# Fertility pattern of Tribal Women of Srikakulam District of AP

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**Abstract :** The presented study is carried out to understand the total health status of selected Konda Savara tribe women located in Srikakulam district, North Coastal districts of Andhra Pradesh to understand the total health status of selected Konda Savara tribe women. The general implication that can be derived from the regression result is that demographic and social variables (like educational status, family size and male to female ratio in the household) are the most important determinant of fertility. Hence, there should be a serious work on social and demographic conditions of tribal especially in family planning. This ultimately necessitates an extensive provision of health care services to the Konda Savara tribe community The general implication that has derived from the fertility model is that demographic and social variables are the most important determinant of fertility. It is suggested that there should be a serious work on social and demographic conditions of tribal especially in family planning. This ultimately necessitates an extensive provision of health care services to these tribal communities.

**Key words:** Primitive tribe, Fertility, health status, uterine wastage, birth rate

## Introduction:

Health status of a woman is a function not only of medical care but of the overall integrated development of socio-cultural, economic, education, nutritional status etc. Each of these aspects has a deep impact on the health status which in turn influences the health performance of the women. Efforts have been made to make a holistic view of all the dimensions of health status of the Selected Primitive tribe women community which would generate new impetus for some appropriate interventions with regard to tribal health. Studies found that the health status of the tribal people of India, especially in the state of Andhra

Pradesh is relatively a neglected area of research. The Primitive Tribal Groups (PTGs) are mostly residing in the North Coastal Districts of Andhra Pradesh. As per the literature work on health status of PTGs women, regulation has not been reported so far on the selected Konda Savara tribe.

## Objectives and methodology of the study

The presented study is carried out to understand the total health status of selected Konda Savara tribe women located in Srikakulam district, North Coastal districts of Andhra Pradesh. Multi stage stratified random sampling method is used in the present study. The selection process is carried out in four stages; i.e., relating to districts, mandals, villages and households. Srikakulam district of North Coastal district is selected for the study due to the fact that these districts have larger extent of Tribe Sub-Plan area and higher proportion of PTG population, supposed to be located at far end of the district and with much interior hill tracts where the hill and Primitive Tribal Groups (PTGs) reside. Two villages namely Kondalogam Puttulogam village are

selected based on the random sampling procedure for the study. To examine the health status a sample of 100 women households are selected.

Information is collected through a pre designed and structured household schedule in the selected villages during the year 2011-12 in different visits. In analyzing the data, averages and percentages, multiple regression analysis is used in appropriate places.

In determining the fertility performance of the women, the average rate of conceptions, uterine wastage, live births, children survived were being calculated.

➢ Live births per women = No. of live births/No. ever married women

➢ Uterine wastage = No. of Abortions+ No. of still births/ No. of live births

➢ Post natal loss = No. of child dead/ No. of live births

➢ Index of survival = No. of surviving off spring/ No. of conception × 1000

- Crude Birth Rate (CBR) = Total no. of live births /total population $\times$ 1000

- General Fertility Rate (GFR) = Total no. of live births in a year/ Total no. of women aged 15-44 years $\times$ 1000

- Age Specific Fertility Rate (ASFR) = Total no. of live births to mothers by specified age/ Total no. of women of same age group $\times$ 1000

- Fertility Rate (TFR) =

$$\frac{(\Sigma ASFR) \times 5}{1000}$$

- The sum of ASFR is multiplied by 5 because each age group (e.g. 15-19) consists of women of five different ages.

- General Fertility Rate (GFR) = Total no. of live births in a year/ $(1 \times w_1) + (7 \times w_2) + (7 \times w_3) + (6 \times w_4) + (4 \times w_5) + (1 \times w_6)$

**Analysis of the study**

**Fertility Performance of the selected Tribe Women**

Various studies indicate that menarcheal age is influenced by food habit, nutrition, occupation, education, family size, living condition, birth rank, environmental, genetical, socio-economic factors, etc.

