Reproductive Health Status in Andhra Pradesh

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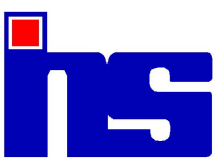

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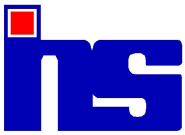

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Reproductive Health Status in Andhra Pradesh

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Definition:

Reproductive health refers to mortality, morbidity and quality of life attributable to the reproductive system, process and events experienced by men and women at all ages. Conceptually, the term should include reproduction related mortality, morbidity and quality of life issues of both men and women. But discussion about women's health problems usually gets larger attention in the context of pregnancy and child birth related morbidity and mortality. For example; Zurayk (1988) defined reproductive health as "The ability of women to live through the reproductive years and beyond with reproductive choice, dignity, and successful childbearing, and to be free of gynecological disease and risk". The International Conference on Population and Development (ICPD, 1994) defined reproductive health in generic terms but stressed the importance of women's reproductive health. The consensus view, in ICPD (1994), of reproductive health was that; (a) people have the ability to reproduce, (b) women are able to go through pregnancy and child birth safely, (c) the outcome of pregnancy is successful in terms of maternal and infant survival and well being, and (d) couples are able to have sexual relations free of the fear of pregnancy and of contracting disease (Fathalla, 1988). The World Health Organisation (WHO, 1998) defines reproductive health as "a state of physical, mental and social well-being in all matters relating to the reproductive system at all stages of life." The term reproductive age group refers to the active reproductive years in women starting with menarche around 12-14 years and ending with menopause around 45-49 years. For demographic purposes, reproductive age group is usually defined as 15-49 years or 12-49 years. Reproductive health may at times be, confusedly, restricted to problems of women in the reproductive age group. The "... at all ages of life" part in the WHO definition is to remind us about the reproductive

tract related mortality and morbidity experienced beyond the reproductive age group. For example, carcinoma of cervix, prolapse uterus, etc.

Indicators of Reproductive Health:

The World Health Organisation indicators for monitoring progress towards Health for All (WHO, 1981) included a few broad indicators of reproductive health, such as; (a) Fertility rates, (b) maternal mortality rate, (c) ages at which mothers have children, and (d) birth intervals. In 1996 the working group on Reproductive Health of the Administrative Committee on Coordination (ACC)[1] task force on Basic social services for all (BSSA) held a meeting to facilitate interagency dialogue and cooperation on the issue of reproductive health indicators.

Table-1 shows the list of outcome and process indicators recommended by the ACC task force on basic social services for all. Process indicators are subject of a separate paper dealing with RCH program performance. In this paper we will concern ourselves with the outcome indicators of reproductive and child health. This list does not include age at marriage, which affects biological, social, and personal health status of the married. Marriage is an important marker of the beginning of reproductive phase of life in India. Although, reproduction is feasible and does take place to some extent, outside of marriage, marital fertility is the major contributor to the fertility.
Pre-puberty marriage is dysfunctional not only for the individual but also for the family and the society. It affects the health of the mother, for at an early age a woman is not fully prepared for the great physical and mental strains of maternity. The comparative immaturity of mother in turn affects the health of her children too. Since by marrying at an early age, the period available for

[1] The Administrative Committee on Coordination (ACC) was established in 1946 as a standing committee that supervises the implementation of the agreements between the United Nations system organisations, the specialised agencies, WTO and Bretton Woods institutions. Its mandate is to promote cooperation within the system in the pursuit of the common goals of member states. The committee meets twice a year and is chaired by the Secretary General of the United Nations. It has an extensive machinery consisting of subcommittees and subsidiary bodies.

begetting children is large, size of the family also becomes large which makes it difficult to maintain minimum living standards. In some cases child marriage creates maladjustments in the family, ultimately leading to family disorganisation. Hence average age of marriage, particularly of women gives useful insights about reproductive health status of a population. Late marriage has also certain complications and increases reproductive risks. However, early marriage is the contemporary problem. Hence rise in average age at marriage from the very low levels as of now, will be an indicator or progress towards better and hence Similarly, the average age of mothers at the time of first birth is another important indicator of reproductive health. It reflects the average age at marriage, and the average time from marriage to first birth. From the reproductive health point of view, mothers average age at first child birth is a more valid indicator.

Table 1 Reproductive Health Indicators

Outcome indicators of reproductive health
Total fertility rate (TFR)
Maternal mortality ratio (MMR)
Perinatal mortality rate
Low birth weight prevalence
Syphilis prevalence in pregnancy
Anemia prevalence in pregnancy
Infertility prevalence in women
Urethritis incidence in men
Prevalence of female genital mutilation
HIV prevalence in pregnant women aged 15-24
Process indicators of reproductive health
Contraceptive prevalence rate
Ante natal care coverage
Births attended by skilled health personnel
Availability of basic essential obstetric care
Availability of comprehensive essential obstetric care
% of obstetric and gynecological admissions owing to abortion

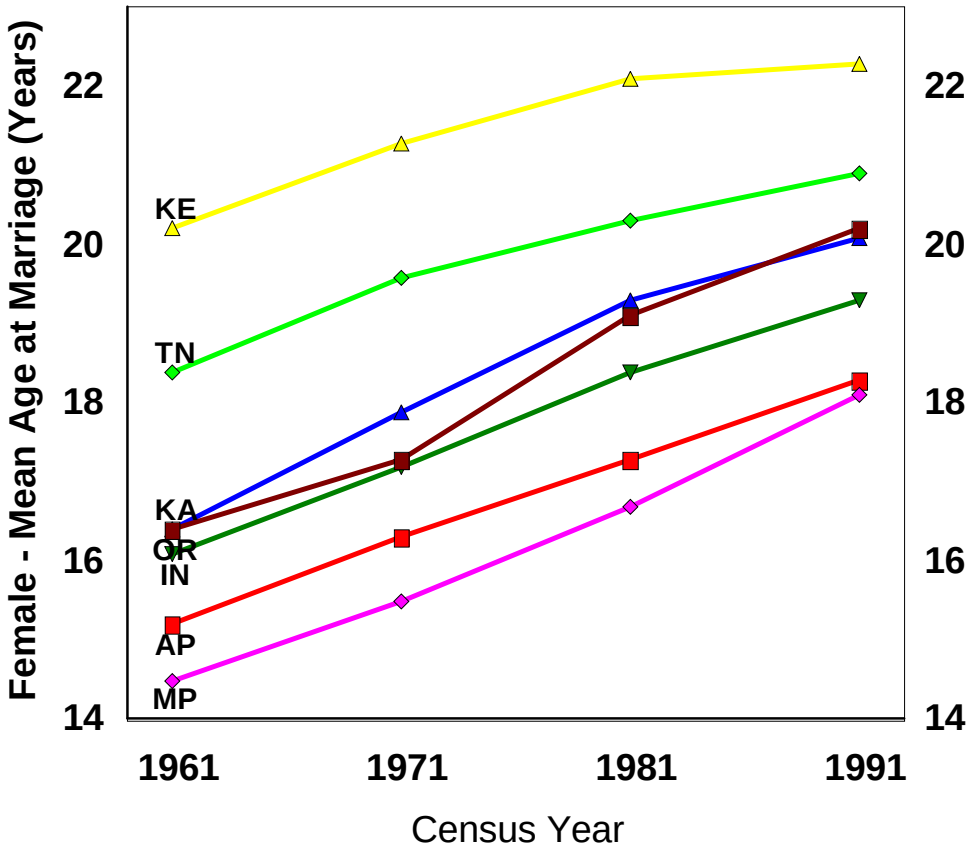
Fertility rates, such as the age specific and total fertility rate Average birth intervals are an indicator of the extent to which couples in the society are planning their families and the intensity of reproductive load on an average woman.

Birth intervals, give an indication of birth spacing and the pace of reproductive activity. Maternal mortality and mortality differentials by sex, indicate the mortality directly associated with reproduction, and differential mortality in women, which may be attributable to their role, and status in society. Reproductive morbidity, indicate the quality of life affected on account of reproductive activity or reproductive tract diseases.

A. Age at marriage:

Estimate of longer term trend of age at marriage is available from the marital status question in the decennial censuses. The proportion of single women in each age group can be arrived from the answers to questions about marital status. Of all possible answers to this question such as married, divorced, remarried, the never married , i.e. single status is the least confusing. For those who eventually marry, the average age at marriage would equal to the average years for which they remained single. Hence the proportion single is used to compute the singulate mean age at marriage of females (SMAM-F). This is indirect estimate of mean age at marriage, can be obtained from any cross sectional survey, asking about the marital status of women in various age groups. average age at marriage. The prefix “singulate” refers to the computational method of arriving at the mean age at marriage. The main difference between the direct and indirect estimate is about the time location of the estimates. The directly estimated average age at marriage clearly refers to the period for which marriage registration data is available. The time location of singulate mean age marriage is imprecise. This estimate refers to a much longer time period. Thus SMAM-F estimate can be a valid tool to assess medium and long term trends in age at marriage.

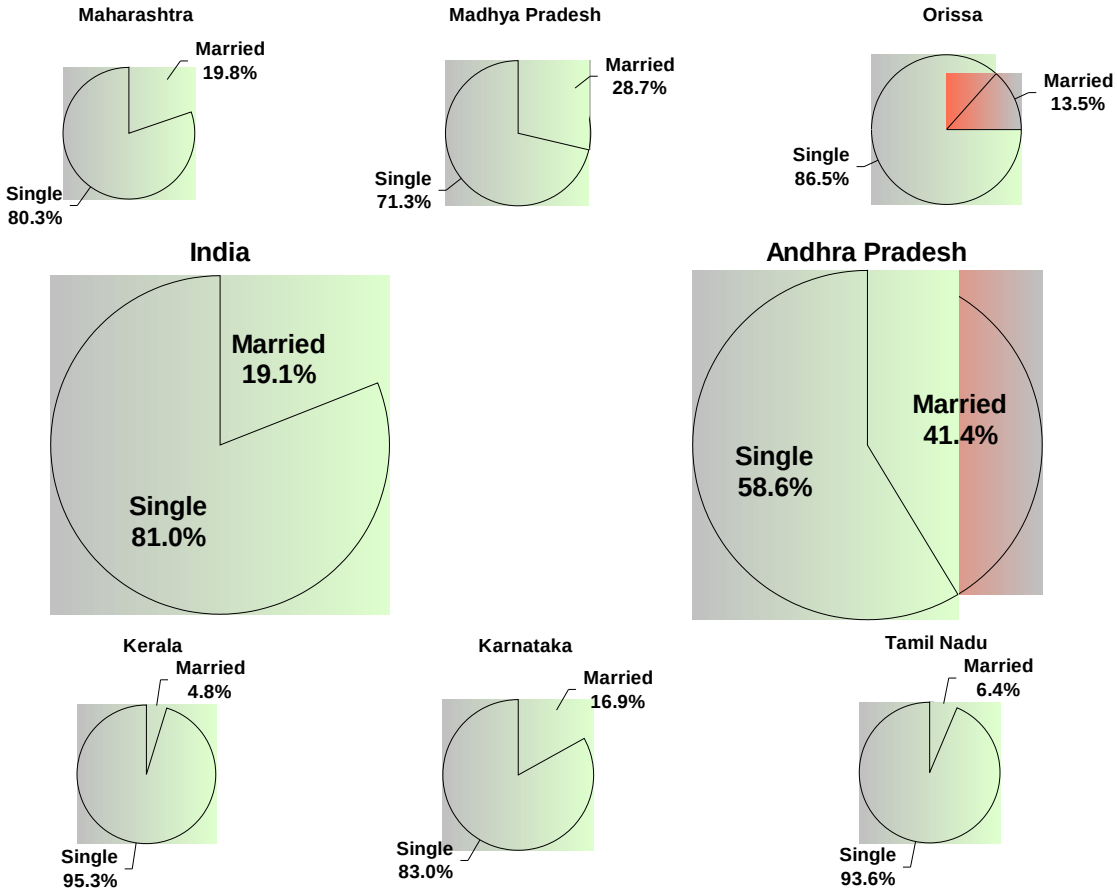
Figure-1 Long term trend of female mean age at marriage in India, AP and neighboring states.



