Socio-Demographic and Proximate Determinants of Adolescent Pregnancies in India

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Introduction

- Pregnancy and childbearing among adolescents have become a relevant health and social issue during the past few decades in both developed and developing countries.

- Every day, 20,000 girls below age 18 give birth in developing countries. Births to girls also occur in developed countries but on a much smaller scale (UNFPA, 2013).

- Adolescent pregnancies are the consequence of inter-locking factors, such as widespread poverty, communities and families acceptance of child marriage and inadequate efforts to keep girls in school.

- The proximate determinants of adolescent pregnancy are :
  - Age at marriage
  - Age at first sexual intercourse
  - Unmet need for family planning
  - Contraception

Objectives

The objectives of the study are :

- To investigate the levels and determinants of adolescent pregnancies in India

- To study the decadal variations in proximate determinants of adolescent pregnancy in the country using the latest rounds of National Family Health Survey data.

Data Source

- The data used in this study has been taken from the third and fourth rounds if National Family Health Survey conducted during 2005-2006 & 2015-2016.

Outcome Variables: The outcome variable used in this study is whether the women in age group 15-19 have begun child bearing or not.

Predictor Variables: Various demographic and socio-economic characteristics such as age, place of residence, educational level, religion, social status, marital status wealth index and region which is found to be associated with the adolescent pregnancy in previous literatures is taken as explanatory variables.

Methodology

- In the first stage of statistical analyses socio-demographic differentials of adolescent pregnancies were assessed by background characteristics.
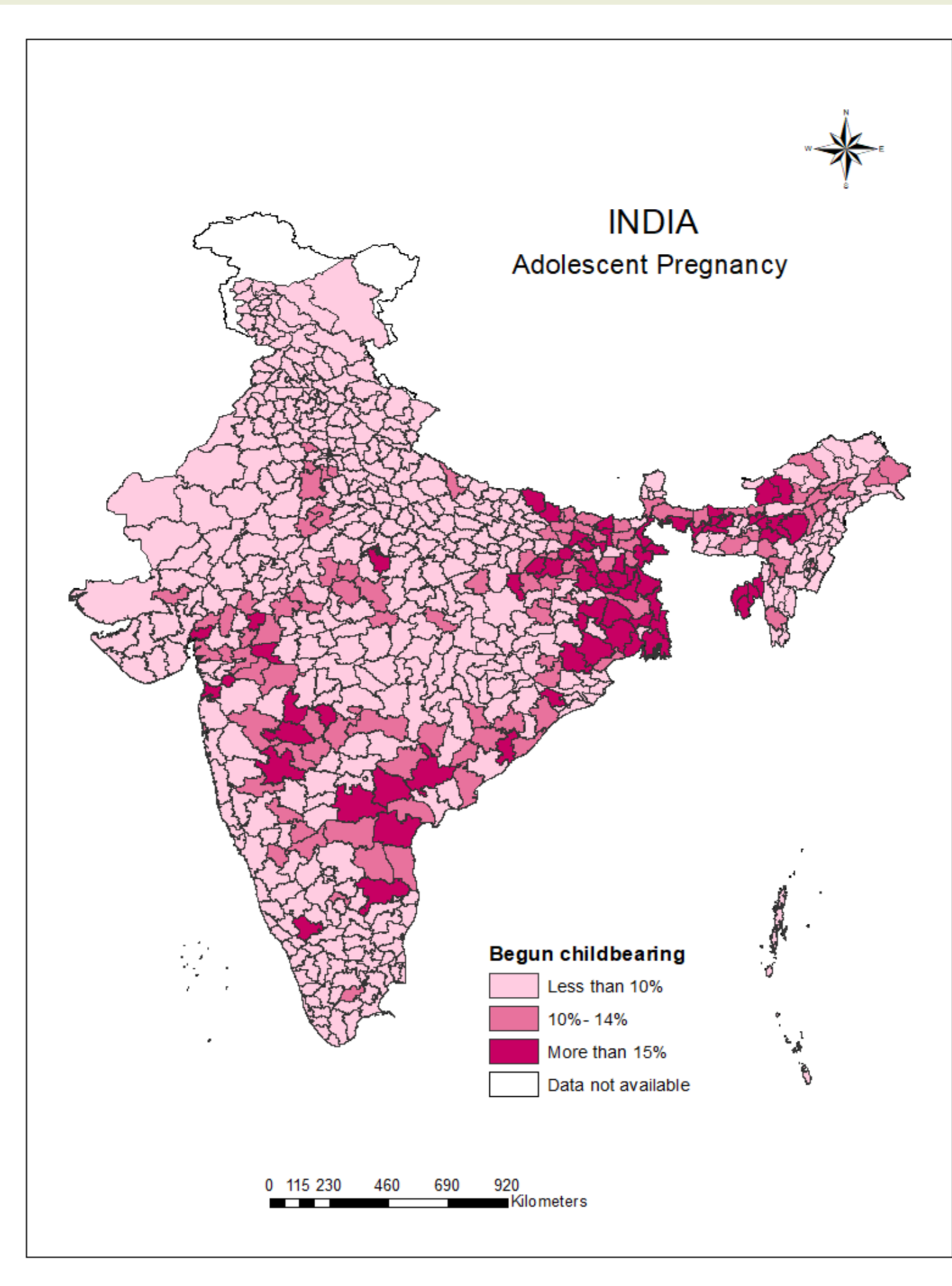
- Then, the association of socio-economic determinants with adolescent pregnancy is estimated using binary logistic regression. In logistic regression model, the function is written as

