Tamil Nadu
Summary Report

National Family Health Survey
1992

Population Research Centre
The Gandhigram Institute of Rural Health and Family Welfare Trust
Ambathurai R.S., Tamil Nadu

International Institute for Population Sciences
Bombay

National Family Health Survey
(MCH and Family Planning)

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BACKGROUND

The National Family Health Survey (NFHS) is a nationally representative survey of ever-married women age 13-49. The NFHS covered the population of 24 states in India and the National Capital Territory of Delhi (the erstwhile Union Territory of Delhi) to provide a source of demographic and health data for inter-state comparisons. The primary objective of the NFHS was to provide national-level and state-level data on fertility, nuptiality, family size preferences, knowledge and practice of family planning, the potential demand for contraception, the level of unwanted fertility, utilization of antenatal services, breastfeeding and food supplementation practices, child nutrition and health, immunizations, and infant and child mortality.

In Tamil Nadu, the interviewers collected information from 3,948 ever-married women age 13-49 in urban and rural areas. The fieldwork in Tamil Nadu was conducted between 18 April and 7 July 1992. The survey was carried out as a collaborative project of the Ministry of Health and Family Welfare, Government of India, New Delhi; the International Institute for Population Sciences, Bombay; the Population Research Centre, the Gandhigram Institute of Rural Health and Family Welfare Trust, Gandhigram; the Centre for Development Research and Training, Madras; the East-West Center/Macro International, U.S.A; and the United States Agency for International Development (USAID), New Delhi. Funding for the survey was provided by USAID.

Figure 1
Total Fertility Rate (TFR) and Mean Number of Children Ever Born (CEB)

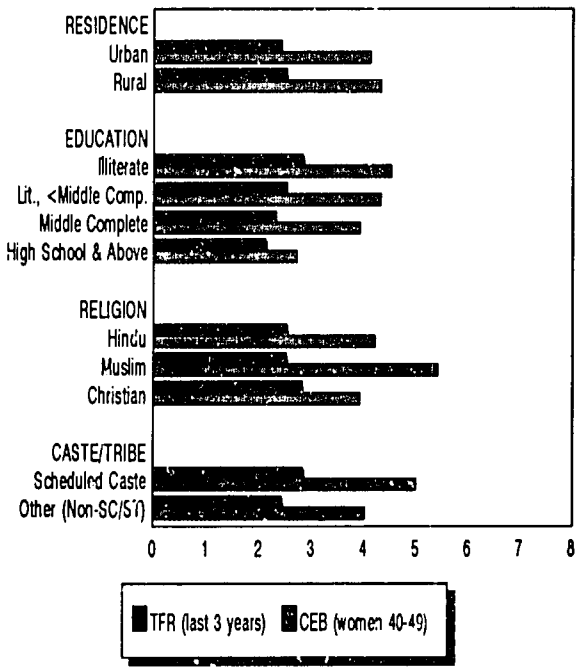
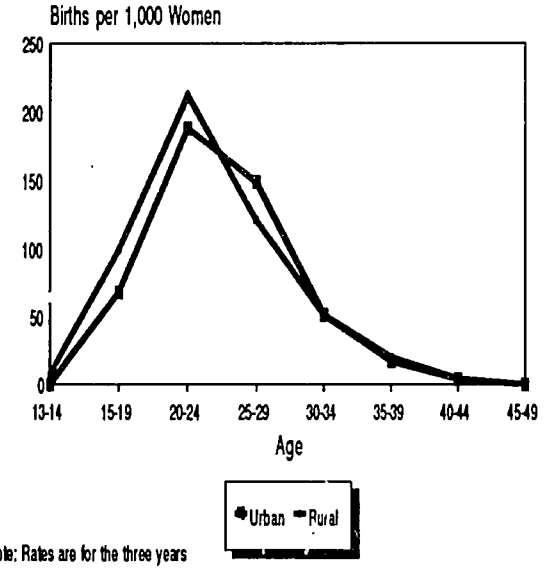


Figure 2
Age-Specific Fertility Rates by Residence



Note: Rates are for the three years before the survey (1989-91)

FERTILITY AND MARRIAGE

Fertility Levels, Trends and Differentials

- The current level of fertility in Tamil Nadu is lower than that of all of the major states in India, except Kerala, and is approaching replacement-level fertility. The total fertility rate (TFR) for women in the age group 15-49 for the state as a whole for 1989-91 is 2.5 children per woman, about 27 percent lower than the national average. The urban and rural TFRs are almost identical (2.4 and 2.5 children per woman, respectively), indicating the success of the family planning programme in reaching both urban and rural areas.

Women with at least a high school education have replacement-level fertility.

- The NFHS estimates may be compared with estimates from the Sample Registration System (SRS) maintained by the Office of the Registrar General, India. The most comparable report with estimates for Tamil Nadu is for 1990. The TFRs from the NFHS and SRS are the same for rural areas (2.5), but the NFHS estimate for urban areas is slightly higher (2.4) than the SRS estimate (2.1). The crude birth rate (CBR) from the SRS (21.6) is virtually identical to the CBR from the NFHS (21.3) based on the household birth record.

- Fertility differences by education are notable. The number of children per woman, as measured by the total fertility rate, ranges from 2.8 for illiterate women to 2.0 for women with at least a high school education.

- Differences by religion are almost nonexistent. Hindus (who account for almost nine-tenths of the state's population) and Muslims each average about 2.5 children per woman, and Christians average 2.7 children per woman. Scheduled castes have 2.8 children per woman.