[1] Source: Das and Devamoni, Singulate mean age at marriage estimate from census data (1998).

Figure-1 shows mean age at marriage estimated from the 1961, 71, 81 and 91 censuses. The average age at marriage has been gradually increasing over the last five decades. The increase in average age at marriage of girls is very gradual in the country taken as a whole, increasing from about 16 years for people enumerated in 1961 to about 19 years for those enumerated in 1991. The rate of increase in age at marriage for Andhra Pradesh and its neighboring states is similar to the national trend. The average age at marriage in AP was comparatively much lower for people enumerated in 1961. The same situation continued over the four decades. As a result Andhra Pradesh maintained its dubious distinction of very high proportion of child marriages compared to the country as a whole as well as situation in the neighboring states. A recent study by Satya Sekhar (2000) in Nizamabad district estimated the mean age at marriage at 17.8 years. This is consistent with all AP average of 18.3 years observed form 1991 census.

Figure-2 Marital status of young girls (<18 years) in AP, and other states.



[1] Source: Median of estimates for years 1993-98 from SRS 1993-94 statement-12, p28; 1995-96 statement-11, p28; 1997-98 statement-11, p27.

Figure-2 shows more recent estimate of the marital status of girls younger than 18 years for AP, neighboring states and India. The high incidence of early marriages in AP compared to all its neighboring states as well as the Indian average is very clearly seen here. About 41% of young girls in AP marry below the legal age at marriage, which is 18 years. The Indian average is 19% i.e, less than half of the estimate for AP. In Kerala and Tamil Nadu only about 5% of young girls below 18 years are married. The figure is slightly higher for other neighboring states like Karnataka (17%), Maharashtra (20%), Madhya Pradesh (29%), and Orissa (13%).

High prevalence of child marriage in Andhra Pradesh is also confirmed by recent estimate from the National Family Health Surveys conducted in 1998-99 (NFHS-2). Table-1 shows that about 64% of women respondents aged 20-24 years had married before they were 18 years old. This group of

respondents is very young, i.e, 20-24 years in 1998-99. Thus the 64% among them who married before they were 18 would have done so before 1996. Hence this estimate would relate to the early 1990s. Multiple Indicator Sample Survey (MICS-2000) estimated that in AP the mean age at marriage is 15.3 (14.7yrs in rural and 16.7yrs in urban areas). Median age at marriage i.e, the age by which 50 percent women got married is close to 15 years. This is far below the legal age at marriage of 18 years set by the Govt. of India. Another survey (Sekhar,2000) in Nizamabad district found that 44% of married women married before 18 years of age.

Table-1 Percentage of women married by specific exact ages, median age at first marriage, according to current age and residence, AP, 1998-99.

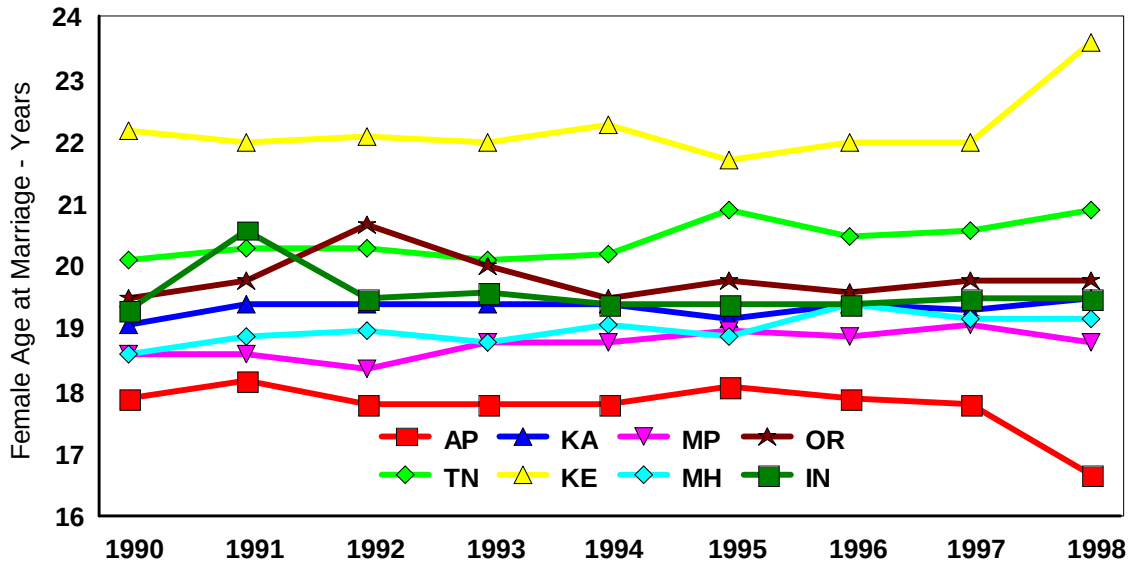
Current Age	Percentage ever married by exact age						Median age at First Marriage
	13	15	18	20	22	25	
15-19	4.1	17.6	NA	NA	NA	NA	NC
20-24	9.4	30.6	**64.3**	81.3	NA	NA	16.6
25-29	14.9	39.7	71.4	86	92.3	95.7	15.7
30-34	20.4	48.1	79.8	89.9	94.8	96.8	15.1
35-39	21.2	48.4	81.9	91.1	94.6	97.2	15.1
40-44	27.9	56.8	85	91.7	96	96.9	14.4
45-49	34.2	61.1	88.2	93.1	96.9	98.3	14.3

[1] Source: NFHS-2 (AP). NA-Not applicable; NC-Not calculated because less than 50 percent of women in the age group 15-19 have married or started living with their husband by age 15. The current age groups include both never married and ever married women.

The mean age at marriage derived from cross sectional surveys like the census and NFHS are indirect estimates. Ideally, estimates of average age at marriage of females, prevalent around any given time period is computed by ascertaining the age of the brides for all marriages taking place during that period. Since most marriages are not registered in India, such direct estimation of average age at marriage was not feasible. Starting with 1990, the Sample Registration System (SRS) has been collecting information on the number of females who got effectively married during the reference period of six months of each half yearly survey (SRS, 1991-1998). Thus direct estimates of average age at marriage is now available for India and major states from 1991 onwards. Figure-3 shows direct estimates of the average female age at marriage for India, Andhra Pradesh, and its neighboring states. Clearly, female age at marriage is lowest in AP compared to India as well as the neighboring

states. What is worrying is the recent trend showing a further reduction in the average age at marriage. Since the SRS sample size is small, we can not attach much importance to the declining trend suggested by the estimates for recent years. However, the overall estimate spread across the decade of 1990s showing very low age at marriage for girls in AP can not be wished away.

Figure-3 Female age at marriage in AP and India - Time trend since 1990s.



[1] Source: SRS Reports 1990 statement-16, p27; 1991-92 statement-4, p13; 1993-94 statement-13, p31; 1995-96 statement-12, p31; 1997-98 statement-12, p28.

Marriage is a very personal and important decision made by families. Many factors would naturally contribute to the age at marriage. Average age at marriage for girls in urban areas has been found to be higher by about 1-3 years compared to the rural areas (Ahuja, 1993). Data from NFHS-2 show that a larger proportion of young girls living in rural areas get married below 18 years of age (Table-2).

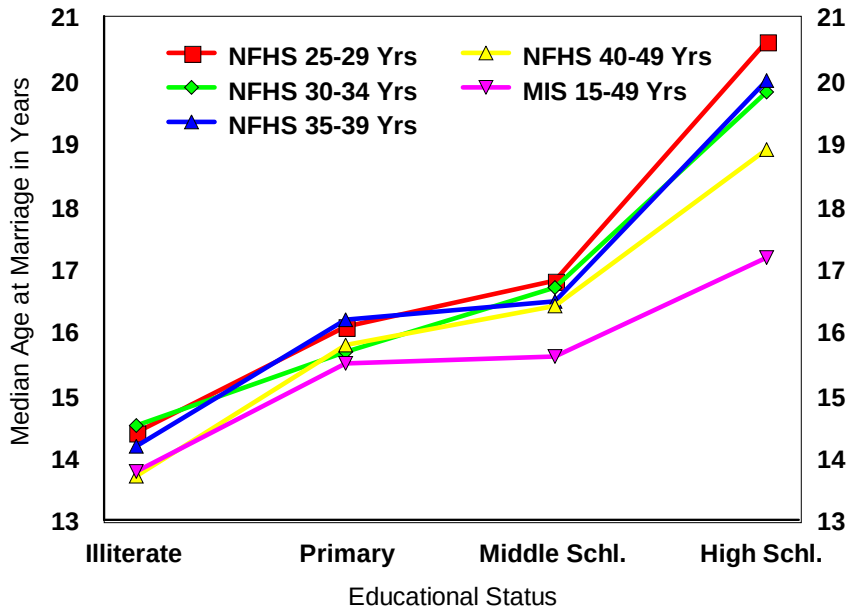
Table-2 Percentage of women married by specific exact ages, median age at first marriage, according to current age and residence, AP, 1998-99.

Current age group	Percentage ever married by exact age						Median age at First Marriage		
	13 Years		15 Years		18 Years				
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Diff.
15-19	5.1	1.5	22.1	5.8	NA	NA	NC	NC	
20-24	11.7	3.7	37.0	14.9	73.1	42.8	15.9	18.5	2.6
25-29	18.1	5.7	46.3	20.3	79.4	48.2	15.2	18.6	3.4
30-34	24.9	8.7	55.8	27.9	87.3	59.8	14.5	16.6	2.1
35-39	25.1	10.8	55.4	29.8	85.9	71.6	14.6	16.3	1.7
40-44	33.0	12.5	64.5	33.3	90.4	68.3	13.9	16.3	2.4
45-49	38.7	23.3	67.5	45.7	92.8	77.0	13.9	15.4	1.5

[1] Source: NFHS-2 (AP). NA = Not applicable; NC = Not computed because of inadequate sample size. The current age groups include both never married and ever married women.

Table-2 also confirms the earlier observation that the average age at marriage has been gradually increasing. For example, the women in the 45-49 year age group would have experienced the marriage customs prevalent about 20-30 years ago. The women now aged 15-19, and 20-24 years are experiencing contemporary nuptial customs.

Figure-4 Median age at marriage according to education levels and age.



[1] Source: NFHS-2(AP) and MICS-2000 (AP)

We see from Table-2, that the proportion of women in older age groups who had their marriage when they were less than 18 years is much higher compared to women in younger age groups. This proportion gradually falls as

we approach the girls in younger age group. The rural-urban difference is also very clearly recognised. About 73% of 20-24 year women in rural areas said that they were married before their 18th birthday, compared to 43% in case of urban areas. The right two columns show that the mean age at marriage has gradually increased over time. The rural - urban difference of about two years in average age at marriage of girls has been sustained and may have increased a little over the last 30 years.