$$Log\left(\frac{p}{1-p}\right) = Log\left(\frac{a}{b}\right) = \beta_0 + \beta_1 x_1 \ldots + \beta_k x_k \qquad (a1)$$

Where p is the probability of interested outcome and x is the explanatory variable and $\frac{a}{b}$ is the odds of success and the OR estimated of a given covariate X_i is $e^{\beta i}$.

Results

- The results of the study revealed that 7.92% of the women in age group 15-19 have begun childbearing, which include 5.19% women who have a live child and 2.73% women who are pregnant with their first child.

- Adolescent pregnancy is relatively high in rural areas. Nearly, 1 in every 10 women in rural areas in the age group 15-19 has begun childbearing.

- The level of teenage pregnancy decreases with an increasing level of education. Twenty per cent of women age 15-19 with no schooling have already begun childbearing

- Adolescent childbearing is higher among scheduled tribe women (11%) than the other groups.

- One in every 2 married adolescent women has begun childbearing.

- The age at marriage is increasing over time and the proportion of women getting married before the legal age at marriage is declining over the time. The median age at marriage among married women in 15-19 age group and 20-24 age group increased from 16.33 and 17.83 to 17.14 and 18.67 in past decade.

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Map-1 Prevalence *of adolescent pregnancy by districts in India*