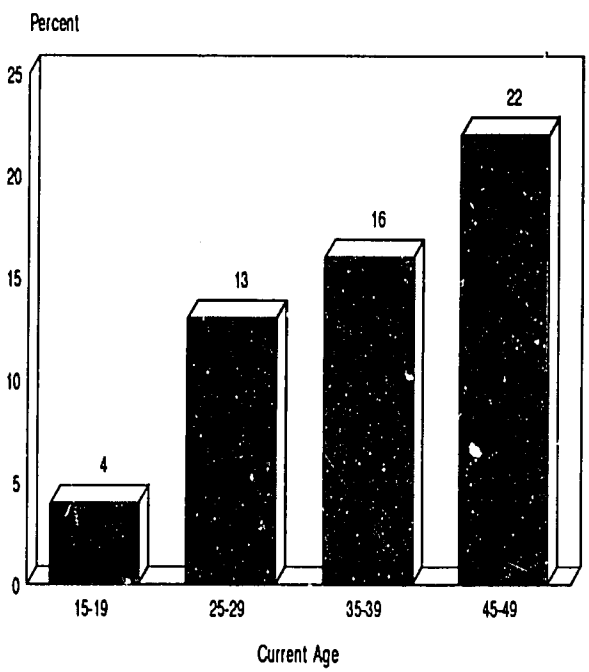
- The NFHS also collected data on cohort fertility as measured by the number of children ever born to women of different ages. Women age 45-49 at the time of the survey had borne an average of 4.5 children per woman. This is much higher than the total fertility rate of 2.5 for the period 0-4 years preceding the survey because most of the fertility experienced by these older women occurred considerably further back in time, when fertility rates were much higher. Corresponding values for the periods 5-9 and 10-14 years before the survey are 3.1 and 3.6, respectively. In other words, fertility declined by about half a child every five years during the past 15 years.

- Early childbearing is relatively rare in Tamil Nadu. Only 12 percent of women in the 15-19 age group have ever had a child. Eighty-five percent of women currently age 45-49 had their last child before age 35, and only 3 percent had a child after age 39. Childbearing is highly concentrated at ages 20-34.

Early childbearing is relatively rare; only 12 percent of women in the 15-19 age group have ever had a child.

- The median interval between births is 32 months, or about 2.6 years. One in every 10 births occurred within 18 months of the previous birth, and 27 percent of all births occurred within 24 months.

Figure 3
Percentage of Women Married by Age 15, by Current Age



Marriage

- Most women (66 percent) age 13-49 in Tamil Nadu are currently married. At age 15-19, nearly 25 percent of women are married. Marriages below age 15 have been virtually eliminated in Tamil Nadu. The proportion marrying by age 13 was only 6 percent in the 45-49 age cohort and close to zero in the 13-14 age cohort. The proportion marrying by age 15 declined from 22 percent in the 45-49 age cohort to 4 percent in the 15-19 age cohort. The median age at marriage has been rising in both urban and rural areas. Among women age 20-49 at the time of the survey, the median age at first marriage was 18 in rural areas and 20 in urban areas.

Marriages below age 15 have been virtually eliminated.

- There is no difference in age at first marriage between Hindus and Muslims. However, Christian women marry about three years later than other women, and scheduled caste women marry about two years earlier than other women.

- According to the Child Marriage Restraint Act of 1978, the minimum legal age at marriage in India is 18 years for women and 21 years for men. In Tamil Nadu, it is clear that a large percentage of couples are not abiding by the legal regulations. Thirty-six percent of women age 20-24 got married below the legal age at marriage. Part of the reason that the marriage law is not being obeyed is that less than half of women are aware of what the legal age at marriage is. Only 39 percent of respondents could correctly identify age 18 as the legal minimum age at marriage for women, and only 20 percent could correctly identify age 21 as the legal minimum age at marriage for men.

- Consanguineous marriages are common in Tamil Nadu. Twenty-four percent of ever-married women married a first cousin (on either their father's side or their mother's side), and 22 percent married a second cousin, uncle or other blood relative. The custom of cousin marriage is less common among Christian women than among women of other religions, and more common among scheduled caste women than among other women.

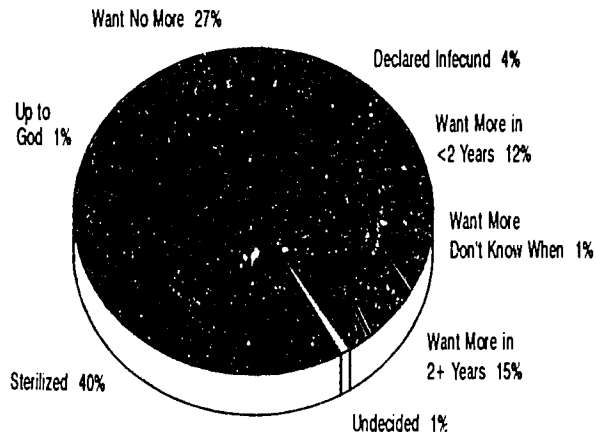
Fertility Preferences

- More than a quarter of women (27 percent) say they do not want any more children, and 40 percent of women (or their husbands) are sterilized so that they cannot have any more children. These two groups together constitute 67 percent of all currently married women in Tamil Nadu. Overall, 82 percent of women want to either space their next birth or stop having children altogether.

Eighty-two percent of women want to either postpone their next birth or stop having children altogether.

- The desire for more children declines rapidly as the number of children increases. More than 84 percent of women with no children say they want a child, and only 2 percent say they do not want any children. The proportion who want another child drops to 16 percent for women who have two living children and 4 percent for those with three living children.

Figure 4
Fertility Preferences Among Currently Married Women Age 13-49



- The desire to space children is common, especially among women with one child. Eleven percent of women with no children, 49 percent of women with one child and 12 percent of women with two children would like to have another child but not for at least two years. The use of permanent methods of contraception (79 percent of contraceptive prevalence) is evidently not satisfying the contraceptive needs of a substantial segment of women in Tamil Nadu. The encouragement of spacing methods for women who want more children would be likely to lower overall fertility and population growth, as well as to provide health benefits to both mothers and their children.

- Among women who want another child, there is a slight preference for having a son as the next child. More than a quarter (29 percent) want a son, 17 percent want a daughter, 45 percent say that the sex of the child does not matter, and 9 percent say that it is up to God.

FAMILY PLANNING

Knowledge of Family Planning Methods

- Knowledge of family planning is universal in Tamil Nadu: 99 percent of currently married women know of at least one contraceptive method, and 98 percent know where they could go to obtain a modern method. Knowledge about sterilization is most widespread. This is true for both female and male sterilization. The three officially sponsored spacing methods are less familiar to respondents. The most well known among the spacing methods are the IUD and the pill. Three-fourths of currently married women reported knowledge of these methods. Sixty-one percent of women know about condoms, but only 13 percent know about injections.

Knowledge and approval of family planning are nearly universal.

Contraceptive Use

- More than half of currently married women in Tamil Nadu have ever used a contraceptive method. Modern methods have been used by 49 percent of ever-married women and 51 percent of currently married women, and traditional methods have been used by 12 percent of both categories of women.