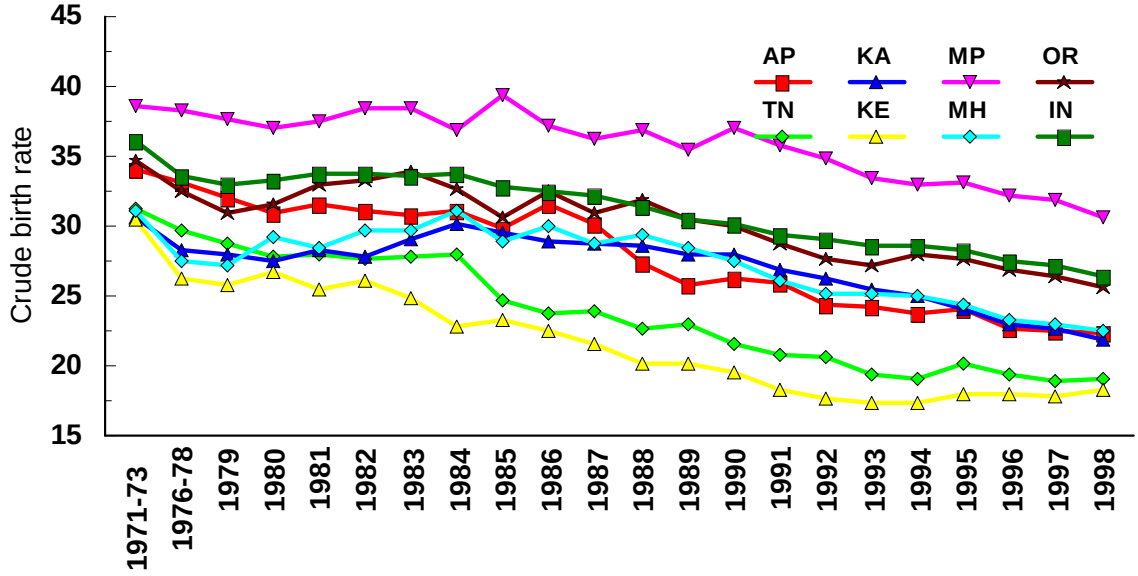
Various factors associated with residence in rural or urban areas may actually be working to cause the rural-urban gap in average age at marriage. For example, educational status of women appears to influence the age at marriage. Incidence of child marriage is considerably lower among educated women. Educated girls are more likely to marry after attaining the legal age at marriage. Infact within each group, the median age at first marriage is about five to six years later among women who have completed high school than among illiterate women.

B. Fertility:

Fertility, i.e. the basic ability to reproduce is at the root of reproductive health. Both infertility as well as high levels of fertility are bad for health. High prevalence of infertility has important psychological and sociological impact on the community. Very high levels of fertility means that women are devoting greater part of their lives to child bearing, and the exposure to maternal complications is high. In the contemporary Indian context, high levels of fertility is a major problem. Hence reduction in fertility levels is viewed as an indicator of improvements in reproductive health. The three common measures of fertility are; (a) Crude Birth Rate (CBR), (b) Age-specific fertility rates (ASFR), and (c) Total Fertility Rate (TFR). Crude birth rate (CBR) is the simplest of all and is defined as the number of births per annum per 1000 population. However, crude birth rate is influenced by the age-sex structure of the population apart from it's true fertility experience. The Age specific fertility rates, control for age-sex composition of the population. ASFR or age specific birth rate for a given age group is defined as the number of children born to women in the said age group per 1000 women in the same age group.

In this males are excluded. So variation due to sex composition is controlled. ASFRs are usually computed by five year age group within the reproductive age. For example, ASFR 15-19, ASFR 20-24, ASFR 45-49, etc. This stratification by age group controls for age composition but there are seven pieces of estimate, to deal with. The TFR summarises the ASFRs and provides a single statistic of the fertility experience. Hence TFR is mostly used by demographers to analyse trends of fertility. TFR is the average number of children a woman would bear throughout her reproductive life, if she were to experience the contemporary age specific fertility rates. In this section we will first present available estimates of crude birth rate and then proceed to TFR to understand the fertility trend in AP. The decennial census, Sample Registration System (SRS), and NFHS-1&2 are the major sources of information on fertility trends. In addition, the Multiple Indicator Survey-2000 also gives estimates of fertility in Andhra Pradesh for the year 2000.

Figure-5 SRS estimates of Crude Birth Rates of different states 1971-1998



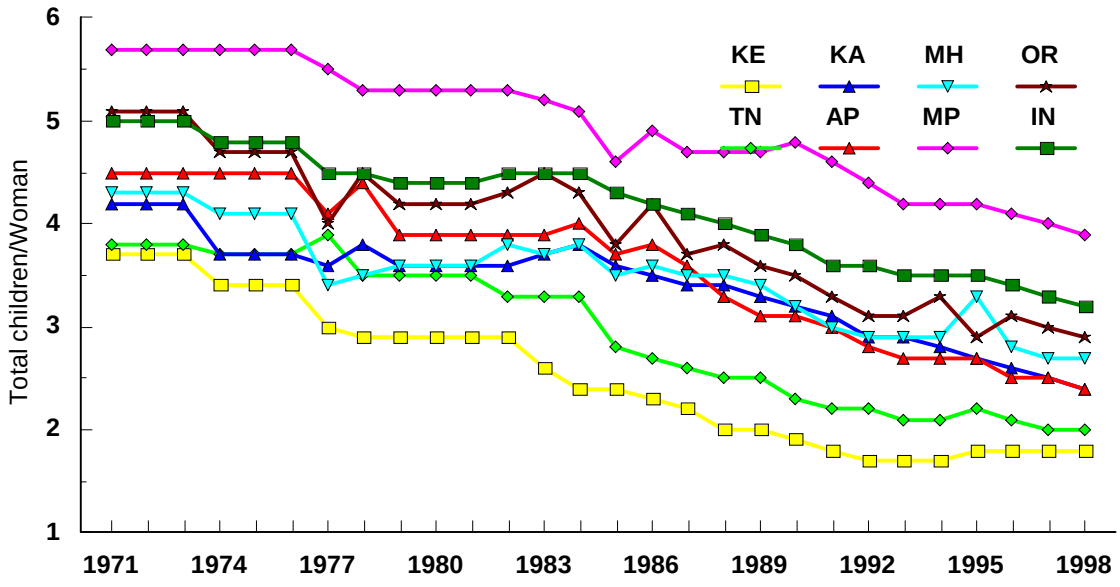
[1] Source: SRS for the period 1971-1998. Estimates of 1971-73 and 1976-78 are the average crude birth rates given in SRS 1976-78(statement-22)

Figure-5 shows SRS of CBR estimates from 1970s till date. In AP the Crude Birth Rate has been steadily declining over the last 30 years, as is the case for the neighbouring states and the all India average. Around 1971-73 the CBR in AP was about 35 per 1000 population. It declined to about 25 per 1000 population during the 1990s. The decline of CBR in AP is slightly better

than the all India average, but is less than some other south Indian states like the Kerala and Tamil Nadu. The decreasing trend of CBR is also corroborated by the estimates from the two NFHS conducted in 1992-93 (NFHS-1) and 1998-99 (NFHS-2) respectively. The two NFHS carried out six years apart show a decline in the CBR from 24.2 in 1992-93 to 21.4 in 1998-99. The CBR estimate of 23.2 per 1000 population in AP from the Multiple Indicator Sample Survey in 2000 is also consistent with the estimates from SRS (22.4 for 1998) and NFHS-2 (21.4 for 1998-99).

Figure-6 shows total fertility rate of Andhra Pradesh and other states from SRS. There is a constant decline of TFR from 1970s to 1998. The TFR of AP was 4.5 in 1971-73 and it has decreased to 2.4 in 1998. The southern states in India like Kerala and Tamil Nadu attained much lower fertility levels than AP (1.8 and 2 respectively). All India TFR was 5 in 1971-73 and declined to 3.2 in 1998 which is higher than AP. Madhya Pradesh shows the highest fertility rate among the neighbouring states of AP.

Figure 6 Total fertility rate (TFR) in Andhra Pradesh and other states 1971-1998

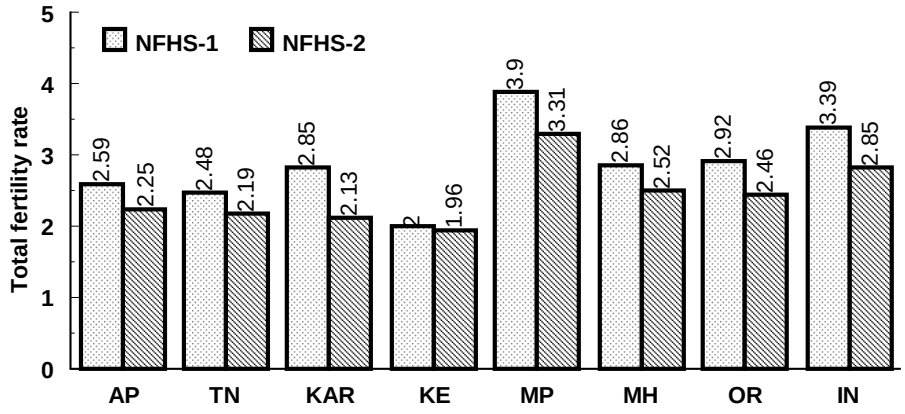


[1] Source: SRS for the period 1971-1998. Estimates for 1971-73, 1974-76 are the average total fertility rates given in SRS 1976-78 (statement no-38). Estimates for 1979-81 given in SRS 1981(statement-15)

Figure-7 shows the TFR estimates from the two NFHS. The NFHS estimates show a higher level of fertility compared to SRS estimates. This could be either real or on account of the small sample size of NFHS. However,

the time trend and the regional variations in TFR estimates from NFHS are consistent with SRS figures. For example SRS estimates show that TFR in Kerala and Tamil Nadu have been consistently lower than the TFR of AP. TFR of Karnataka has been more or less similar to that of AP. The data from two NFHS also give similar picture. The NFHS estimates also show a decline in TFR between NFHS-1 and NFHS-2. Multiple Indicator Sample Survey-2000 Andhra pradesh has collected fertility information. The TFR (calculated on the basis of the births that occurred during one year preceding the survey i.e., 1999-2000) in Andhra Pradesh is 2.3, 2.4, 1.9 for all AP, rural and urban areas respectively.

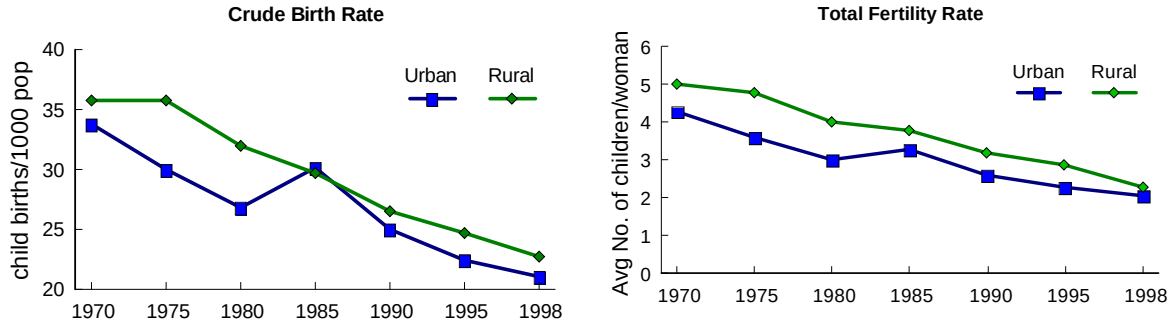
Figure-7 NFHS estimates of TFR for different states. 1992-93 and 1998-99



[1] Source: NFHS-2 (India) p-89, tbl no: 4.3

Figure-8 shows that fertility has been higher in rural areas of AP compared to the urban areas. In both rural and urban areas fertility has declined over the last three decades (1970s,80s and 90s). The sudden jump in rural area crude birth rate estimated for the year 1985 might be a sampling error. The decline in fertility appears to have been more sustained. The variation in fertility estimates for urban area may also be a result of uneven rural-urban migration. Around 1985 the TFR in urban areas went up a little bit and the decline after that appears to have been less than the fertility decline before 1980s. Overall, the rural urban gap appears to have reduced a little bit by the 1990s.

