

Original Research Article

Demographic Profile of Rural Population from Western Maharashtra of India

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ABSTRACT

India is the second most populated country in the world. Since 1901 census, the rural population is found to be declining steadily. However, though there is rapid growth in urbanization, still the bulk of population is residing in rural area.

The objective of this study was to assess the present pattern of rural population to understand the future population trend.

Seven villages with population < 5000 were randomly selected from Sangli district of Maharashtra. These 7 villages comprised the population of 10,489.

Sex ratio was 926 females per 1000 males. 38.0% of the population was below the age of 25 years while 55.4 % below the age of 35 years. Age-sex structure revealed the high population proportion at 20-25 years in both sexes with declining proportion in both directions of the age. The total Dependency Ratio (modified) of 46.9% indicted high burden on the productive part of the population.

Key words: Sex Ratio, Population Proportion, Dependency Ratio

INTRODUCTION

The demographic profile of a country indicates the risk groups across age and sex. Most low and middle income countries for instance, have a classic expansive population pyramid which depicts a 'youth bulge' or a greater proportion of younger people. [1]

There is decline in growth rate of rural India by 5.9%, from 18.1% (1991 to 2001) to 12.2% (2001 to 2011). This sharp decline resulted in reducing rural population proportion from 72.19% to 68.84% as per census 2001 and 2011, respectively. This increased trend of migration towards urban area formed 2279 new villages. During two census years 2001 and 2011 there was no improvement in rural sex ratio (946 vs. 947) but improved rural literacy (58.7% vs. 68.9%) characterized by high improvement

in female literacy (increase of 12.7%) than male literacy (increase of 7.9%). [2]

Demographic information is critical to priority setting for preventive, promotive, curative and rehabilitative health care services and the allocation of resources to meet the needs of the various sectors of the population.

Though urbanization is increased, still there is big bulk residing in rural area. The rural population has to play the equal role in the upcoming India. Thus the present study was undertaken to know the recent scenario of the characteristics of rural population as well as its structure.

MATERIAL AND METHODOLOGY

Data was collected from randomly selected villages of Palus taluka of Sangli district of Maharashtra satisfying criteria of

a village (population <5000) [3] as per census 2011. The selection of villages was done till the total study population size was less than 10,000.

A data collection proforma was developed to collect socio-demographic data from inhabitants of these selected villages.

After availing the permission of respective Grampanchayat, socio-demographic data of each individual was collected by visiting house-to-house during 1st Nov. 2014 to 31st Dec 2015. On 1st Jan 2016 the whole collected data was updated by deleting deaths and adding births and marriages occurred during the period of data collection to get the mid-year total population for study year 1st July 2015 to 30th June 2016 to understand the population structure properly.

The data was analyzed to obtain rates, ratios, proportions by using SPSS version 20.

RESULTS

In all total 10,489 individuals from 7 villages were interviewed for measurement of demographic characteristics. It revealed that there was no significant difference in the proportion of males as well as in females of these 7 villages ($\chi^2 = 3.696$, $p = 0.661$). Sex ratio of total study population was 926 females per 1000 males. (Table 1).

Table 1: Gender and village wise study population.

Village	Gender		Total
	Male	Female	
Andhali	944 (52.5%)	864 (47.8%)	1808
Dahyari	599(51.5%)	565 (48.5%)	1164
Ghogaon	816 (51.6%)	765(48.4%)	1581
Nagrале	1365 (52.6%)	1231(47.4 %)	2596
Navi-Pundi	255(48.8%)	268(51.2%)	523
Pundi	1349 (51.8%)	1256(48.2%)	2605
Shere-Dudhondi	117(55.2%)	95(44.8%)	212
Total	5445 (51.9 %)	5044 (48.1%)	10489

In all study villages there were only Hindus and Muslims. No any other community found in these study villages. Overall these were hindu religious dominating villages ($\chi^2=325.1$, $p <0.001$). However, comparatively lesser proportion of Hindu in a study village Andhali was 87.7%. (Table 2).

Table 2: Village wise religion of study population.