- The percentage of women getting married below age 15 is reduced to half from 20.77 in 2005-2006 to 10.39 in 2015-2016. There is a prominent decline of 17% in the proportion of women aged 20-24 who is married before age 18 in the past decade.
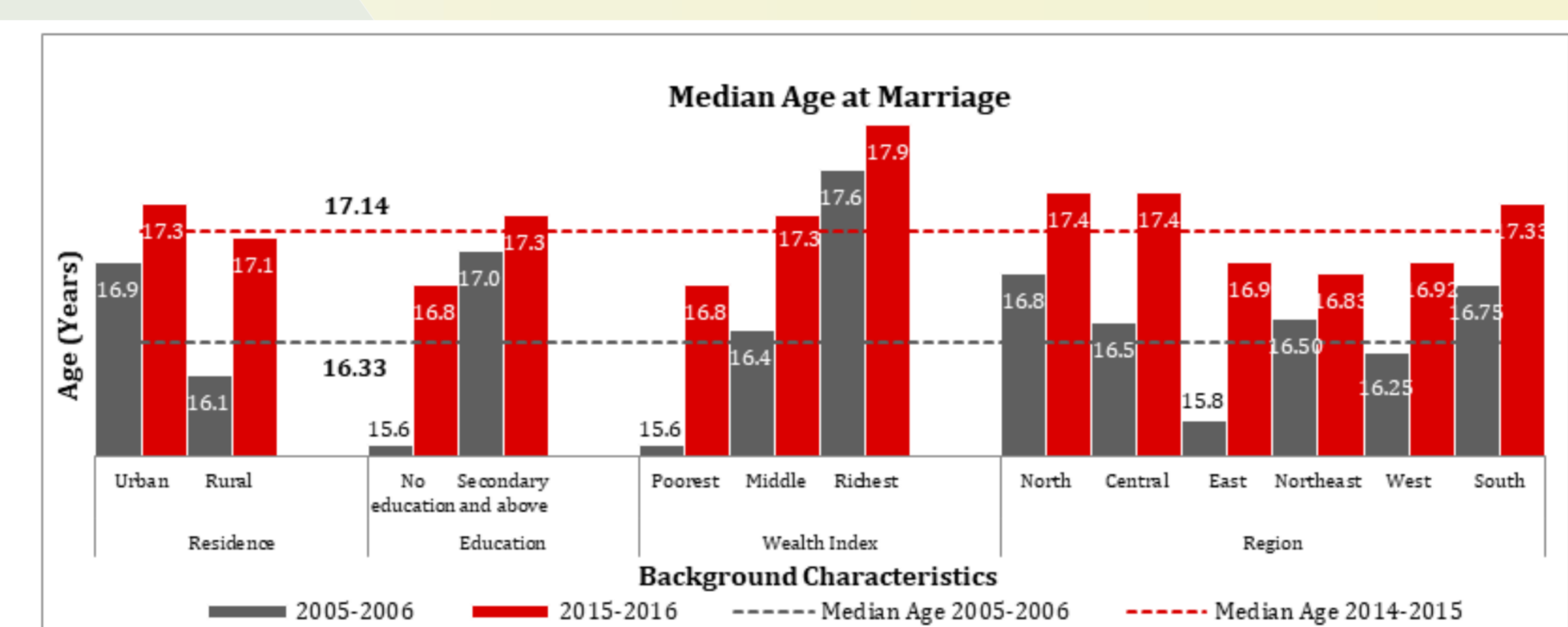
Figure-1 *The median age at marriage of ever married adolescent women