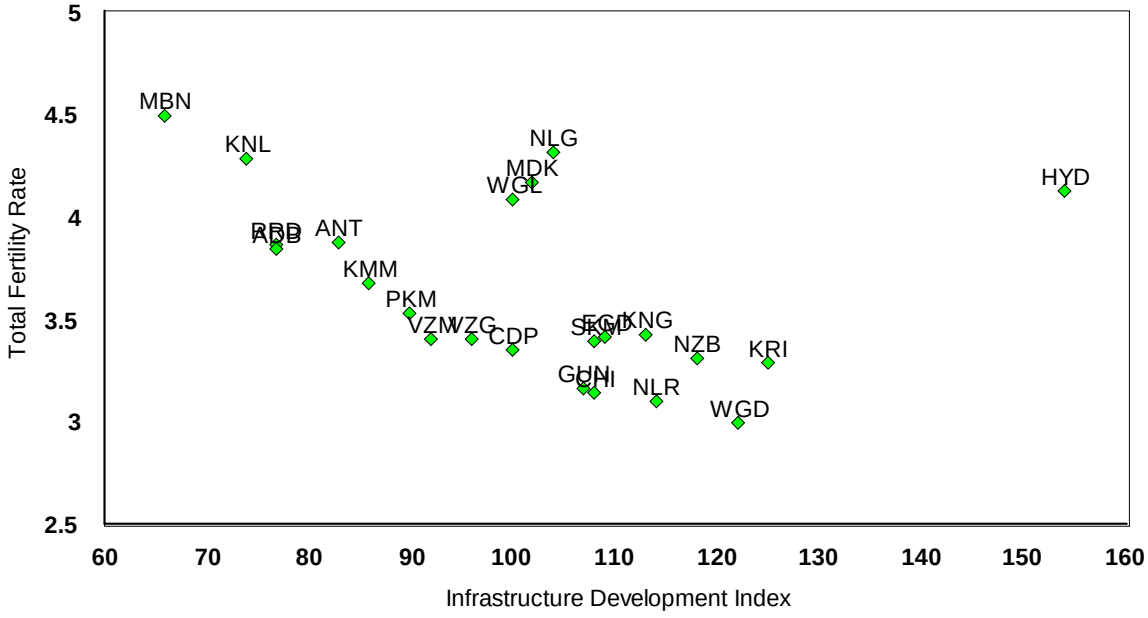
Figure-8 Fertility trend in rural and urban areas of Andhra Pradesh from the year 1970 to 1999



[1] Source: SRS 70-75/79-80/85/90/95/98

The NFHS estimates in Total Fertility rates in rural and urban areas of Andhra Pradesh show a similar (12 to 13%) decline from NFHS-1 to NFHS-2. The Urban TFR has decreased from 2.35 to 2.07 (12% decline from the NFHS-1 level) and the rural TFR has decreased from 2.67 to 2.32 (13% decline from the NFHS-1 level).

Figure-10 Level of Infrastructure Development in AP districts and their Total Fertility Rate.



[1] Source:CMIE, 2000. The computations of Infrastructure Development Index is for 1995.

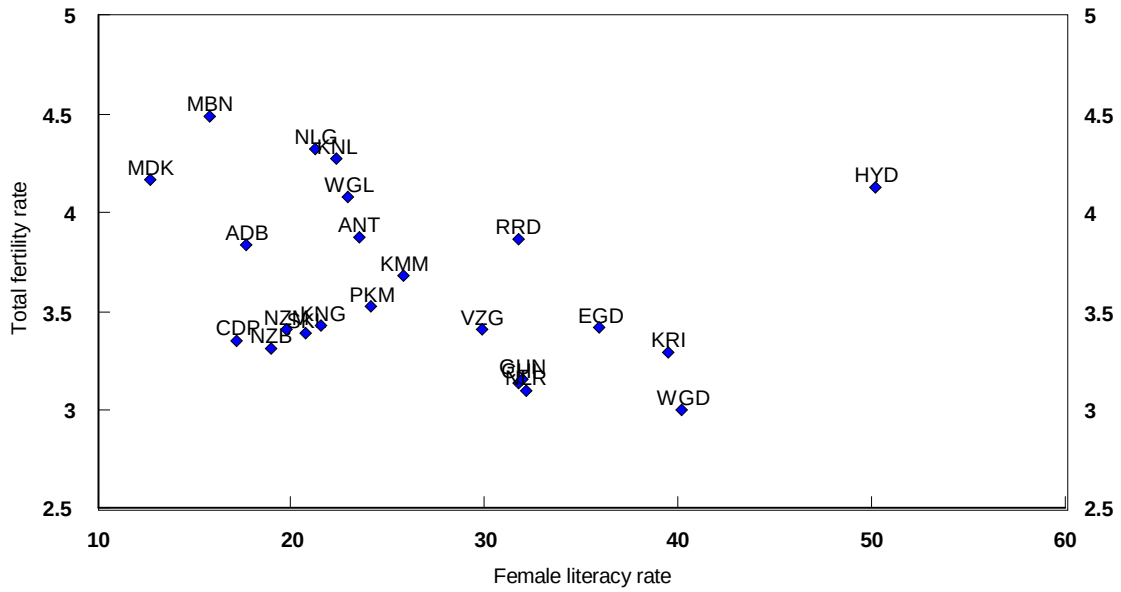
[2] District level estimates of fertility and child mortality for 1991 and their interrelations with other variables. Occasional paper No.1 of 1997 RGI.

Although the state average of fertility has steadily declined, important regional differences exist with in the state. Starting with the 1981 census, fertility estimates are available by district. Figure 10 shows a plot of TFR in

each district against the infrastructure development index computed by the Centre for Monitoring Indian Economy (CMIE). The TFR estimates are from 1991 census and the IDI is for the year 1995. Though the two estimates do not correspond to the same year their time location is close enough considering the fact that changes in TFR as well as IDI generally happens at a very slow rate. Except Hyderabad, which is an outlier, all other districts appear to fall into a pattern. The TFR tends to be lower as the IDI increases. This is consistent with our understanding that fertility tends to decline as socio economic development takes place. Districts like Mahaboobnagar, and Kurnool have lower levels of infrastructure development and high levels of fertility. Districts like Nalgonda, Medak and West Godavari have intermediate levels of infrastructure development but comparatively higher fertility levels. Strangely Hyderabad district has the highest infrastructure development index in the state and has very high levels of fertility. This discrepancy needs further investigation. One conjecture is that higher levels of fertility among the Muslims (Table-4) and presence of sizeable Muslim population in Hyderabad may be working to increase the TFR estimates for Hyderabad. Other possibilities are, (a) immigration of women from rural areas, (b) reporting of births in Hyderabad for families ordinarily residing in surrounding countryside but who might have made short term move to Hyderabad for the child birth, etc.

In figure-11 we have plotted district wise estimates of TFR from 1991 census and female literacy. Here again Hyderabad is an outlier. All other districts fall into a pattern suggesting association between high literacy and low fertility.

Figure-11 Distribution of female literacy rates and Total fertility rates in all the districts of Andhra Pradesh for the year 1991.



[1] Source: District level estimates of fertility and child mortality for 1991 and their interrelations with other variables. Occasional paper No.1 of 1997 RGI.

[2] Female literacy rates are computed from the data on No.of female literates given in Provisional population tables . Census-1991

Table-4 Total fertility rates by selected background characteristics, Andhra Pradesh-1998-99 (NFHS-2)

Characteristic	TFR	Characteristic	TFR
Education		**Caste / tribe**	
Illiterate	2.35	Scheduled caste	2.51
Less than middle school	2.22	Scheduled tribe	2.75
High school complete	1.94	Backward class	2.26
		others	2
Religion		**Standard of living index**	
Hindu	2.2	Low	2.29
Muslim	2.53	Medium	2.32
Christian	2.53	High	1.99

[1] Source: NFHS-2 (AP) p-60, tbl no: 4.3

NFHS-2 provides us with individual household level data relating fertility with various socio economic characteristics such as education, standard of living index etc. Table-4 shows that the TFR is 0.41 children higher among illiterate women than among women who have completed middle school. The TFR also varies by religion, being 0.33 children higher among Muslims and Christians than among Hindus. The TFR is 0.75 children higher among ST women and 0.51 children higher among SC women than among women in the other category. The TFR is 0.3 children higher among women living in

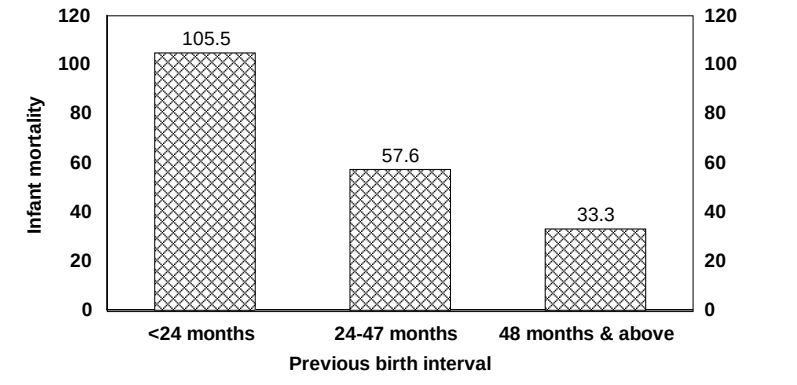
households with a low or medium standard of living than among women living in households with a high standard of living. Note, however, that the NFHS sampling design was not primarily geared up to generate statistical estimates by religion and various other socio economic characteristics. Hence, some of the estimates may not be precise, if number of persons in the sample are less.

C. Birth Intervals:

The birth interval, defined as the length of time between two successive live births, indicates the pace of childbearing. It is an important indicator of fertility. Short birth intervals may adversely affect a mother's health and her children's survival. Babies born less than two yrs after the previous child are at least twice as likely to die in the first year of life as those born after an interval of at least two years. Even if these infants survive the first year, they are 1.5 times more likely to die before age 5 than children whose births were spaced at least 2 years apart (Bohler 1994, Alam 1995, Shane 1997), (Pandey et al.,1998; Govindaswamy et al., 1993). Data from the World Fertility Survey provide a strong evidence about increased mortality risks of children with short birth intervals (Hobcraft et.al, 1985).

Adverse effect of less than optimum birth spacing is also evident in Andhra Pradesh (Figure-12). The infant mortality rate is more than three times as high for children with a previous birth interval of less than 24 months as for children with a previous interval of 48 months or more (NFHS-2). Figure-12 shows the infant mortality rates according to previous birth interval.

