest level of adolescent fertility in India, steps should be taken to strictly implement the legislation regarding age at marriage. In fact, there is a need to raise the minimum legal age at marriage in India which at present is 18 years. The study clearly shows the adolescent woman who marry below the age of 20 years face the risk of deleterious reproductive health during pregnancy. Infants who are born to mothers before age 20 years are also at risk.

The use of contraception has also emerged as an important factor influencing adolescent fertility. Generally, the use is very low among adolescent women. Moreover, among those who are using it, a majority rely on traditional methods. Table 5.1 shows that in the states of Punjab and Kerala where the use is comparatively higher, a large number of adolescent women are using traditional methods.

Table 5.1: Percentage of adolescent women (15-19 years) using any method, any traditional method and any modern method of family planning in Madhya Pradesh, andhra Pradesh, Punjab and Kerala.

Type of Contraception used

States	Any	Traditional	Modern
Madhya Pradesh	3.8	0.2	3.7
Andhra Pradesh	4.5	0.0	4.5
Punjab	10.7	3.1	7.6
Kerala	13.0	5.6	7.5

Source: International Institute of Population Science (IIPS), 1995, National Family Health Survey, India, 1992-93.

But the fact that most of the adolescent women are not using any birth control method does not mean that they desire to have children. Currently married women who say that they do not want any more children or want to wait before having another child, but are not using contraception are defined as having an unmet need for family planning.

The data collected in NFHS show that the unmet need is the highest among adolescent women. In India, one is every six married women with unmet need in an adolescent woman. Table 5.2 Presents the percentage of adolescent women having an unmet need for family planning in the four states.

Table 5.2: Percentage of adolescent women (15-19 years) having unmet need for spacing and limiting in Madhya Pradesh, Andhra Pradesh, Punjab and Kerala.

States	Spacing	Limiting	Total
Madhya Pradesh	32.3	1.5	33.8
Andhra Pradesh	18.8	1.7	20.6
Punjab	22.1	1.5	23.7
Kerala	26.1	1.2	27.3

Source: International Institute of Population Science (IIPS), 1995, National Family Health Survey, India, 1992-93.

The table clearly indicates that the unmet need for family planning among adolescent women is the highest in Madhya Pradesh. It is interesting to note that despite the fact that the use of contraception is comparatively higher in Kerala and Punjab, in both the states at least a quarter of adolescent women intend to use contraception but for some reason or other are not using it. As can be seen from the table, adolescent women also have an unmet need for family planning have need for spacing methods (90 percent of them). This is particularly due to the fact that young women want to have children.

Table 5.3 shows the unmet to met need ration for spacing and limiting methods. Madhya Pradesh and Andhra Pradesh have a high unmet to met need ratio particularly for spacing methods.

Table 5.3: Unment to met need ratio among adolescent women (15-19 years) in Madhya Pradesh, Andhra Pradesh, Punjab and Kerala.

States	Spacing	Limiting	Total
Madhya Pradesh	12.92	1.15	8.89
Andhra Pradesh	20.88	0.45	4.57
Punjab	2.23	1.87	2.21
Kerala	2.10	2.00	2.10

Source: International Institute of Population Science (IIPS), 1995, National Family Health Survey, India, 1992-93.

These findings indicate that the needs of adolescent women in these states largely remain unsatisfied by the current family planning programme of India. It is particularly due to strong emphasis of India's family planning programme on terminal methods of contraception such as female sterilization and its neglect towards the demand for spacing among adolescent women. Substantially high unmet need particularly for spacing methods and lower percentage of met need explains low contraceptive prevalence rate among adolescent women. Couples begin using family planning only after they achieved their desired family size. Thus, in addition to permanent methods, the family planning programme in the country should offer a wide array of temporary methods keeping in view the needs of adolescents.

Availability and usage of spacing methods will permit the young couples to plan the timing of their

first birth. Postponing first pregnancy through adequate spacing can not only improve the reproductive health of the mother but also the survival of infants born to adolescent women. It would decrease the number of spontaneous abortions, induced abortions and still births to adolescent women. In addition, it will also lead to a decline in infant and maternal mortality rate among women also become pregnant during their teens.

The communication between husband and wife on reproductive matters is also an important factor which influences the use of contraception and in turn, fertility among adolescent women. Encouraging better communication between the wives and husbands regarding the use of contraception or number of children they would like to have is essential especially, for adolescents who still have to plan their family. Better interspousal communication can also help to meet the unmet need for family planning as husbands and mother-in-law's opposition is often cited as a reason for non-use of contraception. Thus, to encourage better communication between the couple, men as emphasized in the ICPD, Cairo, programme of action should be involved in family planning programmes so that, they can share their responsibility.

Among the various reasons of unmet need, lack of information about the contraceptive methods, their sources and how to use them is also an important factor. Many women do not use contraceptive methods as they are

worried about the side effects. Mass media communication can address all these needs. Mass media can be used a means of spreading information on knowledge and use of contraception. Also, it can make adolescent women aware of the importance of delaying early marriage and childbearing. The results of this study show that there are regional differences in the importance of various means of mass media communication. While radio is the most important means in the northern region, television and cinema have a greater influence in the southern states of Andhra Pradesh and Kerala respectively. Therefore, radio in Madhya Pradesh and Punjab, television in Andhra Pradesh and cinema in Kerala should be used as a means of spreading awareness among adolescents. The electronic media can also promote and encourage better communication between the spouses and thereby reduce adolescent fertility in India.

Adolescent fertility or teenage child bearing has many disadvantages. If a woman delays her marriage and childbearing, she will not only be able to lead a healthier life but may also able to pursue her education, further and gain access to better · employment opportunities. "Today young women face hardship and challenge. But the Challenge for communities and nations – to give young women the helping hand they need and deserve – is even greater" (AGI, 1998).

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