- Fifty percent of currently married women are currently using family planning. Forty-five percent are using modern methods, and 5 percent are using traditional methods.

Figure 5
Knowledge and Use of Family Planning
(Currently Married Women Age 13-49)

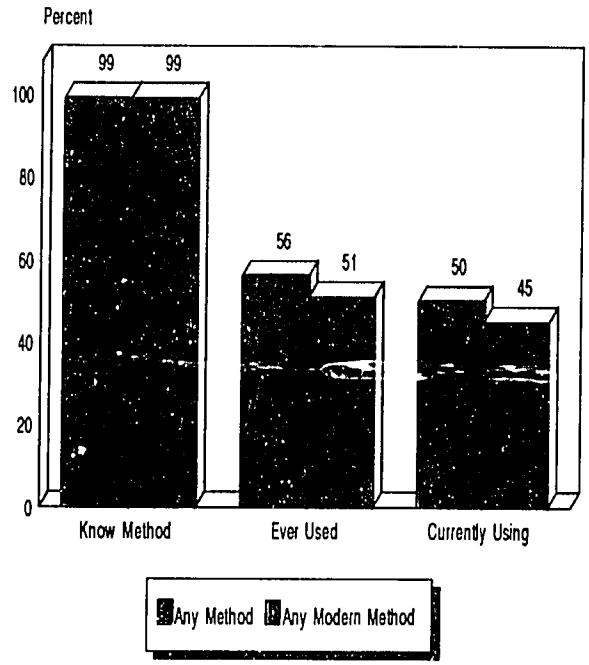
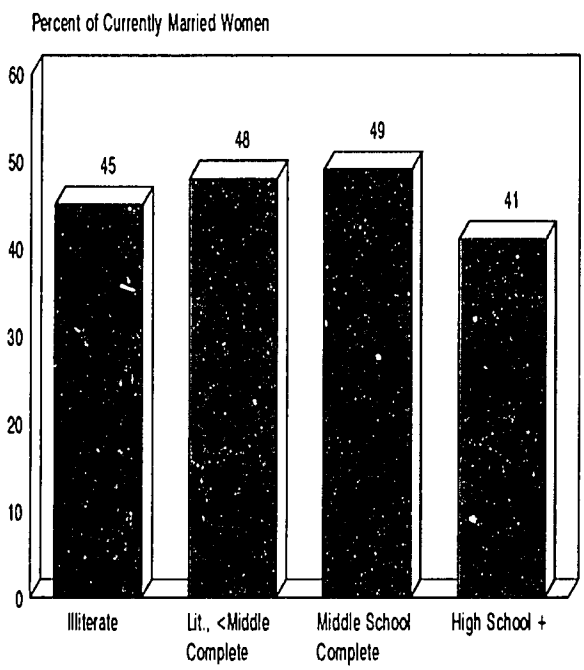


Figure 6
Current Use of Modern Contraceptive Methods, by Education



- Female sterilization is the most popular contraceptive method in Tamil Nadu, as in almost all Indian states. Female sterilization is used by 38 percent of currently married women, accounting for about 75 percent of all contraceptive use. The percentage of women using female sterilization declines dramatically with education, from 40 percent of illiterate women to 26 percent of women with at least a high school education. Four percent of currently married women reported the use of the IUD, and two percent reported that their husbands were sterilized. No other modern method of family planning was used by more than 2 percent of currently married women at the time of the survey.

Half of currently married women use family planning and 75 percent of users are sterilized.

- Differentials in current contraceptive use by background characteristics tend to be small. Current use is nearly the same in urban areas (51 percent) as in rural areas (49 percent). Differences by education are only slightly larger: current use ranges from 48 percent for illiterate women to 52 percent for women with at least a high school education. Surprisingly, current use of modern methods is somewhat higher for illiterate women (45 percent) than for women with at least a high school education (41 percent).

- Religious differentials in contraceptive use are also small. Prevalence is lowest among Muslims (46 percent) and highest among Hindus (50 percent).

- The public sector (government/municipal hospitals, Primary Health Centres, sub-centres and other governmental health infrastructure) supplies 78 percent of current users of modern methods, and the private medical sector (private hospitals or clinics, private doctors and pharmacies/drugstores) supplies 19 percent. Only 4 percent of users obtain their methods from other sources, such as shops, friends and relatives. In both rural and urban areas, the public sector is the source of supply for the majority of contraceptive users (86 percent of rural users and 63 percent of urban users).

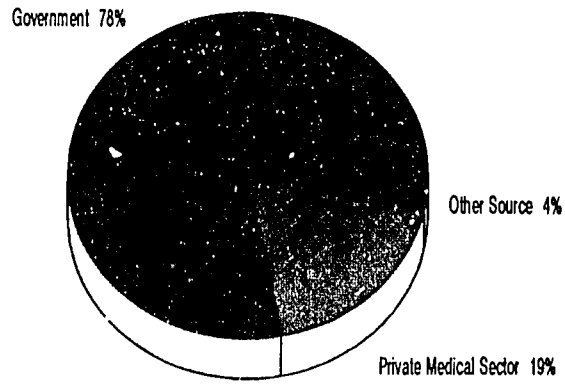
Attitudes Toward Family Planning

- Ninety-three percent of currently married, nonsterilized women who know of a contraceptive method approve of family planning use, and only 6 percent disapprove. Women perceived their husbands to be less favourable toward family planning than they are themselves; 69 percent of the husbands (of women who approve) approve of family planning.

- Education has less of an effect on approval of family planning than expected. Overall, 90 percent of illiterate women approve of family planning compared with 98 percent of women with at least a high school education. However, joint approval by both husband and wife is lowest (52 percent) among illiterate women.

- Approval of family planning is higher among Hindu and Christian couples (64 percent) than among Muslims (56 percent). Approval is almost the same among nonscheduled castes and tribes (64 percent) as among those belonging to scheduled castes (61 percent).