**Table: 1 Distribution of the ever married women by age at menarche**

| Age at menarche (in years) | 11 | 12 | 13 | **14** | **15** | **16** | **17** | **18** |
|---|---|---|---|---|---|---|---|---|
| Percentage (=100.0) | 4.67 | 10.33 | 28.67 | 36.33 | 15.33 | 2.33 | 1.67 | 0.67 |

Source: Data collected through Field Survey

In general, it starts about the 13th to 14th year of age, but it may vary according to different environmental, economic conditions

and nutrition. With earlier onset of menarche, a woman gets a longer reproductive life. According to table 1, it has been observed that the age at menarche of the tribal women (respondents) varies from 11 years to 18 years. The maximum percentage of the Tribal women menstruated at the age of 14 years (36.33 percent) and 13years (28.67 percent) whereas some women achieved menstruation cycle at the age of 15 years (15.33 percent) and respectively. 12 years (10.33 percent) few women menstruated late. Among all the women, the Mean±SD age at menarche has been found to be 13.65±1.17 years.

**Fertility history of the ever married women:**

Fertility, the actual reproductive performance, the actual occurrence of birth, especially live births are a time dependant genetic concept. Table 2 presents the fertility performance of the ever married women. The total number of conceptions, uterine wastage, live births and children survived are some of the major findings of this study.

**Table: 2. Fertility history of the ever married women**

| Present age group | No.of ever married women | Total no.of conception | No.of abortion per conception | No.of still birth per conception | No.of live birth per conception | No. of child dead per conception | No.of survivors per conception | Post natal loss |
|---|---|---|---|---|---|---|---|---|
| | | Average | Average | Average | Average | Average | Average | average |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| 15-19 | 5 | (0.88) | (0.13) | 0 - | (0.87) | 0 - | (0.87) | 0 |
| 20-24 | 18 | (1.81) | (0.08) | (0.04) | (0.88) | (0.05) | (0.82) | 0.06 |
| 25-29 | 19 | (2.64) | (0.08) | (0.05) | (0.87) | (0.06) | (0.81) | 0.07 |
| 30-34 | 17 | 3.84) | (0.06) | (0.03) | (0.92) | (0.06) | (0.86) | 0.07 |
| 35-39 | 15 | (4.49) | (0.07) | (0.02) | (0.91) | (0.08) | (0.83) | 0.09 |
| 40-44 | 12 | (5.39) | (0.10) | (0.08) | (0.82) | (0.11) | (0.72) | 0.13 |
| 45-49 | 14 | (5.05) | (0.11) | (0.07) | (0.81) | (0.12) | (0.69) | 0.15 |
| Total | 100 | 3.51 | 0.08 | 0.05 | 0.87 | 0.08 | (0.79) | 0.09 |

Source: Data collected through Field Survey

As per the table 2 the study reveals that both the uterine and the postnatal loss are very low among the tribal respondents. Due to this the index of survivality becomes high (78.65).

**Measures of Fertility**:

In the present study (table 3), child-woman ratio for C0-4/W15-44, C5-9/W20-49 and C0-9/W15-49 among the Tribal women have been found to be 595.32, 637.63 and 1074.40 respectively. Preference of male child, more number of children ever born per woman in the last decade illiteracy, relatively high child death among the older Tribal women etc are attributed as the reasons of their high CWR. The CBR among the Tribals has been found to be 26.29. Though the standard of education is low among the tribals (Present Study), the low CBR indicates the acceptance of the Government health care facilities among the women and the adoption of different methods of family planning.

Table 3 Measure of fertility among the Tribal population

| Sl.No. | Fertility Indicator | Value |
|--------|---------------------|-------|
| 1a. | Child-Woman Ratio($C_{0-4}/W_{15-44}$) | 595.32 |
| 1b. | Child-Woman Ratio($C_{5-9}/W_{20-49}$) | 637.63 |
| 1c. | Child-Woman Ratio($C_{0-9}/W_{15-49}$) | 1074.40 |
| 2. | Crude Birth Rate(CBR) | 26.29 |
| 3. | General Fertility Rate(GFR) | 119.06 |
| 4. | Total Fertility Rate(TFR) | 3.29 |
| 5a. | Age Specific Fertility Rate(15-19) | 61.20 |
| 5b. | Age Specific Fertility Rate(20-24) | 241.38 |
| 5c. | Age Specific Fertility Rate(25-29) | 275.86 |
| 5d. | Age Specific Fertility Rate(30-34) | 58.82 |
| 5e. | Age Specific Fertility Rate(35-39) | 21.28 |
| 6. | Sex-Age Adjusted Birth Rate (SAABR) | 27.42 |