Figure-12 Infant mortality by previous birth interval in Andhra Pradesh



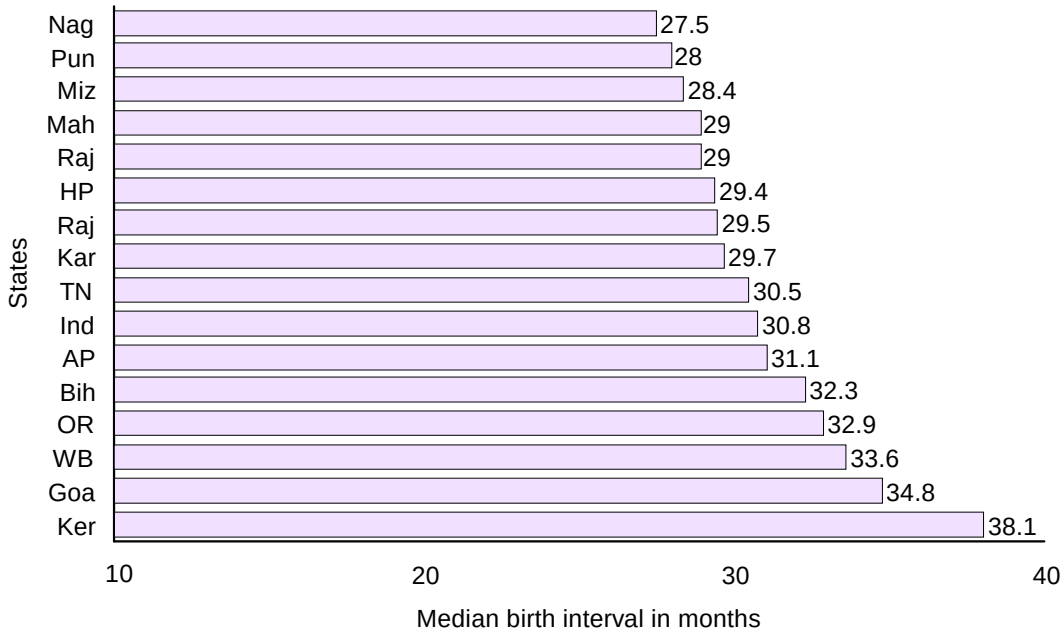
[1] Source: NFHS-2 (Andhra Pradesh) p-121, tbl-6.4

Closely spaced pregnancies increase the chances of women having low birth weight babies, and increase risk of transmission of infectious diseases (National Research Council 1989).

Rowe and Plomin (1981) argue that within-family influences like birth order and spacing of children, influences on intelligence and make siblings different from one another. Zajonc and Markus (1979) also proposed that children's scores on IQ should be higher in families with wider spacing among siblings. But several studies by different psychologists show that birth order and spacing, show relationships with IQ, but they are not very powerful (Berk, 1989).

According to estimates from the NFHS-2, in 1998-99, the median birth interval in India range for about 27 months in Nagaland to about 38 months in Kerala. The median birth interval in AP was 31 months (Figure-13). In Andhra Pradesh, 13% of births occur within 18 months of a previous birth and 27% occur within 24 months. About 38% of births occur after an interval of 3 years or more (Table-5). Birth intervals are four months shorter among urban women than among rural women.(NFHS-2).

Figure-13 Birth intervals by state 1998-99



[1] Source: NFHS-2 India p-103, tbl no: 4.12

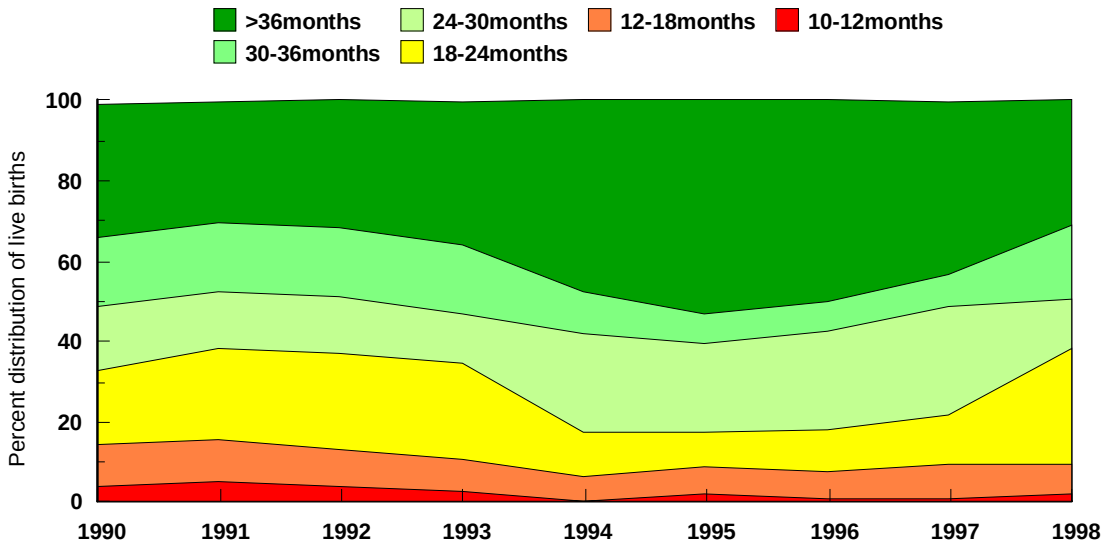
Table -5 Distribution of births according to months since previous birth in AP

Months since previous birth	Urban	Rural	Combined	Urban	Rural	Combined
		1993			1999	
<12	3.2	1.3	1.8	4.4	1.8	2.4
12-17	9.7	7.4	8	14.3	8.7	10.1
18-23	15.7	12	12.9	15.6	14.6	14.8
24-35	28.9	35.3	33.7	35.2	34.9	35
36-47	19.9	21.6	21.2	15.9	20.2	19.1
48>	22.6	22.4	22.5	14.6	19.7	18.5

[1] Source: NFHS 1&2 (Andhra Pradesh) NFHS-1 p-69, tbl no: 5.9 NFHS-2 p-68, tbl No:4.8

SRS also provides information on birth intervals. The data from SRS on birth intervals is available from the year 1990 onwards (Figure-14). Current live births with a birth interval of 10-12 months were about 3.15% of total births in the early 1990s. This proportion reduced to about 0.9% towards second half of 1990s (1994-98). Percentage of live births with a birth interval 12-18 months stayed almost constant and 10%. Proportion of live births after a birth interval of 24-30 months increased towards the second half of 1990s. For about 15% in early 1990s to about 25% in the late 1990s. During the late 1990s the proportion of live births after 36 months increased , while those after 18-24 months decreased. Thus the birth intervals in AP appear to be improving. Proportion of live births before the critical 2 year birth interval has reduced from 22% from 1990-93 to about 14% between 1994-98.

Figure-14 Percentage distribution of current live births by birth intervals in Andhra Pradesh from the years 1990 to 98



[1] Source: SRS 90 to 98.

Table-7 Median months since previous birth according to background characteristics in Andhra Pradesh. 1998-99

Background characteristics	Median months since previous birth	Background characteristics	Median months since previous birth
Sex of previous birth		**Survival of previous birth**	
Male	31.7	Living	31.7
Female	30.4	Dead	24.7
Education of the mother		**Standard of living index**	
Illiterate	33	Low	31.9
< middle school	28.2	Medium	31.7
Middle school complete	31.5	High	25.9
High school and above	26.7		

[1] Source: NFHS-2 (AP) p-68, tbl no: 4.8

Various factors may for example, NFHS-2 found that the median birth interval is slightly shorter if the previous child was a girl than it was a boy (Table-6). Birth intervals are much shorter if the previous child died (25 months) than if the previous child survived (32 months). There is also a tendency for birth intervals to decrease with education. Mothers with at least a high school education have a median birth interval that is six months shorter than the interval for illiterate mothers. Similarly, mothers living in households with a high standard of living have a median birth interval that is six months shorter than the interval for mothers who live in households with a low standard of living. Thus socioeconomic development and spread of education may contribute to reduction in fertility and tend to reduce birth intervals. However, these same factors may improve access to contraceptives, with its resultant effect on birth spacing. Probably the median birth interval may not change much. From reproductive health point of view, the median birth interval of more than 24 months would be acceptable provided the distribution is such that births less than 24 months after the previous birth are brought down to near zero levels. Hence it will be desirable to look at the distribution of birth intervals.

D. Maternal Mortality:

Maternal Mortality ratio (MMR) reflects the risk to mothers during pregnancy and childbirth. It is influenced by general socioeconomic conditions, nutrition and sanitation, as well as by maternal health care. It is

expressed by the number of deaths attributed to complications of pregnancy and childbirth occurring over a year, divided by the total number of live-births in the year. It is often expressed as the number of maternal deaths per 1000 live-births or per 100000 live births. Deaths due to abortion are sometimes excluded. Developed countries achieved MMR as low as 10 per 100000.

It is estimated that nearly 75 percent of maternal deaths are due to five causes namely hemorrhage, sepsis or infection toxemia, obstructed labor and complication of unsafe abortions. The remaining 25 percent of deaths are due to indirect causes such as communicable diseases. Cultural restrictions on mobility of women limit her access to health care. This is further complicated by the fact many programmers do not have sufficient number of well qualified female health care providers (Padma, 2000).

Computation of MMR requires data on the number of deaths of women of reproductive age (15-49 years) and information on the cause of death as well as whether the woman was pregnant at the time of death, or had recently been so (Brundtland, 2000). In the absence of complete and reliable vital registration and cause-of-death data, the measurement of maternal mortality ratios is difficult. Because the event is relatively rare. Very large sample sizes are required to capture sufficient numbers of maternal deaths to give a reasonably accurate estimate of the maternal mortality ratio. These difficulties with estimation call for caution in the interpretation of data on maternal mortality ratios - either the ratio is based on incomplete information, or is at best a rough estimate. (Brundtland, 2000).

Precise estimates of maternal mortality rate (MMR) in Andhra Pradesh is not available. The NFHS did collect data to estimate maternal mortality rates. Both NFHS- 1&2 give MMR estimates at the national level. All India estimates of MMR ranges from 400 to 500 deaths per 100000 live births (IIPS, 2000). Mahapatra (2000) studied causes of death patterns in Andhra Pradesh (table-8). We have computed MMR using estimates of maternal deaths in AP during the 1990s by Mahapatra (2000), and an estimate of live births in AP on 1991 census population and SRS estimates of CBR. This would imply that MMR in AP may be around 260 per 100000 live births.

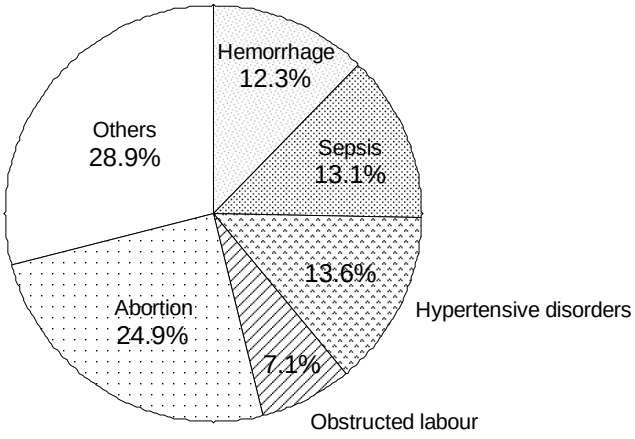
Table:8 Major causes of death among women in reproductive age group of 15-44 years, for the year 1991 in AP.

Cause of death	Number of female deaths		
	Rural	Urban	Total
All causes	44109	8049	52158
Maternal Causes			
Maternal Hemorrhage	462	82	544
Maternal sepsis	462	118	580
Hypertensive disorders of pregnancy	599	4	603
Obstructed labour	308	7	315
Abortion	1044	56	1100
Other maternal conditions	890	389	1279
Other major causes			
Self-inflicted injury (suicides)	8544	94	8638
Fire accidents	1763	1645	3408
Violence	1215	349	1564
Estimated maternal deaths	3765	656	4421
Estimated births in 1991	1288453	436446	1729208
Maternal Mortality Ratio	**292**/ 100000 live births	**150**/ 100000 live births	**256**/ 100000 live births

[1] Source: Mahapatra, Estimating National Burden of Disease, 2000, Appendix: 3-7.1 and 3-8.1.