Figure 7
Sources of Family Planning Among Current Users of Modern Contraceptive Methods



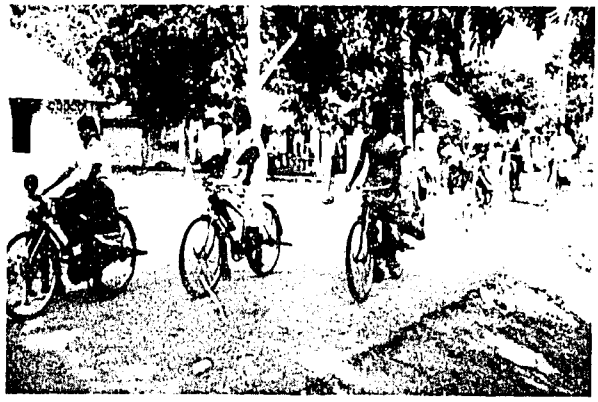
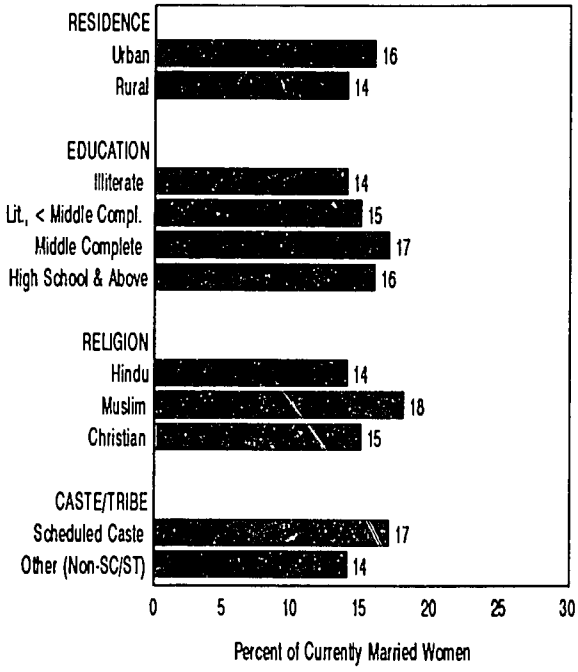


Figure 8
Unmet Need for Family Planning, by Selected Characteristics



- More than 80 percent of women who had ever used family planning reported that both they and their husbands approve of family planning. Among women who have never used family planning, 57 percent of women reported that both they and their husbands approve of family planning. Among never users who approve of family planning, 20 percent said their husbands do not approve of family planning.

Exposure to Family Planning Messages

- The effort to disseminate family planning information through the electronic mass media has succeeded in reaching half of ever-married women in Tamil Nadu. The coverage is good, given that only 44 percent of households in Tamil Nadu own radios and only 20 percent own televisions. The proportion of women exposed to family planning messages on radio or television is 67 percent in urban areas and 44 percent in rural areas. Ninety-three percent of women said it is acceptable to have family planning messages on radio and television, 3 percent said it is not acceptable and the rest (4 percent) were not sure.

Need for Family Planning Services

- Currently married women who say either that they do not want any more children or that they want to wait two or more years before having another child, but who are not using contraception, are defined as having an unmet need for family planning. Overall, 15 percent of women in Tamil Nadu have an unmet need for family planning. The unmet need is about the same for spacing births (8 percent) as for limiting births (7 percent). Together with the 50 percent of currently married women who are using contraception, a total of 64 percent of currently married

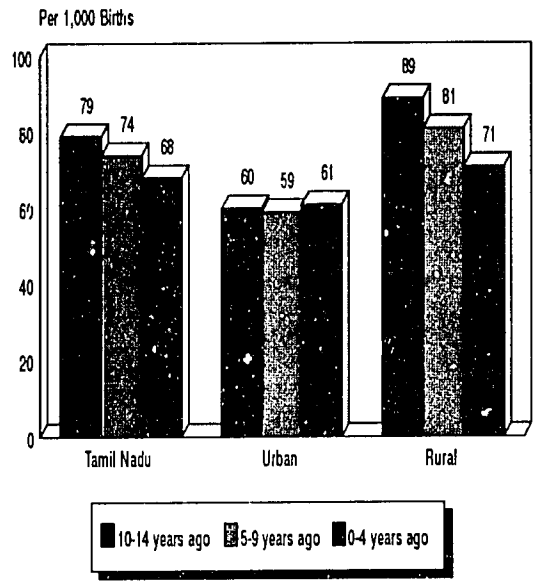
women have a demand for family planning. If all of the women who say that they want to space or limit their births were to use family planning, the contraceptive prevalence rate would increase from 50 percent to 64 percent of currently married women.

Fifteen percent of women have an unmet need for family planning.

- The impact of unwanted fertility can be estimated by comparing the *wanted fertility rate* with the total fertility rate discussed earlier. A birth is considered unwanted if the number of living children at the time of conception was greater than or equal to the current ideal number of children, as reported by the respondent. The wanted fertility rate represents the level of fertility that theoretically would result if all unwanted births were prevented. A comparison of the total fertility rate with the total wanted fertility rate indicates the potential demographic impact of the prevention of all unwanted births.

- During the three-year period immediately preceding the survey, the wanted TFR of 1.8 children per woman is 0.7 child (28 percent) lower than the actual TFR of 2.5 children per woman. Large differences between these two measures are evident for all population subgroups, although the difference declines as the level of education increases. The difference between the two measures varies little by place of residence or religion.

Figure 9
Infant Mortality Rates for Five-Year Periods, by Residence



Note: Rates are for 5-year periods preceding the survey

MATERNAL AND CHILD HEALTH

Infant and Child Mortality

- Infant mortality rates declined in Tamil Nadu during the 15 years preceding the NFHS, from 79 per 1,000 during the period 10-14 years prior to the survey (approximately 1977-81) to 68 per 1,000 during the period 0-4 years prior to the survey (approximately 1987-91), an annual rate of decline of one infant death per 1,000 live births per year.

- Despite the decline in the infant mortality rate (almost 15 percent over a 10-year period), 1 in every 15 children born in the five years before the NFHS died within the first year of life, and 1 in every 12 children died before reaching age five. Thus there is considerable scope for further improvement in the level of infant and child mortality in the state.

One in every 15 children dies within the first year of life.