Source: Data collected through Field Survey

This is possible due to the approach of the various health workers to the villagers personally and communicates the necessary information. Other reasons of low CBR include the poor nutritional status and the effect of postpartum /amenorrhea. The simplest overall age limited measure is the General Fertility Rate (GFR), defined as the number of births per 1000 women of the child bearing age in a specific

year. GFR also does not indicate a definite pattern. When the CBR is moderate, GFR is high which indicates that the number of women in this age-group (15-44 years) is less compared to the total population. In the present study, the GFR among the Tribals has been found to be 119.06. The adoption of different family planning methods by different age groups is one of the reasons of relatively low GFR. Among other reasons, the poor nutritional status and postpartum Amenorrhea have affected the fertility of the Tribal women.

Age Specific Fertility Rate (ASFR) reveals the distribution of frequencies of births among women according to age. It is more accurate than the estimates of CBR. This is due to the fact that only the women in the child bearing age are considered here and not the whole population, the emphasis being made to a specific period of time in relation to live births and women. In a population, a detailed picture of fertility at a specified time can be obtained by examining the schedules of ASFR, since the age of mother is an important factor affecting the fertility level and the rate of child bearing is not uniform throughout all ages. In fact fertility is usually heavily concentrated between ages 20 to 29 years. In the present study among Tribals, ASFR has been found to be highest (241.38) in those women who are in 20-24 years age-group, followed by 275.86 (25-29years), 61.20 (15-19 years), 58.82 (30-34 years) and 21.28 (35-39years). It is interesting to note that the ASFR of the women reaches its peak in the age-group 20-24 years and becomes Zero after the age group (35-39) years.

As per the table 4, the highest ASFR of India has been reported as 314.5 in those reproductive mothers who are in the age-group of 20-34 years. Since the relatively high fertility reproductive periods have been observed in the age-group of 20-29 years, women of these age groups though adopting family planning methods should be made more aware of the different temporary methods of family planning. The total fertility rate presents a single index of total fertility and is the sum of Age Specific Fertility Rates, at each age i.e. from 15 to 44 years (Multiplied by the size of the class interval) and divided by 1000.

### Table.4 Age Specific Fertility Rates and Total Current Fertility Rate

| Present Age Group | No. of women | No. of live births during last year | | | ASFR (5)/(2) x 1000 |
|---|---|---|---|---|---|
| | | Boys | Girls | Total | |
| (1) | (2) | (3) | (4) | (5) | (6) |
| 15-19 | 49 | 2 | 1 | 3 | 61.22 |
| 20-24 | 58 | 6 | 8 | 14 | 241.38 |
| 25-29 | 58 | 9 | 7 | 16 | 275.86 |
| 30-34 | 51 | 1 | 2 | 3 | 58.82 |
| 35-39 | 47 | 1 | - | 1 | 21.28 |
| 40-44 | 36 | - | - | - | - |
| **Total** | **100** | **19** | **18** | **37** | **658.56** |

$\sum$ASFR=658.56          TFR= (658.56 x 5)/1000 = 3.29

The effect of the age-sex structure of the population on the crude birth rate can be reduced to the minimum by computing the Sex Age Adjusted Birth Rate (SAABR). The United Nation has defined the SAABR as the number of births per 1000 of a weighted aggregate of numbers of women in various five-year age groups from 15-44.The United Nations has recommended a standard set of weights in computing this aggregate. These are 1,7,7,6,4,1 which correspond to the average pattern of the age specific fertility rates for the five year age-groups, 15-19, 20-24, 25-29, 30-34, 35-39, and 40-44 respectively.