Village	Religion		Total
	Hindu	Muslim	
Andhali	1586(87.7%)	222(12.3%)	1808
Dahyari	1115 (95.8%)	49(4.2 %)	1164
Ghogaon	1522(96.3%)	59(3.7%)	1581
Nagrале	2488(95.8%)	108(4.2%)	2596
Navi-Pundi	511(97.7%)	12(2.3%)	523
Pundi	2570 (98.7 %)	35 (1.3%)	2605
Shere-Dudhondi	212(100.0%)	0(0.0%)	212
Total	10004(96.1%)	485(4.6 %)	10489

The whole study population found to be residing in 1905 families. Amongst these 1170 (61.4%) were joint families and 735 (38.6%) were nuclear families. This large proportion of joint families was formed of the 74.2% of total study population. The mean family size of joint families was 6.7 with SD 2.9 while mean family size of nuclear families was 3.7 with SD 1.2. (Table 3)

More than half (53.9%) of the population was married. Very less (0.3%), but socially as well as culturally important issue, 'divorce' was also observed in the study population. Amongst 4068 unmarried individuals; 2526 (62.1%) were males and 1542 (37.9%) were females. Equal proportion of unmarried males and females i.e. 733 (29%) unmarried males were above 21 years while 438 (28.4%) unmarried females were above 18 years age. (Table 4)

Table 3: Village wise families and persons in joint and nuclear families.

Village	Joint Families		Nuclear Families		Total Families
	No. of Families	No. of persons	No. of Families	No. of persons	
Andhali	216	1313	136	495	352
Dahyari	138	922	70	242	208
Ghogaon	169	1192	107	389	276
Nagrале	294	2048	144	548	437
Navi-Pundi	61	360	39	163	100
Pundi	276	1817	219	788	495
Shere-Dudhondi	19	138	18	74	7
Total	1170	7790	735	2696	1905

Table 4: Marital status of study participants.

Marrital status	No.	Percent
Unmarried	4068	38.8
Married	5654	53.9
Widow	739	7.0
Divorced	28	0.3
Total	10489	100.0

Occupation composition showed that more than 1/4th population was taking the education. Same proportion of housewives was existing in the study population. Amongst males, majority of males (2120, 38.9%) were engaged in agriculture who were usually assisted by small number of housewives (168, 3.3%). Small proportion of individuals (231, 2.2%) was working under category of ‘Daily Wages’. (table 5)

Table 5: Occupation of study population.

Occupation	Number	%
Agriculture	2288	21.8
Business	182	1.7
Retired	60	.6
Daily wages	231	2.2
Service	922	8.8
House wife	2998	28.6
Education	2861	27.3
Children not joined school	513	4.9
Non working	434	4.1

Age-sex structure revealed the high and similar population proportion at 20-30years in males and females; with declining proportion in both directions of this age in males and females (Table 6, Fig. 1). There was more proportion of males than females in the age group below 20 years while above 30 years age; proportion of females was more than males. The narrow bottom of population structure is the indication of population decline. The tapering top indicates sharply declining proportion of individuals with long life in both genders. The population below age 25 years was 38.0%, while below age 30 years it was 47.1% and below age 35 years it was 55.3%. However population with age 65 years and above was only 10.2%. It was observed that in young age group (<15 years) the proportion of males (22%) was more than females (18%) while it was similar in adults (15-59years) but proportion of old females was quite more than old males (60+years) (Table 7).

Table 6: Age wise distribution of males and females.

Age	Male		Female		Total	
	No.	%	No.	%	No.	%
<5yrs	383	7.0	279	5.5	662	6.3
5-10yrs	380	7.0	298	5.9	678	6.5
10-15yrs	435	8.0	331	6.6	766	7.3
15-20yrs	505	9.3	390	7.7	895	8.5
20-25yrs	506	9.3	484	9.6	990	9.4
25-30yrs	510	9.4	455	9.0	965	9.2
30-35yrs	424	7.8	434	8.6	858	8.2
35-40yrs	351	6.4	369	7.3	720	6.9
40-45yrs	364	6.7	379	7.5	743	7.1
45-50yrs	304	5.6	351	7.0	655	6.2
50-55yrs	317	5.8	302	6.0	619	5.9
55-60yrs	260	4.8	212	4.2	472	4.5
60-65yrs	188	3.5	210	4.2	398	3.8
65-70yrs	199	3.7	211	4.2	410	3.9
70-75yrs	130	2.4	147	2.9	277	2.6
75-80yrs	96	1.8	99	2.0	195	1.9
80-85yrs	49	0.9	61	1.2	110	1.0
85-90yrs	37	0.7	21	0.4	58	0.6
90+yrs	7	0.1	11	0.2	18	0.2
Total	5445	100.0	5044	100.0	10489	100.0