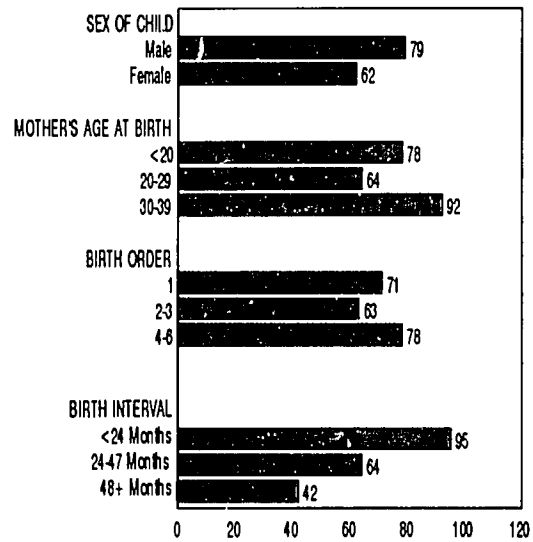
- During 1987-91, the infant mortality rate was 16 percent higher in rural areas (71 per 1,000 live births) than in urban areas (61 per 1,000 live births). The risk of dying before the fifth birthday is 42 percent higher in rural areas than in urban areas.

- Infant mortality declines sharply with increasing education of women, ranging from a high of 89 per 1,000 for illiterate women to a low of 34 per 1,000 for women with at least a high school education.

- Surprisingly, all of the infant and child mortality measures show higher mortality for males than for females. The ratio of male to female mortality is 1.38 for neonatal mortality, 1.15 for postneonatal mortality, 1.29 for infant mortality, 1.25 for child mortality, and 1.27 for under-five mortality.
- Infant mortality is highest for children of older mothers age 30-39 (92 per 1,000). The lowest infant mortality rate, 64 per 1,000, is for women in the prime childbearing ages 20-29. Infant mortality is more than twice as high for children with a preceding birth interval of less than 24 months as for children with a preceding birth interval of 48 months or more (95 per 1,000 compared with 42 per 1,000, respectively).

The infant mortality rate is highest for children with a preceding birth interval of less than 24 months.

Figure 10
Infant Mortality Rates by Selected Demographic Characteristics

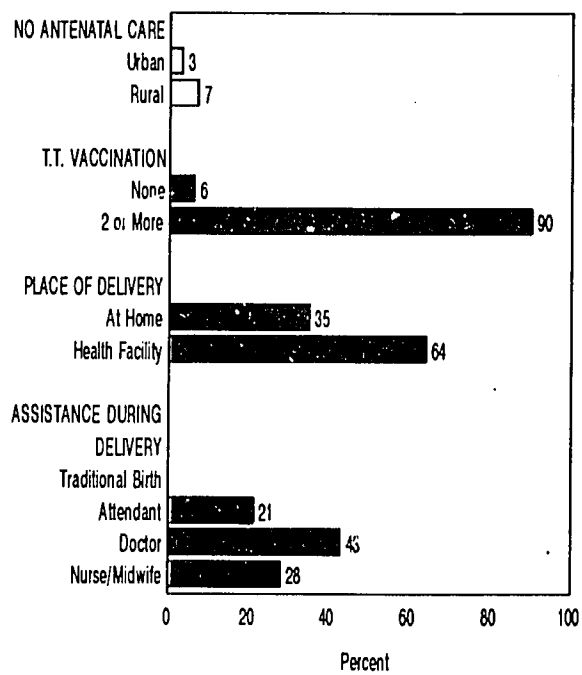


Note: Based on births in the 10 years preceding the survey

Antenatal Care and Assistance at Delivery

- Most pregnant women in Tamil Nadu receive antenatal care. During the four years preceding the survey, mothers received antenatal care for 95 percent of births. Mothers received two or more tetanus toxoid injections for 90 percent of births.

Figure 11
Antenatal Care, Place of Delivery, and Assistance During Delivery



The vast majority of pregnant women receive antenatal care, tetanus toxoid vaccinations and iron and folic acid tablets.

- There was little difference in antenatal care by residence or by education. The percentage of births for which the mother received antenatal care is 93 percent in rural areas compared with 97 percent in urban areas. The percentage receiving antenatal care ranges from 90 percent for births to illiterate mothers to 99 percent for births to mothers with at least a high school education.

- Most babies (64 percent) are delivered in health facilities, 34 percent in public health facilities and 30 percent in private health facilities. Forty-three percent of deliveries are assisted by a doctor, 28 percent by a nurse/midwife, 21 percent by a traditional birth attendant, and 7 percent by a relative or other person.

Breastfeeding and Supplementation

- Breastfeeding is nearly universal in Tamil Nadu, with 95 percent of all children born during the five years preceding the survey having been breastfed. The practice of breastfeeding is high for all groups regardless of residence, education, religion, and other background characteristics.

- It is recommended that the first breast milk should be given to children because it contains colostrum, which provides natural immunity. However, a substantial majority (84 percent) of women who breastfeed squeeze the first milk from the breast before they begin breastfeeding their babies. Only 22 percent of the babies in

Tamil Nadu are put to the breast within 1 hour of birth, and only 55 percent within 24 hours of birth, indicating the need to educate mothers concerning the importance of immediate commencement of breastfeeding.

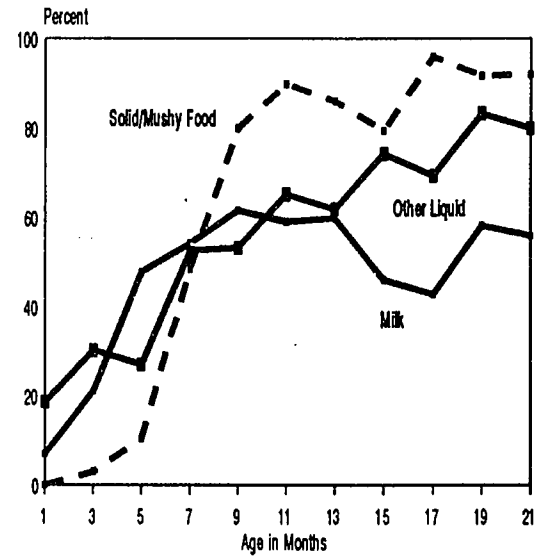
- It is also recommended that children should be exclusively breastfed for the first 4-6 months of life. Exclusive breastfeeding is common in Tamil Nadu for very young children, but even at age 0-1 months nearly one-third of babies are given water or other supplements. On average, 56 percent of infants below the age of four months are given only breast milk (i.e., are exclusively breastfed). The percentage of babies being exclusively breastfed drops off rapidly after the first few months of life, to less than 3 percent at age 12-13 months. Sixty-two percent of infants under 4 months receive full breastfeeding, which includes both those who are exclusively breastfed and those who receive breast milk and plain water only.