### Determinants of fertility among the selected Konda Savara Primitive Tribe Women:

The fertility level is the phenomenon which is the major determinant of population growth. The levels and trends in fertility are influenced by various physiological, cultural, social, economic, behavioral, demographic and ecological factors. Using the primary cross-sectional data attempt is made to estimate the major determinants of the total fertility rates in selected tribal

community. The following is the general multiple linear model to be estimated for the three selected tribes as aggregate and disaggregate. $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + u_i$

Where Y= Number of children

$X_1$ = Age of the women

$X_2$ = Educational levels of the household

$X_3$ = Family size

$X_4$ = male to female ratio

$X_5$ = Household economic status (wealth)

$X_6$ = Available medical infrastructure

$\beta_1$ to $\beta_6$ = coefficients of the independent variables

$u_i$ = error term

Theoretically, the women's fertility will increase with age at their early stage but gets decline as they get closer to the age of menopause. So fertility gets increase with age at first but ultimately gets decrease after a while. So, there is no a priori expected sign for age. But women's fertility is expected to decrease with education and hence we expect positive relationship between education level and fertility. Furthermore, family size and especially male to female ratio in the family will have a negative impact on fertility because households basically prefer male child and they demand children only up to same level.

Children are considered as wealth in tribal population and the rich affords more children. So we expect positive relationship between household income and fertility. The availability of health care institutions near to the tribal society will negatively affect fertility because the women will get some awareness about the burden having more children. Using the multiple linear regression model specified above, an attempt is made to estimate the major determinants of fertility. The following table shows the estimation result of women fertility determinant for Konda Savara tribe.

Table 5 : Results of the linear regression - fertility model for Konda Savara

| Variable | Coefficient | t-value |
|---|---|---|
| Age of the women | -0.050*** | -0.594 |
| Educational levels | -0.105* | -2.344 |
| Family size | -0.101* | -2.211 |
| Male to female ratio | -0.139** | -1.415 |
| economic status | 0.023*** | 0.251 |
| Medical infrastructure | -0.088* | -3.230 |
| N | 100 | |
| Intercept | 0.241 | |
| $R^2$ | 0.679 | |
| F | 11.884 | |

As can be seen from the above table all variables have their theoretically expected values. The age of the women has shown a negative relationship with fertility but is weekly significant. Education level, Family size and availability of medical infrastructure in the area are strongly significant (at one percent) and shows negative relationship with fertility. Family male to female ratio and Household economic status have their expected sign but significant only at 5 percent and 10 percent respectively.

We can also see from the above table 5 that a unit increase in household wealth also increases fertility by 0.023 units. On the other hand a unit increase in women's age, education, family size, male to female ratio and health care institutions decrease fertility by 0.05, 0.105, 0.101, 0.139, and 0.088 units, respectively. The explanatory power of the model is found to be more than satisfactory (67.9 percent) and significant as can be seen from the F-

value. The general implication that can be derived from the above regression result is that educational status, family size and male to female ratio in the household are the most important determinant of fertility. Hence, there should be a serious work on tribal education especially in family planning. This ultimately necessitates an extensive provision of health care services to these tribal communities.

### Conclusion:

Health status of women, though biological, is influenced by several socio-cultural norms and practices and also physical environmental condition. The actual health performance is the physiological potential of a woman to conceive and bear children which is between 15-49 years of age. In the present study, the average rate of conception per women is 3.51 and the average number of live births per woman is 3.50. Another interesting finding is that the average number of children currently living or surviving is 2.76 which indicate that average number of children who died is 0.29 per woman. The economic variables do not show any remarkable significance. The general implication

that can be derived from the regression result is that demographic and social variables (like educational status, family size and male to female ratio in the household) are the most important determinant of fertility. Hence, there should be a serious work on social and demographic conditions of tribal especially in family planning. This ultimately necessitates an extensive provision of health care services to the Konda Savara tribe community The general implication that has derived from the fertility model is that demographic and social variables are the most important determinant of fertility.

Hence, there should be a serious work on social and demographic conditions of tribal especially in family planning. This ultimately necessitates an extensive provision of health care services to these tribal communities.

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