A more interesting aspect of the cause of death estimates shown in table-8 is the large number of deaths of young and adult women due to non maternal causes. About 4400 woman die of maternal causes. But 8500 women commit suicide every year. This is about twice the number of maternal deaths. Another 3000 women die on account of fire accident or violence. These deaths have intricate relationship with status of women, socioeconomic vulnerability and poor power equation of women.

Figure:15 Maternal causes of deaths among women in reproductive age group of 15-44 years, for the year 1991 in AP.



[1] Source: Mahapatra, Estimating National Burden of Disease, 2000, Appendix: 3-7.1 and 3-8.1.

A recent study (Mahapatra, Rao and Kumar, 2000) gives indirect estimates of MMR using the sisterhood method. Indirect estimates of MMR from this District Family Health Survey (DFHS) is shown in Table-10. According to this study MMR around the late 1980s was about 258/100000 live births. The MMR increased to about 321/100000 live births around the early 1990s.

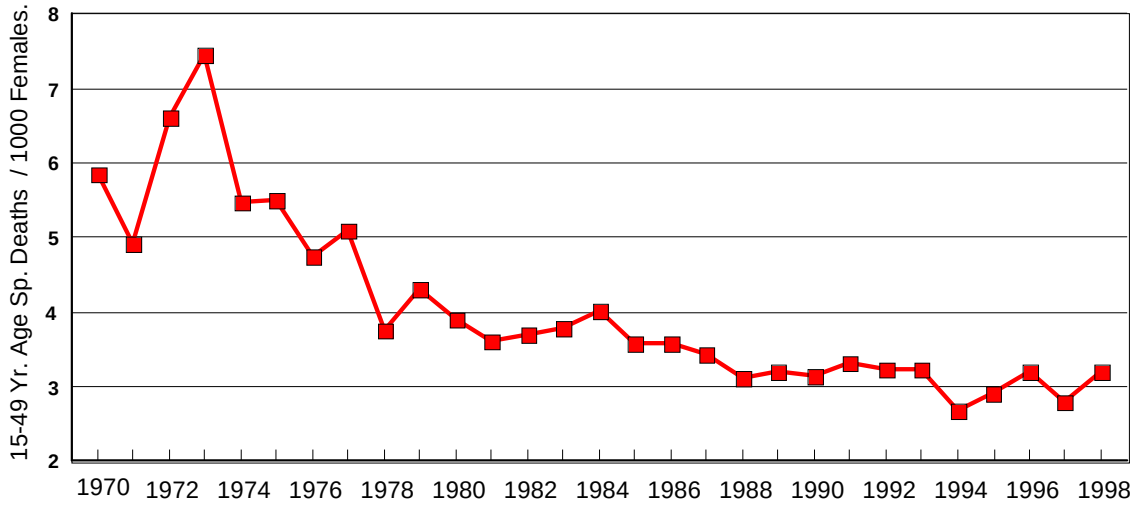
Table-9 Indirect estimates of maternal mortality in three districts of AP.

Time location of estimates	District - MMR per 100000 live births			
	Nellore	Chittoor	Mahboobnagar	Pooled
12 years ago i.e. around 1988	264	211	202	258
6 year 10 months ago, i.e. around 1993-94	248	651	169	321
5 year 8 months ago, i.e. around 1994-95	790	234	1,775	997

[1] Source:Mahapatra, Rao, Kumar, District Family Health Survey, IHS RP 08/2001.

So far the estimates from this study are consistent with the estimate derived from cause of death pattern estimated by Mahapatra (2000). These estimates are also consistent with national level estimates from NFHS. The puzzling part of MMR estimate from the DFHS study, shown in table-9 is the very high level of MMR, (about 997 maternal deaths/100000 live births) estimated for more recent periods i.e late 1990s. More over, according to these estimates MMR appear to be increasing. Maternal mortality is a major cause of death for woman in reproductive age group. In figure-16 we have plotted the time trend of the female death rate in 15-44 years age group for the years 1970-98. These estimates are from SRS. We can see that there has been a gradual and sustained decrease in this age sex specific death rates from 1973 to 98. The maternal deaths could be included in this envelop of all cause mortality of 15-49 years females. The SRS provides direct estimates of age specific death rates. Hence we attach more importance to the SRS estimates. Since the all cause mortality has shown sustained decline, large scale increase in maternal mortality values not appear plausible.

Figure-16 Female death rate in 15-49 years age group for the years 1970-98



[1] Source: Computed from SRS estimates of female age-specific death rates of 15-19 years age group to 45-49 years age group and SRS estimates of female population for the years 1970-98.

The Commissioner Family Welfare collects information about maternal deaths in the state through the ANMs posted at subcentres. Each ANM is expected to report maternal deaths in her subcentre area. These are consolidated at the state level. As per these reports the no.of maternal deaths

in the year 2000-2001 and 2001-2002 is 710 and 527 respectively. The MMR for 2000-2001 year is 56/100000 live births and 60/100000 live births for the year 2001-2002. Obviously, this is a gross under estimate of the time situation in the state.

E. Reproductive Morbidity:

Reproductive morbidity refers to diseases of the reproductive system, that may or may not necessarily be a consequence of reproduction. Reproductive morbidity has three sub-categories namely (a) Gynecologic morbidity, (b) Obstetric (or maternal) morbidity, and (c) Contraceptive morbidity (Fortney, 1995). Anaemia is a general physical problem. But in case of women anaemia has a very close linkage to reproductive health. Hence we first discuss about anaemia in women followed by the three specific varieties of reproductive morbidity mentioned above.

Anaemia among women in AP

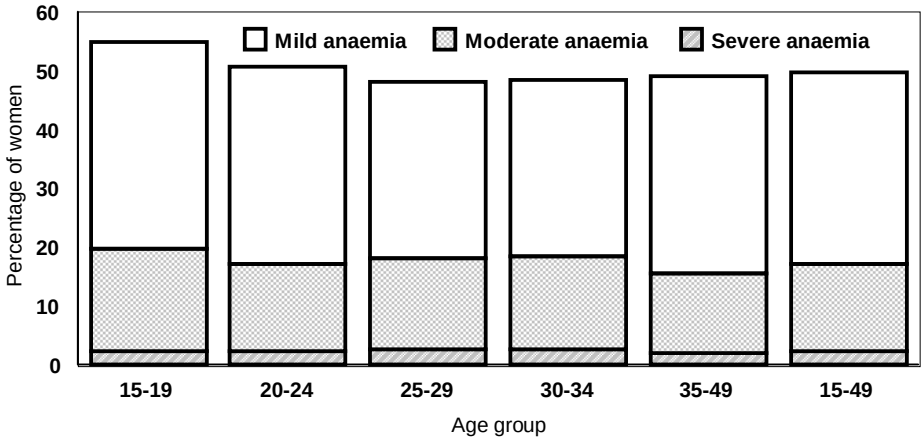
Anaemia is characterised by low level of hemoglobin in the blood. Anaemia usually results from nutritional deficiency of iron, folate, vitamin B12, or some other nutrients. Anaemia may have derimental effects on the health of women and children, may become an underlying cause of maternal mortality, and results in an increased risk of premature delivery and low birth weight (Sheshadri,1997). Early detection of anaemia can help to prevent complications related to pregnancy and delivery, as well as child development problems. Anaemia before mid-pregnancy is associated with an increased risk of pre-term delivery. Maternal anemia during the later stages of pregnancy, especially the third trimester, often reflects the expected expansion of maternal plasma volume (Scholl and Reilly, 2000).

Estimates of anaemia prevalence among women in Andhra pradesh is available from the NFHS-2. NFHS-2 might have reported in a slight under estimation of anaemia prevalence.[2] Figure-17 shows prevalence of severe,

[2] The HemoCue system method used by the NFHS-2 might have slightly lower estimated prevalence of anaemia. The HemoCue has been found to give accurate results on venous blood samples, comparable to estimates from more sophisticated laboratory instruments (Von Schenk et.al., 1986). A recent small-scale study in India (Prakash et.al., 1999) however found that the HemoCue provided slightly higher estimates of haemoglobin than the standard blood cell counter (BCC) method. Because the first 2-3 drops of blood are wiped away to be sure that the sample used for analysis consists of fresh capillary blood, it is actually the third or fourth drop of blood that is drawn into the cuvette (NFHS-2, 2000). Hemocue method tends to overestimate the levels of Hb and as a result the prevalence rates of anaemia would be lower (Mohanaram, et.al., 2002).

moderate and mild anaemia among reproductive age women in AP, based on the NFHS-2 estimates. We can see that more than half (55%) of the women in reproductive age group of 15-19 years suffer from some kind of anaemia. About 17% of reproductive women have moderate to severe anaemia.

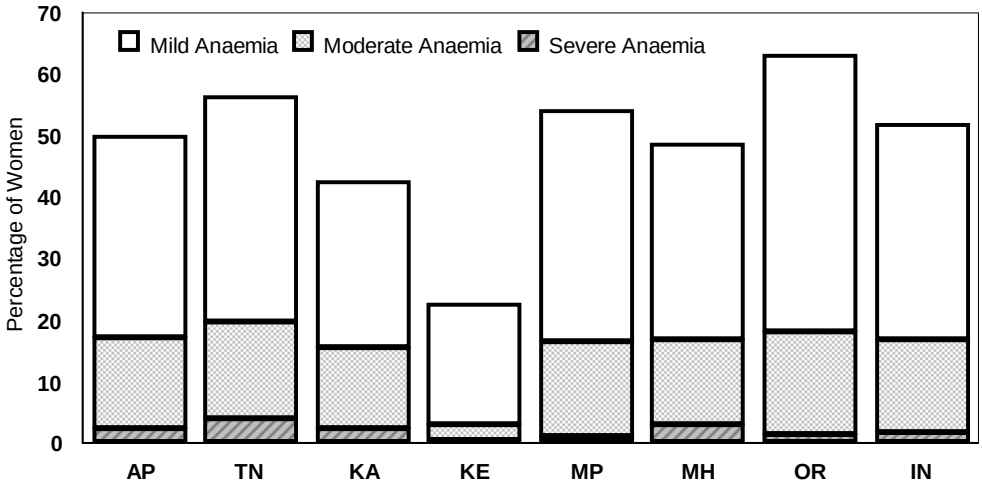
Figure-17 Prevalence of anaemia among women in AP 1998-99



[1] Source: NFHS-2(AP). p- 154, tbl No: 7.4

Figure-18 shows the prevalence of anaemia among women in different states. Kerala has the lowest prevalence of anemia (22.7). Andhra Pradesh is one of the states showing high prevalence of anemia among women of reproductive age group.

Figure-18 Anaemia prevalence among reproductive age group women in AP and different states, 1998-99.



[1] Source: NFHS (2) India p-252, tbl No: 7.7

Gynecological morbidity

Gynecological morbidity includes any condition, disease or dysfunction of the reproductive system which is not related to pregnancy, abortion or childbirth, but which may be related to sexual behaviour (Fortney, 1995). Systematic estimate of gynecological morbidity are not easily available. Our knowledge of gynecological morbidity is based on few studies in parts of the state and some studies in India. We first discuss the reproductive health of adolescent girls since they constitute a special subgroup among women in reproductive age. We then look at available information about gynecological problems reported by all women in reproductive age.