- The use of bottles with nipples (a practice which is discouraged because of the risk of infection) increases from 5 percent at age 0-1 month to 40 percent at age 4-5 months, after which the percentages decline.

Vaccination of Children

- The Universal Immunization Programme aims to inoculate all children against six preventable childhood diseases: tuberculosis, diphtheria, whooping cough (pertussis), tetanus, polio and measles. Of children age 12-23 months, 92 percent have been vaccinated for tuberculosis (BCG vaccine) and 72 percent for measles. Almost 90 percent have received all three doses of polio vaccine (85 percent) and DPT vaccine (87 percent). Sixty-five percent of children age 12-23 months are fully vaccinated, and only 3 percent have received no vaccinations at all.

Figure 12
Percentage of Children Given Milk, Other Liquid, or Solid/Mushy Food the Day Before the Interview



Note: Based on youngest child under age two being breastfed;
Milk refers to fresh milk and tinned/powdered milk

Figure 13
Vaccination Coverage Among Children Age 12-23 Months

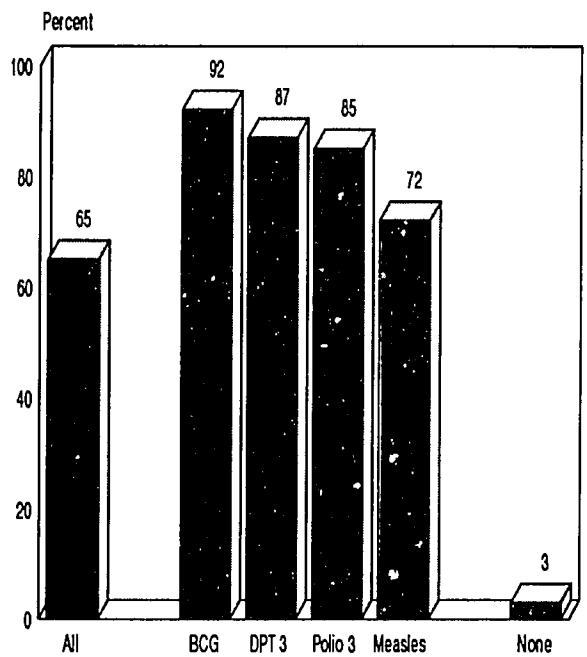
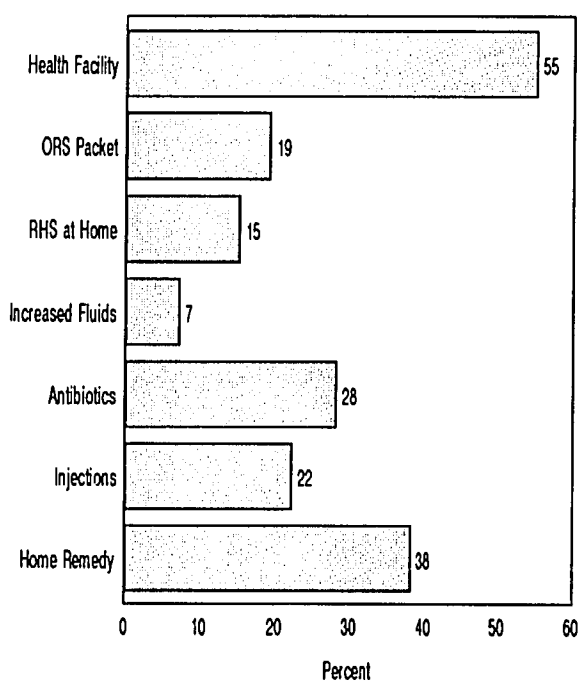


Figure 14
Treatment of Diarrhoea in the Two Weeks Preceding the Survey
(Children Under 4 Years)



The vaccination rate of children against six preventable childhood diseases is the highest among the large states in India.

- The proportion fully vaccinated is 73 percent in urban areas and 60 percent in rural areas. Boys are somewhat more likely to have been fully vaccinated against childhood diseases (68 percent) than girls (62 percent). The proportion of children who have been fully vaccinated varies slightly by religion: 65 percent of Hindu children, 70 percent of Muslim children, and 59 percent of Christian children. Fifty-nine percent of scheduled caste children are fully vaccinated.

- Differentials by level of education of the mother are more notable. Fifty-six percent of children of illiterate mothers received all recommended vaccinations, compared with 88 percent of children of mothers who have completed high school.

Children's Morbidity and Treatment Patterns

- During the two weeks preceding the survey, 9 percent of children under age four had symptoms of acute lower respiratory infection (cough accompanied by fast breathing). During the same period, 18 percent of children suffered from fever, which may be a sign of malaria or other illness, and 13 percent had diarrhoea. For each of these medical conditions, 55-73 percent of children were taken to a health facility or provider, and 73-78 percent received some form of treatment.

- Knowledge of ORS packets is fairly widespread, but their use is not. Sixty-one percent of mothers are familiar with ORS packets, but only 32 percent have ever used them. Only 19 percent of children with recent episodes of diarrhoea were treated with ORS, and another 15 percent were treated with a recommended home oral rehydration fluid.

Nutritional Status of Children

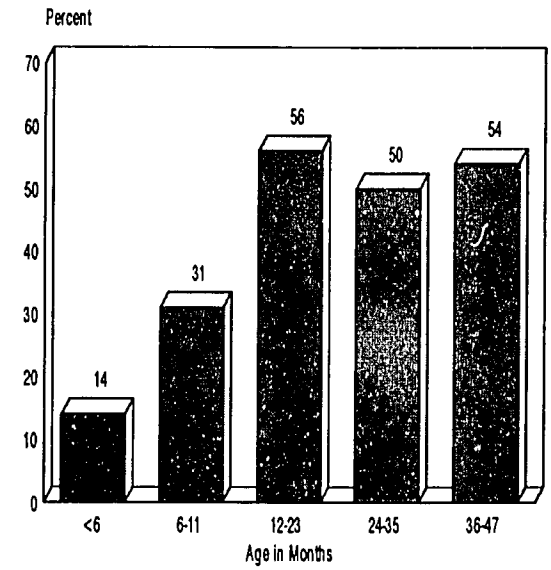
- In the NFHS, children under four years of age were weighed to assess their nutritional status. Based on this measure, undernutrition of children under four years of age was found to be high in Tamil Nadu. Almost half (47 percent) of all children are underweight for their age, and 13 percent are severely underweight.