by selected background characteristics in India 2005-2006 & 2015-16*
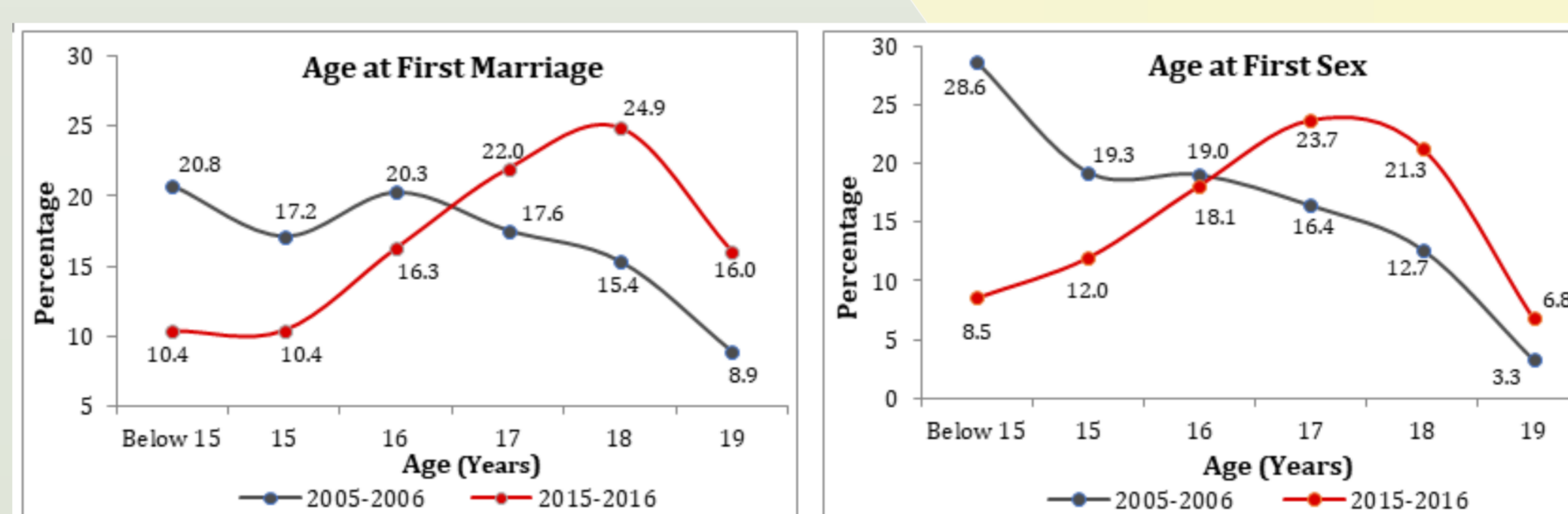
Figure-2 *The percentage of ever married adolescent women by age at marriage in India 2005-2006 & 2015-16*
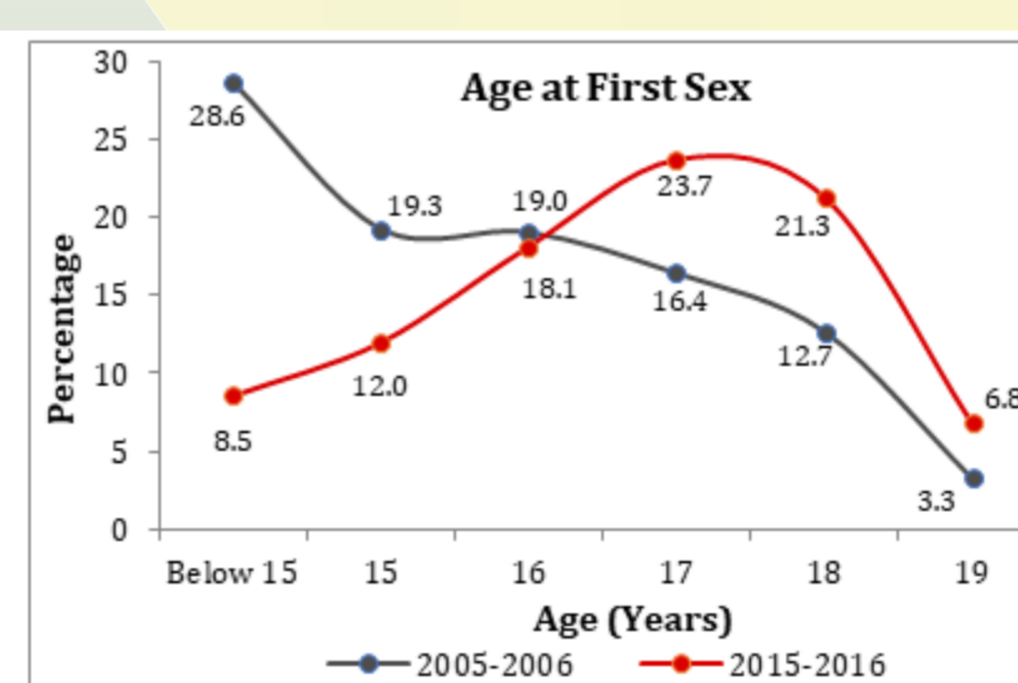
Figure-3 *The percentage of adolescent women by age at first sex, India 2005-2006 & 2015-16*