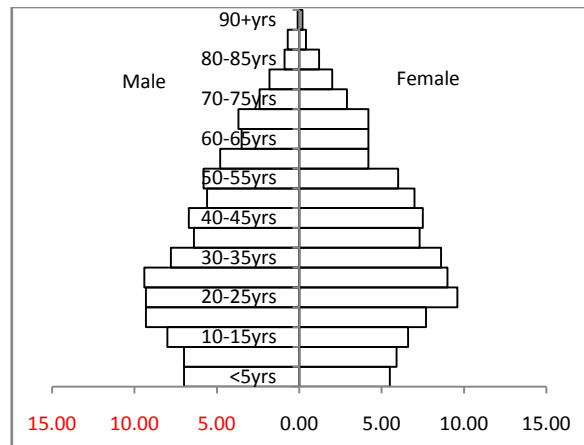


Fig 1: Population pyramid of study population (Original)

Table 7: Dependency ratio of the study population.

Dependent part	Dependency Ratio	Modified Dependency Ratio
Child	28.8%	29.5%
Aged	14.6%	14.9%
Working-Aged	-	2.5%
Total (1+2)	43.4%	46.9%

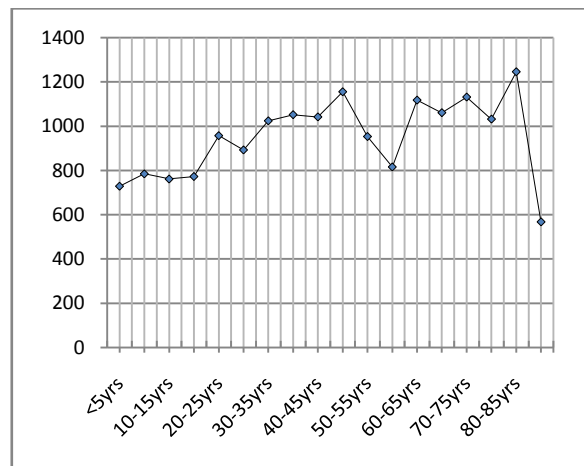


Figure 2: Age-specific sex ratios in study population (Original)

Age-specific sex ratios (Fig. 2) derived from the age wise distribution of males and females depicts that the ratios cannot vary substantially from one age group to the next. However up to 30years of

age; males are more than females with sex ratio 823 females per 1000 males while after 30 years of age; females are equal or more than males with sex ratio 1029 females per 1000 males.

The usual procedure of calculation of Dependency ratios is:

$$\text{Child dependency ratio} = \frac{\text{no. of aged 0 - 14}}{\text{no. of aged 15 - 64}} \times 100$$

$$\text{Aged dependency ratio} = \frac{\text{no. of } \geq 65}{\text{no. of aged 15 - 64}} \times 100$$

$$\text{Total dependency ratio} = \frac{(\text{no. of aged 0 - 14 and those aged } \geq 65)}{\text{no. of aged 15 - 64}} \times 100$$

The child dependency was found to be double than aged dependency. (Table 8). The total dependency ratio 43.9% revealed the high burden in view of their all kind of safeguarding on the working population. It was observed that there were 175 non-working individuals belonging to working age of 15-64years. Subtracting this amount from the denominator the Modified Dependency Ratios may be determined as follows:

$$\text{Child dependency ratio} = \frac{\text{no. of aged 0-14}}{\text{Working no. of aged 15-64}} \times 100 \quad (1)$$

$$\text{Aged dependency ratio} = \frac{\text{no. of } \geq 65}{\text{Working no. of aged 15-64}} \times 100 \quad (2)$$

$$\text{Total dependency ratio} = \frac{\text{No n-working no. of 15-64}}{\text{Working no. of aged 15-64}} \times 100 \quad (3)$$

Total dependency ratio = (1) + (2) + (3)

Table 8: Age category wise males and females.

Age	Gender		Total
	Male	Female	
0-14yrs	1198(22.0%)	908(18.0%)	2106(20.1%)
15-64yrs	3729(68.5%)	3586(71.1%)	7315(69.7%)
65+yrs	518(9.5%)	550(10.9%)	1068(10.2%)
Total	5445(100.0%)	5044(100.0%)	10489(100.0%)

This revealed that after changing denominator and introducing one new dependent part 'Working-Aged', the total dependency ratio increased by 3.5%.