Forty-seven percent of all children are underweight for their age.

- Female children are marginally more disadvantaged nutritionally than boys. Fifty percent of girls and 43 percent of boys are underweight. Undernutrition is higher in rural areas (52 percent) than in urban areas (37 percent). A larger percentage of children from scheduled castes are underweight than other children.

- The variability by educational level is also notable. Undernutrition declines steadily with increasing educational attainment of the mother, from 56 percent for children of illiterate mothers to 27 percent for children of mothers with at least a high school education.

Figure 15
Percentage of Children Under Age Four Who Are Underweight, by Age



Note: Percentage of children more than 2 standard deviations below the median of the International Reference Population

KNOWLEDGE OF AIDS

- Knowledge of the existence of Acquired Immune Deficiency Syndrome (AIDS) is very limited, with only 23 percent of women age 13-49 indicating that they had ever heard of the illness. Women age 25-34, those living in urban areas, and Christian women are more likely to have heard of AIDS than others. Women of scheduled castes are much less likely to have heard about AIDS than others. The largest differentials in knowledge of AIDS are by educational level. Only 3 percent of illiterate women have heard of AIDS compared with 79 percent of women who have at least a high school education.

Only 23 percent of women age 13-49 had ever heard of AIDS.

- Among women who have heard of AIDS, the percentage with misconceptions about different ways of getting AIDS ranges from 30 percent who think that it can be contracted from shaking hands with someone with AIDS to 52 percent who think that AIDS can be contracted from stepping on urine/stool of a person who has AIDS. Thirty-three percent of women who have heard of AIDS think it is curable, and 22 percent think an AIDS vaccine exists. Seventy-one percent correctly think that AIDS can be avoided by practising safe sex, but less than 15 percent have knowledge of any one of the other means of prevention, such as use of condoms, checking blood before transfusions, sterilizing needles and syringes for injection, and avoiding pregnancy when infected with AIDS.

CONCLUSIONS

Fertility and Family Planning

- Fertility has fallen to low levels in Tamil Nadu. According to the NFHS, the total fertility rate is 2.5 children per woman, somewhat higher than the 1992 provisional estimate of 2.2 children per woman from the Sample Registration System. Fifty percent of currently married women practise family planning. If all women who say they want to space or limit their births were to use family planning, the contraceptive prevalence rate would increase from 50 percent to 64 percent of currently married women. Most women who intend to use contraception in the future prefer to use female sterilization. However, 15 percent expressed the intention to use modern spacing methods, indicating demand for such methods. Socioeconomic differentials in fertility and family planning are small, indicating that the family planning programme in Tamil Nadu has been quite successful in reaching women irrespective of their residence, education, religion, or caste.

- The use of contraceptive methods is high in Tamil Nadu compared to most states in India and could increase if knowledge and use of methods other than sterilization were supported to a greater degree. The family welfare programme should pay increasing attention to provision of effective spacing methods and should educate women concerning alternatives to sterilization as part of a balanced programme to satisfy the contraceptive needs of women in Tamil Nadu.

Maternal and Child Health

- Tamil Nadu ranks second or third among all states in India in the provision of each of the antenatal care services covered in the NFHS. Most women, regardless of their place of residence or educational level, receive antenatal care for their births. Most women also receive two or more tetanus toxoid vaccinations. Most babies (64 percent) were delivered at a health facility or institution, and 71 percent of deliveries were assisted by a doctor or nurse/midwife.

- Tamil Nadu ranks third (after two small states) and first among the large states in the provision of vaccinations to children. Sixty-five percent of children age 12-23 months have been fully immunized, and only 3 percent have received no vaccinations at all. Ninety-two percent have been vaccinated against tuberculosis (BCG vaccine), 72 percent against measles, and almost 90 percent have received all three doses of the polio (85 percent) and DPT (87 percent) vaccines. Vaccination rates are somewhat higher in urban than rural areas and boys are slightly more likely to be fully vaccinated than girls.

- Despite the success attained in delivery of maternal and child health services and the decline in infant mortality (15 percent over a ten-year period), 1 in every 12 children dies before reaching age five. Child survival programmes need to be intensified to produce further improvement in the level of infant and child mortality. Substantial reductions in infant and child mortality could be attained by reducing or eliminating birth intervals of less than 24 months. In Tamil Nadu there is also a higher risk of mortality for births to mothers of more than 3 chil-

dren. More family planning programme emphasis on spacing methods and raising the awareness of women to these risks would reduce infant and child mortality as well as fertility. Improvements in sanitation are also needed to reduce infant and child mortality; the NFHS findings show that 71 percent of households in Tamil Nadu have no toilet facility at all.

- Although the ambitious Midday Meal programme in Tamil Nadu reaches school-age children, inadequate nutrition continues to pose a serious problem for pre-school age children: almost half of all children under age four are underweight for their age. The proportion of children who are severely underweight is also notable—13 percent. Mother's level of education is the single most important factor related to nutritional status of children. Children of illiterate mothers are twice as likely to be underweight as children of mothers with at least a high school education. Undernutrition is also higher in rural areas than in urban areas where a higher percentage of high school graduates reside.

- The maternal and child health indicators for Tamil Nadu show that great strides have been made in providing antenatal care of all kinds to mothers and vaccinations to children irrespective of residence, religion, and caste. However, more effort is required to educate women concerning proper feeding practices and nutrition of pre-school-age children, use of ORS and other rehydration solutions, and prevention of illness in children. Increasing female literacy and education would have a favourable effect on child nutrition and morbidity, particularly in rural areas. Health programmes, including maternal and child health care programmes, should also devote more attention to improving the knowledge of AIDS and how to prevent it among the women of Tamil Nadu to assure that the gains made in health service delivery are not undermined by increasing morbidity and mortality due to AIDS.