Table-1 Adolescent women aged 15-19 who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing and adjusted odds ratio by background characteristics, India, 2015-16

Background characteristics	Women age 15-19 who: Have had a live birth (%)	Women age 15-19 who: Are pregnant with first child (%)	Women age 15-19 who have begun childbearing (%)	Adjusted Odds ratio	Confidence interval (95%)	Sample
Age						
15®	48 (0.20)	67 (0.27)	114 (0.47)	1		24581
16	170 (0.69)	182 (0.74)	352 (1.44)	1.33	[1.04,1.70]	24468
17	559 (2.40)	440 (1.89)	999 (4.29)	2.30***	[1.84,2.89]	23305
18	1995 (7.38)	1265 (4.68)	3259 (12.07)	3.07***	[2.48,3.82]	27011
19	3533 (15.92)	1371 (6.18)	4904 (22.10)	5.30***	[4.27,6.58]	22188
Residence						
Urban®	1206 (3.26)	642 (1.74)	1848 (5.00)	1		36932
Rural	5099 (6.03)	2681 (3.17)	7780 (9.19)	0.84***	[0.78,0.92]	84620
Education						
No education®	1169 (14.07)	512 (6.16)	1681 (20.23)	1		8311
Primary	831 (9.78)	397 (4.68)	1228 (14.45)	0.94	[0.84,1.05]	8495
Secondary and above	4304 (4.11)	2415 (2.31)	6719 (6.41)	0.88**	[0.80,0.96]	104746
Religion						
Hindu®	4842 (5.05)	2608 (2.72)	7450 (7.77)	1		95862
Muslim	1183 (5.94)	609 (3.06)	1792 (9.00)	1.39***	[1.28,1.52]	19918
Christian	111 (4.65)	42 (1.76)	153 (6.41)	1.67***	[1.28,2.18]	2391
Others	169 (4.99)	64 (1.90)	233 (6.90)	1.31*	[1.07,1.61]	3381
Caste/tribe						
Scheduled caste	1489 (5.75)	780 (3.01)	2269 (8.76)	1.09	[1.01,1.18]	25911
Scheduled tribe	877 (7.56)	346 (2.98)	1224 (10.54)	1.14*	[1.03,1.26]	11609
OBC®	2377 (4.40)	1422 (2.63)	3799 (7.03)	1		54029
Others	1561 (5.20)	775 (2.58)	2337 (7.79)	1.25***	[1.15,1.36]	30003
Marital Status						
Never married	15 (0.01)	16 (0.02)	31 (0.03)	0.004***	[0.003,0.005]	102840
Currently married®	6223 (33.65)	3301 (17.85)	9523 (51.50)	1		18493
W/D/D/S	66 (30.31)	7 (3.28)	73 (33.59)	0.40***	[0.30,0.54]	219
Wealth Index						
Poorest	1767 (6.99)	910 (3.60)	2677 (10.60)	2.46***	[2.13,2.84]	25257
Poorer	1953 (7.13)	957 (3.50)	2910 (10.63)	2.33***	[2.03,2.67]	27378
Middle	1448 (5.57)	721 (2.77)	2169 (8.34)	2.11***	[1.84,2.41]	25999
Richer	853 (3.65)	523 (2.24)	1376 (5.89)	1.55***	[1.35,1.78]	23379
Richest®	284 (1.45)	212 (1.09)	496 (2.54)	1		19540
Region						
North	460 (2.85)	300 (1.86)	760 (4.71)	1		16117
Central	943 (2.70)	696 (1.99)	1639 (4.70)	1.04	[0.92,1.18]	34891
East	2605 (8.94)	1311 (4.50)	3916 (13.44)	1.44***	[1.28,1.61]	29142
Northeast	378 (9.33)	138 (3.41)	516 (12.74)	1.87***	[1.55,2.25]	4049
West	854 (5.38)	364 (2.29)	1218 (7.67)	1.19*	[1.04,1.35]	15876
South	1064 (4.96)	515 (2.40)	1579 (7.35)	1.53***	[1.35,1.73]	21477
Total	6304 (5.19)	3324 (2.73)	9628 (7.92)			121552