Apart from 13% of uneducated population (Illiterate + non-schooling), remaining (87%) were literate. The term non-schooling indicates population below 6years which is expected to join school in future. More than 50% population found educated up to SSC.

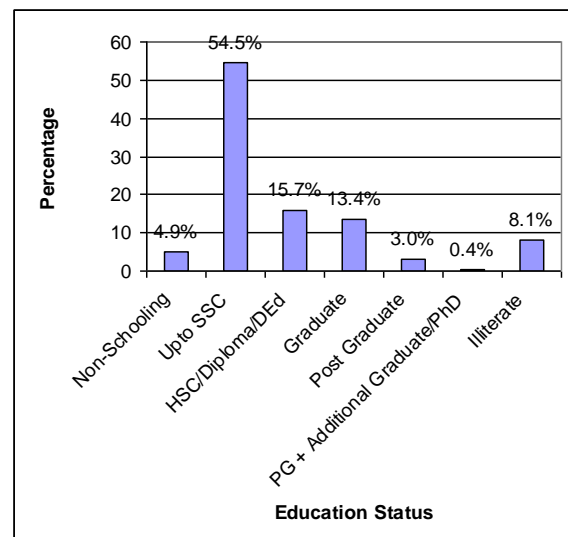


Fig 3: Educational status of study participants (Original)

DISCUSSION

Since 1901 to 2011, it is observed that rural population is gradually declining.

This may be because of increased level of education or less attitude towards farming. As per 2011 census sex ratio of rural India was 947 females / 1000 males. In present study the less sex ratio, 926 females/1000 males, may be the result of termination of female fetuses in expectation of male fetuses. However, this imbalance is reflecting on the marriages of male youths. The peaks and troughs in age-specific sex ratios reflect changes in sex differentials, which may be the outcome of cohort mortality pattern, sex-selective undercounts or age-misreporting. [4] High proportion of joint families is the sign of Indian culture. This is the bench mark of development of families and hence of each family member. The word 'development' means 'progress' in view of economy of the family, social relations and responsibilities leading to prestige in the society, lifestyle etc. are presently reducing family sizes. This may be the cause of less sex ratio. The high proportion of individuals working in agriculture indicates agriculture dependent rural economy.

About half of the total study population (47.1%) with age below 30 years implies rural population is becoming very young. This scenario is observed in most of the low and middle income countries. This usually indicates a high fertility rate and therefore a greater need for reproductive health programs and infant and child health services. [1,5] However, increase in young population proportion in any country is hazardous in all respects. Various researchers have noticed that countries with 60% or more younger population, age ≤ 30 , has experienced civil conflicts. [6,7] On the contrary, the balanced age structures increases chances for peace and prosperity. [8] According to SRS data, [9] rural population structure of India for year 2015 was 28.9%, 62.9% and 8.3% for 0-14years, 15-59years and 60+years respectively. This revealed that in comparison to the present study it was high for age group 0-14years (20.1%), similar to 15-59years (65.9%) while less for 60+years (14.0%). This

indicates declined birth rate as compared to national rate. The high Illiteracy in the present study (8.1%) may be because literacy in the present study has assessed on the basis of formal education.

The total dependency ratio observed in the present study (43.9%) was less than the estimated total dependency ratio of whole India (52.4%) [10] entails heavy burden on productive part of the study population. Gradually falling dependency ratio revealed India is in demographic transition phase. [11] Dependency ratio less than 40% will reveal the all round improvement of the nation. The working age population (15-64years) observed in the present study (69.6%) is slightly more than as per census data 2011 (63.4%). This is indication of socio-cultural and financial progress. Countries with a higher proportion of older people require a proportionately greater investment in health services for the aged, catering particularly for the chronic non-communicable diseases (NCDs) prevalent in later life. [1] However, only one tenth of aged proportion in the present study discloses less investment to be required for their health services.

CONCLUSION

The overall scenario of the study population reflected typical Indian rural population. The low sex ratio indicated need of up gradation to balance the social factors. High dependency ratio implied high burden of child age, old age and non-working population on working-age population in view of their survival and health. However, the population structure inferred the declining population in rural area.

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How to cite this article: Patil NS, Kore BG, Kakade SV. Demographic profile of rural population from western Maharashtra of India. *Int J Health Sci Res*. 2018; 8(7):265-270.