Status of Women

- Women in Tamil Nadu enjoy a higher status than women in most states of India, as indicated by the balanced sex ratio of 1,000 and the higher than average female literacy. Other indicators that support this view are the lower mortality rates of females compared with males at all stages of childhood, from the neonatal period through age four, as well as the lack of a strong preference for sons, insofar as most women in Tamil Nadu consider a family with one son and one daughter to be ideal. The percentage of women who work outside the home (38 percent) is twice the national average (19 percent). Girls, however, are slightly disadvantaged in terms of school attendance, nutritional status and vaccination rates compared with boys, implying that women should be encouraged to give equal attention to their daughters in these matters.

Achievement of Programme Objectives

- The family planning programme has been successful in reducing fertility almost to the replacement level, despite a lower rate of female literacy than is found in Goa, Kerala and Mizoram (the only other states that have reached replacement-level fertility).

- This success is no doubt partly due to urbanization (at 34 percent, higher than the all-India average), the development of a road network that gives the rural population greater access to urban areas than other states, rising rates of female literacy (currently 50 percent of women of reproductive age) and female employment, and to cultural factors that cannot be measured.

However, the state's level of social and economic development, although higher than the all-India average on many indices, is still quite modest when viewed in international and historical perspective. Much of the credit for the Tamil Nadu success story is clearly due not to economic and social development but to the state's maternal and child health care delivery programme. Tamil Nadu has an outstanding record in achieving the major national objectives of the Child Survival and Safe Motherhood Programme (CSSM) adopted in the Eighth Five-Year Plan (1992-97). It has achieved a crude birth rate of 21 per 1,000 population and a crude death rate of 10 per 1,000, which are better than the objectives of the CSSM. The infant mortality rate of 68 per 1,000 and the child

mortality rate of 87 per 1,000 are lower than the national average. Tamil Nadu has excelled in meeting the targets for service coverage by providing antenatal care for 95 percent of births, assistance at delivery by doctors or trained birth attendants for 71 percent of births and better vaccination coverage than in any of the other major states in India. These remarkable accomplishments have been possible due to a state budget for health and education that exceeds one-third of all public expenditures and a policy that recognizes the importance of integrating maternal and child health care with family planning services.

- The state's strong family welfare and health programmes probably provide the principal explanation of how Tamil Nadu has managed to achieve near-replacement fertility despite a level of social and economic development that is far lower than observed in most other populations at this stage of fertility transition. The example of Tamil Nadu should be of considerable interest to population policymakers, programme managers, and researchers, both in India and elsewhere.

FACT SHEET – TAMIL NADU

1991 Population Data
Census and Sample Registration System

Total population (millions)	56
Percent urban	34.2
Percent scheduled caste	19.2
Percent scheduled tribe	1.0
Decadal population growth rate (1981-91)	15.4
Crude birth rate (per 1,000 population)	21.6
Crude death rate (per 1,000 population)	8.8
Life expectancy at birth (years)[1]	
Male	60.8
Female	60.8

National Family Health Survey, 1992

Sample Population

Ever-married women age 13-49	3,948

Background Characteristics of Women Interviewed

Percent urban	34.7
Percent illiterate	50.1
Percent completed secondary school or higher	15.2
Percent Hindu	87.6
Percent Muslim	6.3
Percent Christian	5.9
Percent working	46.7

Marriage and Other Fertility Determinants

Percent of women age 13-49 currently married	66.3
Percent of women age 13-49 ever married	72.0
Singulate mean age at marriage for females (in years)	20.5
Singulate mean age at marriage for males (in years)	26.4
Percent of women married to first cousin[2]	24.4
Median age at marriage among women age 25-49	18.1
Median months of breastfeeding[3]	16.9
Median months of postpartum amenorrhoea[4]	5.6
Median months of postpartum abstinence[4]	5.6

Fertility

Total fertility rate[5]	2.5
Mean number of children ever born to women age 40-49	4.2

Desire for Children

Percent of currently married women who:	
Want no more children	27.1
Want to delay their next birth at least 2 years	14.6
Mean ideal number of children[6]	2.1
Percent of births in the last 4 years which were:	
Unwanted	8.7
Mistimed	16.9

Knowledge and Use of Family Planning

Percent of currently married women:	
Knowing any method	99.1
Knowing a modern method	99.1
Knowing a source for a modern method	97.6
Ever using a method	56.1
Currently using any method	49.8
Percent of currently married women currently using:	
Pill	0.6
IUD	3.5
Injection	0.0
Condom	1.6
Female sterilization	37.5
Male sterilization	2.0
Periodic abstinence	2.6
Withdrawal	1.4
Other method	0.6

Mortality and Health

Infant mortality rate[7]	67.7
Under-five mortality rate[7]	86.5
Percent of births[8] whose mothers:	
Received antenatal care from a doctor or other health professional	78.1
Received 2 or more tetanus toxoid injections	90.1
Percent of births[8] whose mothers were assisted at delivery by:	
Doctor	42.8
Nurse/midwife	28.4
Traditional birth attendant	21.4
Percent of children 0-1 months who are breastfeeding	95.6
Percent of children 12-13 months who are breastfeeding	64.9
Percent of children 12-23 months who received:[9]	
BCG	91.7
DPT (three doses)	86.5
Polio (three doses)	85.3
Measles	71.6
All vaccinations	64.9
Percent of children under 4 years[10] who:	
Had diarrhoea in the 2 weeks preceding the survey	12.7
Had a cough accompanied by rapid breathing in the 2 weeks preceding the survey	8.6
Had a fever in the 2 weeks preceding the survey	17.7
Are undernourished (underweight)[11]	46.6

Knowledge of AIDS

Percent of ever-married women age 13-49 with knowledge of AIDS	23.4

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1 1986-91

2 Based on ever-married women

3 Current status estimate based on births during the 48 months preceding the survey

4 Current status estimate based on births during the 36 months preceding the survey

5 Based on women age 15-49 years during the 3 years preceding the survey

6 Based on ever-married women age 13-49. Excludes women who gave a non-numeric response to family size (2 percent of women 13-49)

7 During the 5 years preceding the survey (1987-91)

8 Births in the period 1-47 months preceding the survey

9 Based on information from vaccination cards and mothers' reports

10 Children born in the period 1-47 months preceding the survey

11 Undernourishment assessed by weight-for-age; the percent undernourished are those below -2 SD from the median of the International Reference Population, recommended by the World Health Organization