Note: W/D/D/S - Widowed/divorced/separated/deserted; ®Reference category; *** p<.001, ** p<.005, *<0.010
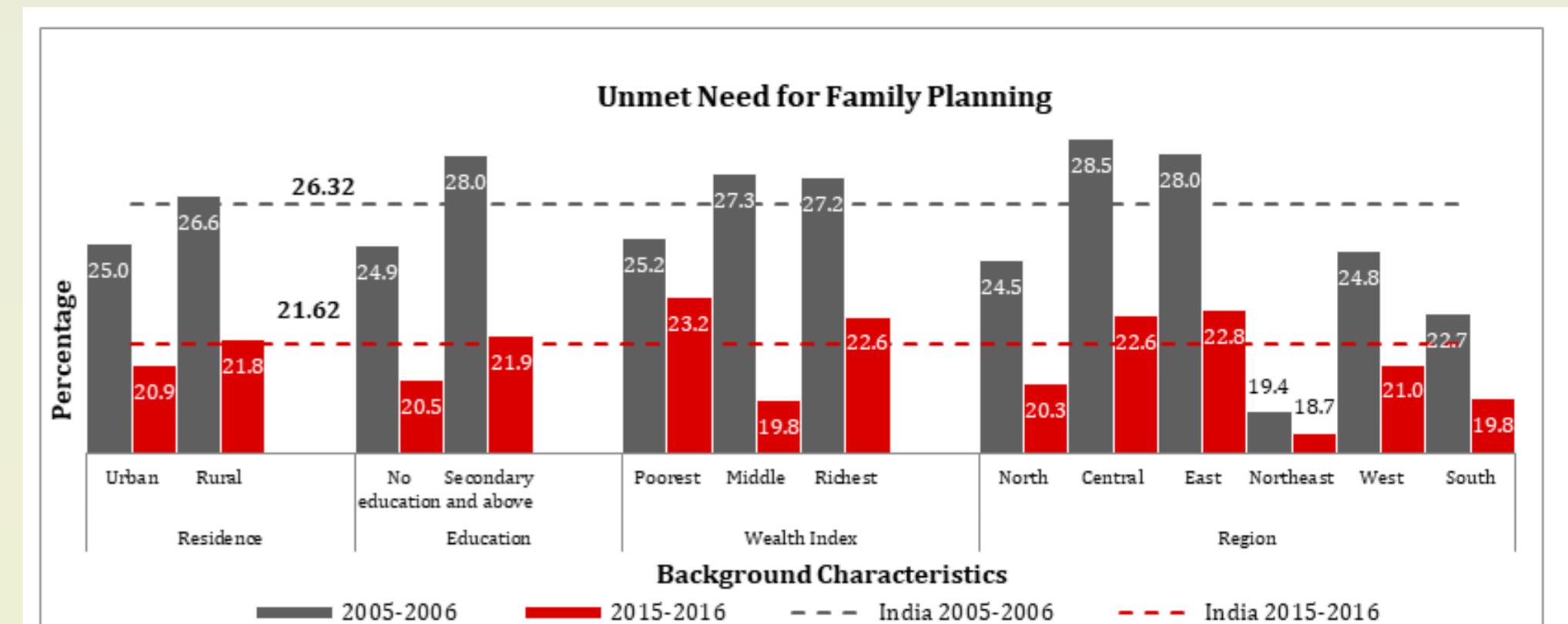
Figure-4 *The percentage of ever married adolescent women who have an unmet need for family planning by selected background characteristics in India 2005-2006 & 2015-16*