Reddy, Rani and others (2000) surveyed 274 adolescent school going girls in Tirupati town of Andhra Pradesh to study awareness and perception about menarche, and menstrual problems. 200 of the 232 post menarcheal girls reported 232 problems experienced before menstruation. Dysmenorrhoea (backache) was felt by 50% of the adolescents prior to as well as during menstruation. Bad odour of menstrual blood was the prominent problem reported by 57% of the adolescent girls. Profuse menstrual bleeding was complained by 31% of the adolescent girls. Calf muscle pain was the number one complaint felt prior to as well as during menstruation by more than a quarter of the adolescent girls. Tiredness was the number two problem experienced prior to the menstruation by 20.5% of the adolescent girls and this complaint had declined to 6% during menstruation. Irritability was third in rank reported by 20.5% adolescent girls before and 21.3% girls during menstruation.

Joseph, Bhattacharji (1997) studied adolescent girls problems in rural area of Tamil Nadu. Both qualitative and quantitative methods were used to elicit information. Three Focus group discussions revealed that menstrual irregularities were most prominent while a few complained of white discharge. Quantitative study of 190 adolescents showed that sleep disturbances, loss of weight, frequent headaches and dermatological problems were more common among those who attained menarche. While dysmenorrhoea and premenstrual

tensions were very common, other menstrual problems also seemed frequent. Nearly one-fifth of all adolescents complained of white discharge.

Bhatia, Cleland and others (1997) studied gynecological morbidities among 385 women with young children residing in a district of Karnataka state. Gynecological morbidity was assessed from self reports, clinical examination and laboratory tests; Reproductive tract infections, emerged as the most common problem. The two common conditions, identified by laboratory test, were mucopurulent cervicitis (36.6%) and bacterial vaginosis (18.2%). Gynecological examinations revealed that 24% and 13% of the women had clinical signs of cervicitis and vaginitis respectively. Detailed menstrual history of the women taken by the gynecologist showed that more than half of the women reported painful menstruation (dysmenorrhoea). The contribution of sexually transmitted diseases to overall gynecological morbidity appears to be relatively modest; 10% were diagnosed.

Bang and others (Bang et al, 1989) in Gadchiroli district of Maharashtra examined gynecologic morbidity. Of 650 women who were studied, 55% had gynecological complaints and 45% were symptom free. 92% of all women were found to have one or more gynecological or sexual diseases, and the average number of these diseases per woman was 3.6. Table-10 shows the common gynecological and sexual complaints made by the women in Gadchiroli. Amenorrhoea, Dysmenorrhoea, Vaginal discharge and scanty periods were found to be very common.

Table:10 Common gynecological and sexual complaints encountered by Bang and others in Gadchiroli.

Complaint	Frequency (N=650)	Percentage
Amenorrhoea	132	20.3
Dysmenorrhoea	98	15.5
Vaginal discharge	88	13.5
Scanty periods	82	12.6
Others	279	38.1

[1] Source: Bang, et al. Community Health-High prevalence of gynecological diseases in rural Indian women. 1989.

Detailed history taking, physical examination and investigation (Table-11) by the authors showed that Vaginitis, Cervicitis, Dysmenorrhoea,

Cervical erosion, Candida vaginitis, Pelvic Inflammatory disease and Oligomenorrhoea were very common.

Table:11 Common Gynecological and sexual diseases found among women in Gadchiroli. 1989.

Diagnosis	Frequency (N=650)	Percentage
Bacterial Vaginitis	347	62.19#
Cervicitis	272	48.74#
Dysmenorrhoea	269	57.48*
Cervical erosion	255	45.7#
Candida vaginitis	190	34.05#
Pelvic Inflammatory disease	157	24.15
Oligomenorrhoea/hypomenorrhoea	105	22.44*

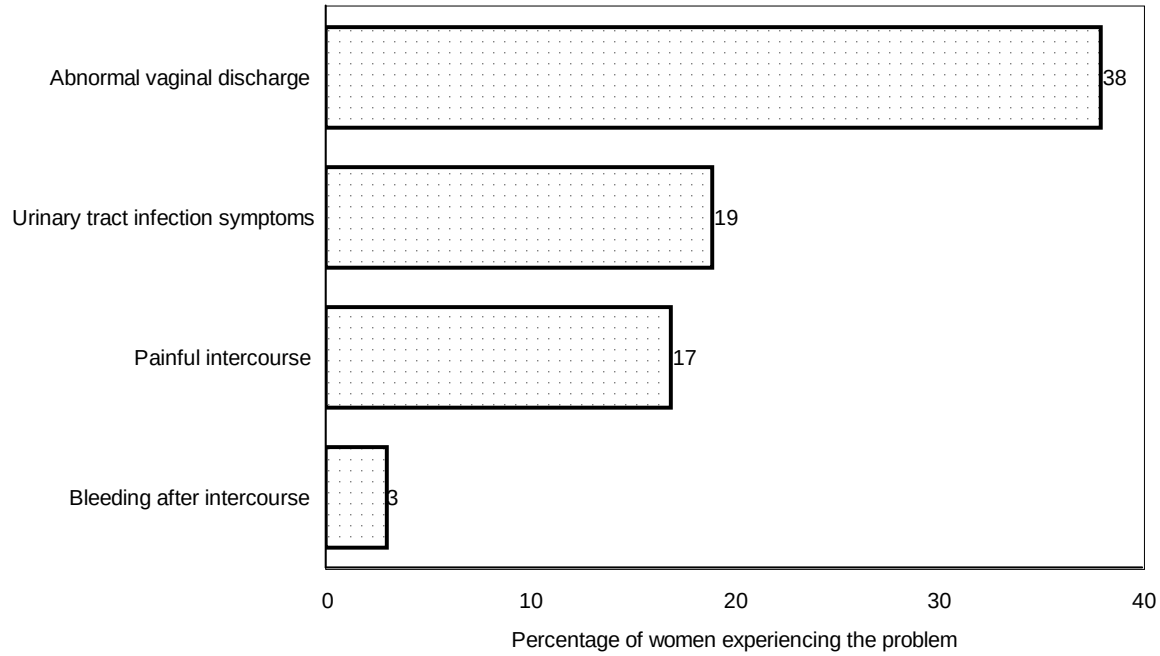
[1] Source: Bang, et al. Community Health-High prevalence of gynecological diseases in rural Indian women. 1989. * N is 468. # N is 558

Parikh, Taskar et.al., (1989) studied levels, patterns and correlates of gynecological morbidity in an urban slum of Bombay, focusing on both women's perceptions and assessment of their gynecological health as well as the conclusions of medical assessments and laboratory tests. The sample comprised of 756 ever married women residing in a slum. Chlamydia was detected by laboratory test in 14% of 399 women, Trichomoniasis was observed among 10% of all women but STDs such as gonorrhoea (1.5%) and syphilis (0.3%) were rare. As many as 31% women reported one or more endogenous infections: Candidiasis was observed in 17% and bacterial vaginosis is observed in 15% of the women.

Patel and Khan (1996) surveyed 1790 women in a community in rural Uttar Pradesh to find out the levels of self-reported gynecological morbidities. Of those women reporting menstrual problems 33% had excessive bleeding, 20% had continuous bleeding for 10 days or more and 27% had occasional bleeding. It is also found that 31% of the women reported urinary problems.

The NFHS-2 collected information from women on some common symptoms of RTIs. 38% of ever-married women report at least one type of problem related to vaginal discharge, and 19% report symptoms of a urinary tract infection. Overall, 43% of women report either problems with vaginal discharge or symptoms of a urinary tract infection.

Figure-19 Reproductive health problems among currently married women in AP age 15-49 yrs 1998-1999.



[1] Source: NFHS (2) AP p-193, fig-8.5

Thus review of available literature from various studies suggest that a health worker would come across the following gynecological morbidities quite frequently.

a. Abnormal vaginal discharge, caused mostly by bacterial vaginitis, cervicitis, or to some extent trichomoniosis.
b. Oligomenorrhoea (scanty periods), amenorrhoea, probably due to anaemia, under nutrition, tuberculosis or other pathology.
c. Urinary tract infections
d. Pelvic inflammatory diseases and sexually transmitted diseases.
e. Adolescent menstrual difficulties like back ache (Dysmenorrhoea), calf pain, irritability, etc.,.

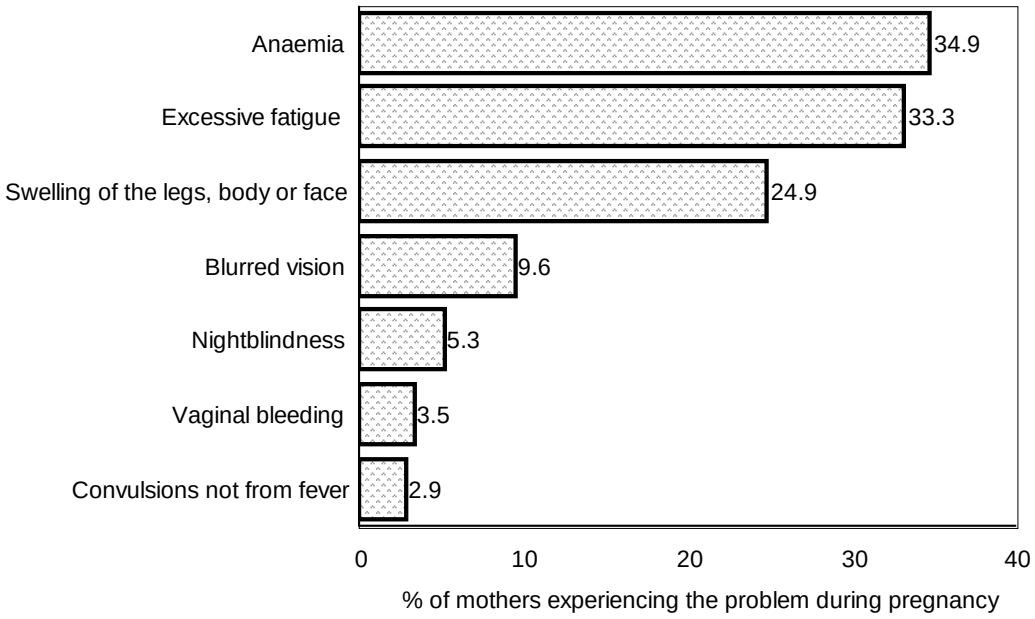
Maternal Morbidity:

Maternal or obstetric morbidity refers to morbidity from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (WHO, 2000). Maternal morbidities can be broadly classified as (a) Direct obstetric morbidity resulting from obstetric complications of the pregnancy, labour and the puerperium; (b) Indirect obstetric morbidity resulting from diseases such as anaemia, malaria,

hepatitis and tuberculosis, aggravated by the physiological effects of pregnancy; and (c) Psychological obstetric morbidity, which includes post-partum psychoses or depression and other mental health problems related to pregnancy and childbirth (Brundtland, 2000).

According to NFHS-2 estimates, problems most commonly reported in Andhra Pradesh are anaemia (35%) and excessive fatigue (33%) followed by swelling of the legs, body or face (25%). Both anaemia and fatigue can be attributed to poor nutritional status.

Figure-20 Reproductive Health problems during pregnancy in AP.



[1] Source : NFHS-2(AP). p-173, tbl-8.1

[2] Percentage of mothers experiencing specific health problems during pregnancy.