- The results of age at first sexual intercourse shows a high resemblance with the results of age at first marriage which shows that the age at first sexual intercourse is identical to the median age cohabitation.
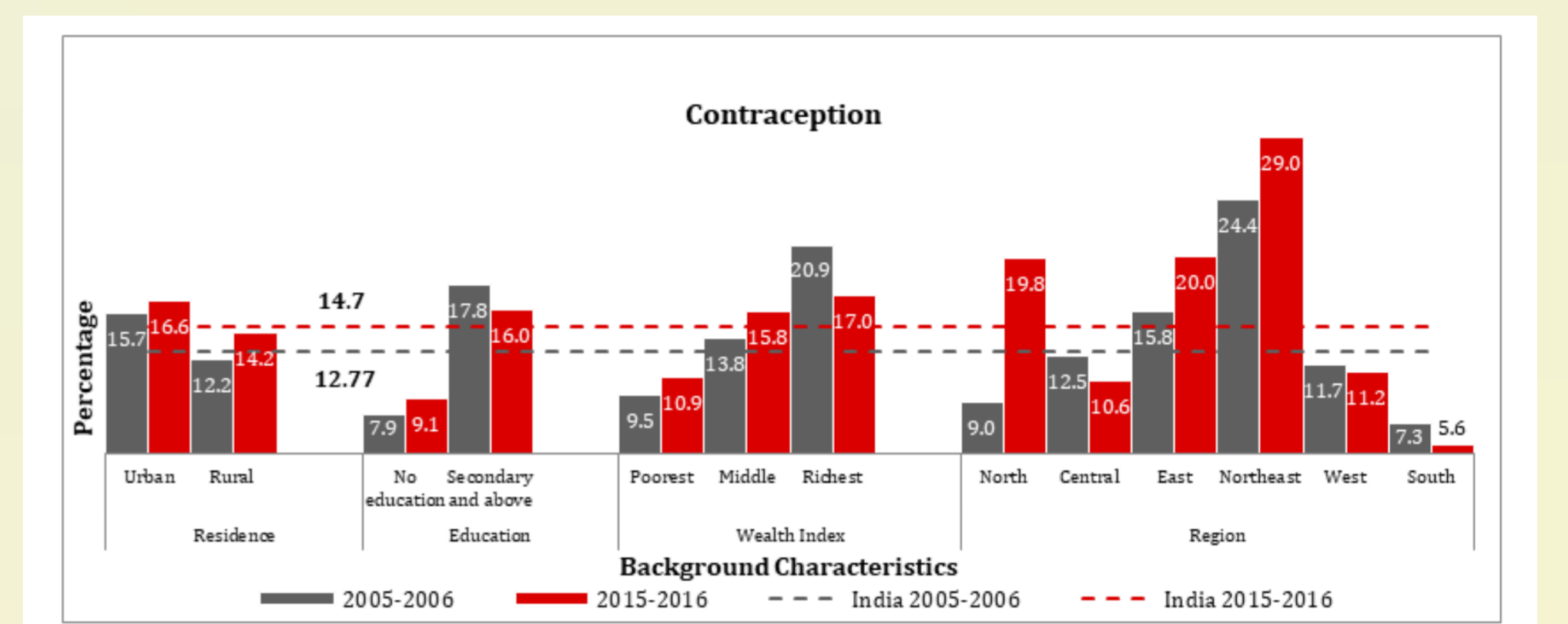
Figure-5 *The percentage of ever married adolescent women who are using any form of contraceptive method by selected background characteristics in India 2005-2006 & 2015-16*

- The unmet need for family planning services is high among adolescents compared to women of other age groups. Around one-fourth of currently married adolescent women have an unmet need for family planning.

- The use of contraception among married adolescent has marginally increased in the past decade from 12.7% in 2005-2006 to 14.70 per cent in 2015-2016.

Discussion and Conclusions

- This study provides evidence for a call for action in the form of policies and programmes to accelerate the prevention of adolescent pregnancy and provide adequate support to adolescents who have currently begun childbearing.

- The girls most likely to be pregnant in the adolescence reside in rural and remote areas, have little or no education, and live in the poorest households.

- The persistent traditions in favour of early marriage and motherhood, poverty, social exclusion and tough economic realities are the major impediments to the efforts made to reduce adolescent pregnancy in India.

- Knowledge and awareness about the consequences of adolescent pregnancies need to be disseminated among adolescents. Beyond information on reproduction and contraception, the sex-education should be widened to include discussion of social standards, taboos and beliefs.

- Programmes and policies should target to improve access and the quality of formal education for girls, especially at the post-primary and secondary levels; build up girl's economic, health and social assets; seek to change social norms that devalue girls; and reduce the social pressures on families to marry off their girls at early ages.

Funding and Competing Interests

- This research received no specific grant from any funding agency, commercial entity or not-for-profit organization.

- The author has no conflicts of interest to declare.

Ethics Statement

- This research used a publicly available secondary data source (NFHS), without any identifiers, available in the public domain on the following website:

  https://dhsprogram.com/data/available-datasets.cfm.

  All procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. .