NFHS-2 also provides information on postpartum complications of women (Table-10). According to this mothers reported massive vaginal bleeding for 18% of births and very high fever in the postpartum period for 14% of births. Both complications were more common among rural than urban mothers and among younger than older mothers. 20% of births to mothers who were age 19 or younger at the time of birth were followed by massive vaginal bleeding, and 16% were followed by very high fever, compared with 16 and 13%, respectively for births to mothers age 20-34.

Table-10 Symptoms of postpartum complications

Background characteristic	Massive vaginal bleeding	Very high fever
Residence		
Urban	14.5	10.8
Rural	19	14.9
Mother's age at birth		
<20 years	19.8	15.9
20-34 years	16.4	12.6
Total	17.9	13.9

[1] Source: NFHS-2 (AP) P-192, tbl no: 8.11

A 1046 household survey in Nizamabad district by the Indian Institute of Health and Family Welfare (Sekhar, 1998) found that pregnant women commonly experience fatigue (weakness), Visual disturbances and Anaemia (paleness). This is consistent with the findings from NFHS-2.

Bhatia and Cleland (1996) asked about obstetric and gynecologic health in a subdistrict of Karnataka. A sample of 3,600 mothers with at least one preschool age child were interviewed in detail about obstetric problems associated with their last confinement. About 10% reported one or more of the symptoms of pre-eclampsia. And 8% reported symptoms of potentially life-threatening conditions during delivery, most notably prolonged labour of over 18 hours. Disorders during the post-partum period were more common. 10% reported excessive bleeding, loss of consciousness or convulsions and 17% reported symptoms of infections.

Abortions

Abortion is the termination of pregnancy before 28th week and before the fetus is viable. In terms of weight the aborted fetus is less than 1000 gm. Premature infants are those born after 28th week of pregnancy and before term. Abortions are divided into (a) spontaneous and (b) induced abortions Spontaneous abortion is called miscarriage. Induced abortion is usually medical termination of pregnancy. The incidence of Spontaneous abortion is 10% to 15% of all pregnancies (Raju, 1983).

Spontaneous abortion early in pregnancy are almost preceded by the death of the embryo, unlike those later in pregnancy. In first trimester

abortions, fetal death may be associated with abnormalities of the ovum itself, immunological factors, abnormalities in the reproductive tract or systemic disease in a woman. Whereas first trimester spontaneous abortions are often associated with chromosomal abnormalities, second trimester abortions are usually associated with factors such as cervical incompetence, abnormalities of the uterine body, and infections such as listeria monocytogenes. Other factors that can result in spontaneous abortion include maternal disease, particularly those associated with high fever, but also conditions such as diabetes, thyroid disease, renal disease, and hypertensive disorders. Yet other causes of spontaneous abortion include environmental factors such as radiation, drugs and severe stress (WHO, 1998).

Spontaneous abortion may be classified by clinical presentation. (a) Missed abortion is defined as intrauterine fetal demise prior to 20 weeks' gestation or 500 gms fetal weight without clinical symptoms. (b) Inevitable abortion is the occurrence of vaginal bleeding and cervical dilation prior to embryonic or fetal demise. (c) Incomplete abortion occurs when only a portion of the products of conception are spontaneously expelled (Rinehart, 1999).

Elective or therapeutic abortion is the intentional termination of pregnancy prior to fetal viability. Induced abortion may be carried out by a number of medical or surgical means (Rinehart, 1999). Unsafe abortion is defined by WHO as a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both (WHO, 1992). Complications of unsafe abortion account for a substantial proportion of all maternal deaths around the world. In developing countries with high levels of maternal mortality, the risk of death following complications of unsafe abortion may be 100 to 500 times higher than medical termination of pregnancy.

Complications of abortion can be divided into immediate or delayed. The immediate complications include hemorrhage, uterine perforation, cervical laceration, hematometra and vascovagal reaction. Late complications of pregnancy termination include retained products of conception, infection and continuation of pregnancy (Rinehart, 1999).

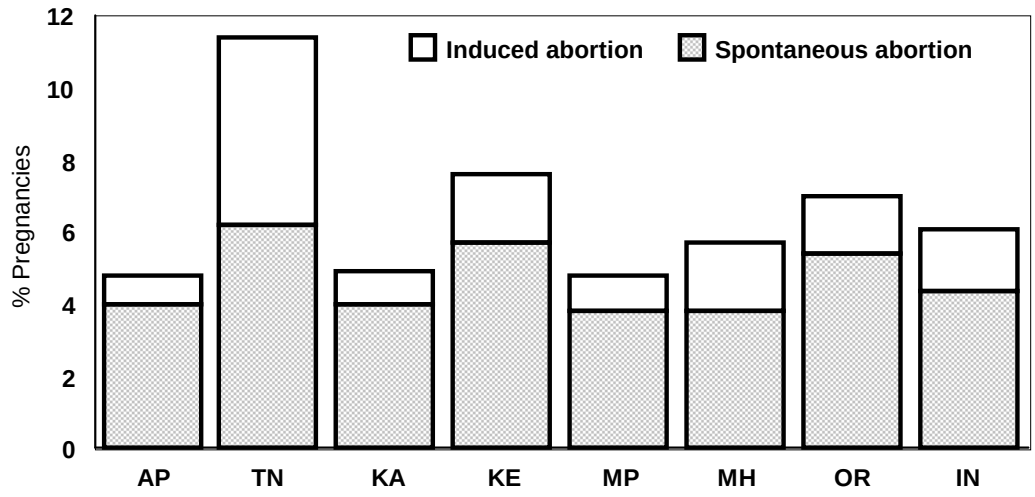
A population based study was conducted in 6 villages of north India with an aim to estimate the extent and determinants of spontaneous abortion and induced abortion. Monthly follow-up of 1269 women aged 18-30 years was done. All registered pregnancies (641) were followed till abortion/delivery. Abortion rate, pregnancy wastage rate and fetal death ratio were 10.6%, 16% and 12.6% respectively. More women with spontaneous abortion were aged less than 20 years (27%) as compared to 5% in women who had induced abortion. Spontaneous abortion was reported more in women of lower social class. Government hospitals were preferred as the place for induced abortion by 45% of the women. Female foeticide was reported by 13% women. Ignorance about contraceptives of their availability was reported by 8 women (Singh and Arora, 1996).

Induced abortions are largely due to unwanted fertility. While abortions associated with wanted fertility are spontaneous in nature, the abortions resulting from unwanted fertility could either be spontaneous or induced. Induced abortion services are availed by women from various sources - some are safe conducted by skilled professionals and others are done under unsafe conditions leading to high levels of morbidity and mortality (Padma, 2000).

The NFHS collected information on abortion by asking two questions to ever married women. The questions were: "Have you ever had an abortion?" And, if "yes", "How many times have you had induced abortions and spontaneous abortions?". Figure-21 shows the outcome of pregnancies in different states of India. In India, 92% of pregnancies resulted in a live birth, 4% in a spontaneous abortion, 2% in an induced abortion and 2% in a still birth. Incidence of Spontaneous abortion in various states fall within a mean range of 4 to 6% of pregnancies. But there is wide variation in the incidence of induced abortion. Induced abortions are highest in Tamil Nadu, high in Kerala, Maharashtra and some about high in Orissa. Incidence of induced abortion in AP, or Karnataka is lower. The need for induced abortion in AP and Karnataka may be less because of low incidence of contraceptive failure. On the other hand non availability or poor access to MTP services may keep the induced abortion incidence low, despite higher need for MTP. Poor access

to MTP services appears to be more plausible, since there is no particular reason why the need for MTP would be lower in Andhra Pradesh and Karnataka compared to Tamil Nadu. A recent survey in Nizamabad district (Sekhar, 2000) found that about 11% of 15-19 years old girls have experienced spontaneous abortion.

Figure-21 Spontaneous and Induced abortion as outcome of pregnancies in AP and other states, 1998-99



[1] Source: NFHS (2) India 1998-99. P-95, tbl no: 4.7

Contraceptive morbidity:

Contraceptive morbidity refers to morbidity caused by use of specific contraceptives. Obviously, contraceptive morbidity does not include the protective effects that contraceptives have against a variety of adverse conditions, but the concept of "contraceptive health" does include the absence of these diseases, which include ovarian and endometrial cancer, anemia, and STDs. Contraceptive morbidities are of 2 broad types:

1. Local effects of contraceptives include irritation from or allergic reactions to barrier contraceptives, IUD-associated bleeding, or infection at wound sites (implants, tubal sterilisation).
2. Systematic effects include impact on the cardiovascular and hormonal systems and carcinogenicity (Fortney, 1995).

Ram and Rangaiyan (1997) studied the prevailing contraceptive morbidity pattern among the contraceptive users by method for all India and some selected states. They analysed the NFHS-1 data and reviewed other available data for India and different states (Karnataka, Madhya Pradesh,

Maharashtra, Tamil Nadu and Uttar Pradesh). The study indicate that a significant proportion of women suffering from illness relate their problems to contraceptive use. A comparatively higher proportion of sterilised women had reportedly suffered illness related to contraceptive use.

NFHS-2 provides information on the women who are using modern contraceptive methods and reported problem with their method. 64% of sterilised women and 81% of women whose husbands sterilised report having no problems with their method. The most common problems experienced by sterilised women are headache, body ache or backache (23%), abdominal pain (15%), weakness or tiredness (14%), white discharge (12%) and fever (5%). The results point to a continuing need to strengthen postoperative care and counseling for sterilisation acceptors.

Summary and Conclusions:

Reproductive health refers to mortality, morbidity and quality of life attributable to the reproductive system. Reproductive disease burden among women comprises mainly of (a) maternal mortality, (b) obstetric morbidity and (c) gynecological morbidity.

Marriage is an important marker of the beginning of reproductive phase of life in India. Although the mean age at marriage has been gradually increasing over the last five decades, the trend is too slow in AP. As of, the 1990s about 41% of young girls in AP married below the legal age at marriage, of 18 years. The national average is 19% i.e, less than half of the estimate for AP.

Total fertility signifying the number of children born, on average, by a woman indicates the overall reproductive load on women. Total fertility rate (TFR) of Andhra Pradesh and other states from SRS show a constant decline from 1970s to 1998. The TFR of AP was 4.5 in 1971-73 and it has decreased to 2.4 in 1998. All India TFR was 5 in 1971-73 and declined to 3.2 in 1998.

Thus AP has shown much greater fertility decline compared to national average. In addition, the birth intervals in AP appear to be improving.

Maternal Mortality ratio (MMR) reflects the risk to mothers during pregnancy and childbirth. All India estimates of MMR ranges from 400 to 500 deaths per 100000 live births. Precise estimates of maternal mortality (MMR) in Andhra Pradesh is not available. Indirect estimates of MMR from the DFHS study in AP gives some puzzling results. According to these estimates, MMR in AP during the 1990's could have been as high as 997/100000 live births. More over, according to these estimates MMR appears to be increasing. On the other hand all cause of mortality among reproductive age groups has shown a decreasing trend. Hence, there is an urgent need for studies to directly estimate MMR.

Maternal or obstetric morbidity refers to morbidity from any cause related to or aggravated by the pregnancy. Most commonly reported problems in Andhra Pradesh are anaemia (35%) and excessive fatigue (33%) followed by swelling of the legs, body or face (25%). More than half (55%) of the women in reproductive age group of 15-19 years suffer from some kind of anaemia. About 17% of reproductive women have moderate to severe anaemia.

Gynecological morbidity includes any condition, disease or dysfunction of the reproductive system which is not related to pregnancy, abortion or childbirth, but which may be related to sexual behaviour. Common gynecological morbidities include, abnormal vaginal discharge, urinary tract infections, scanty periods, adolescent menstrual difficulties like back ache (Dysmenorrhoea), calf pain and irritability.

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