The interplay of socioeconomic status in unplanned pregnancies in India

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Abstract

Unplanned pregnancy is a public health concern worldwide, which has negative impacts on the health, education, and income of the associated family. There exists wide disparities in unplanned pregnancy based on socio-economic status. However, fewer studies have tried to analyze the differential impact of social identity and economic class. This research investigates the association between socioeconomic status and unplanned pregnancy. Specifically, the study explores whether social identities such as caste and religion significantly affect unplanned pregnancy or it is completely determined by economic factors such as wealth and education.

The research has used the fifth round of National Family Health Survey (NFHS) data on currently pregnant women in India. The study has used multivariate logistic regression analysis to predict the unplanned pregnancy of women based on-(i) Social and economic status (ii) Demographic factors, and (iii) Geographical factors.

The findings of the study suggest that the richest women are 3.5% significantly less likely to experience unplanned pregnancy compared to the poorest. Women in 20-24 & 25-29 age groups are 2.3% and 4.1% significantly less likely than the 15-19. Birth order and geographical location are also significant key predictors of unplanned pregnancy. Conversely social status, such as Caste and religion doesn't have a significant impact on the unplanned pregnancy of a woman. However, age, wealth, education, region, and sector significantly determine the unplanned pregnancy of the women.

Keywords: Fertility, Family Planning, Social Identity, Economic Class.

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1 INTRODUCTION

"No woman can call herself free until she can choose consciously whether she will or will not be a mother."—Margaret Sanger

India has emerged as the most populous country surpassing China. With a population of 1.4 billion, India is home to around 18 percent of the global population. [1] The Indian economy has also progressed in the post-reform period and is still the fastest growing major economy in the world. [2] The economic growth has resulted in rising income leading to better living and health standards and a sharp decline in Infant Mortality Rates.

However, critics have highlighted that due to unequal distribution of growth, decent economic growth has not resulted in corresponding satisfactory levels of human development.[3] The Indian economy has a high level of income and health inequality which is perpetuated by the highly privatized and low public spending on health and education. [4] Thus, the health indicators are particularly worse for the poor households in India.

This paper explicates the prevalence and role of socioeconomic status in Unplanned or Unintended pregnancy, which is a major health and social issue in India and around the globe. It is vital for understanding fertility behavior and an important factor in the bodily autonomy of individual women. It has a negative impact on the education, economic, and health consequences for the mother, child as well as family, and the nation. Due to the lack of prenatal and neonatal care, the health of both women and children are adversely affected and at worst ends in mortality. Thus, the reduction of unplanned pregnancies in a nation has vital significance in the fall in fertility rate as well as other health and social benefits.

Social identities such as religion and caste influence educational and labour market outcomes. Using the latest round of the National Family Health Survey (NFHS), 2019-21 dataset and exploiting logistic regression analysis, this study finds no stark difference in the prevalence of unplanned pregnancy among different social groups. However, wealth, education, age, and geographical location are the key determinants of the unplanned pregnancy.

2 LITERATURE REVIEW

The main objective of family planning is to avoid unintended pregnancy. An unintended pregnancy is defined as a pregnancy that is either unwanted (occurs when no more children are desired) or mistimed (occurs earlier than the desired time). It is irrespective of whether contraceptives were used or not. Unintended pregnancy reflects the bodily autonomy or control of a woman on her pregnancy. It is also critical to understand fertility behavior as well as the unmet needs of contraception (Santelli et al., 2003).

The State of World Population Report 2022, with a special focus on unintended pregnancies, observes that nearly half of all pregnancies (around 121 million each year) are

[1] India overtakes china- Guardian

[2] www.worldbank.org/en/country/india/overview

[3] See Dreze and Sen (2013)

[4] What the latest National Health account figure say about India's healthcare sector

unintended globally. More than one in seven of these cases occur in India. There is a divergence in the trend between developed and underdeveloped countries especially in pregnancy outcomes. The difference is largely because of differences in educational level, knowledge of family planning and access to contraceptives (Funds, 2022).

The unintended pregnancy has health, social, and economic consequences for the infant, women, and their families. It is a major public health issue adversely affecting maternal as well as child health. As 60 percent of such cases end in abortion which in the absence of proper healthcare facilities causes severe complications and at worst maternal, neonatal, and infant deaths (Singh, Chalasani, Koenig, & Mahapatra, 2012). The World Health Report (2005) has emphasized unintended pregnancy as a common cause of maternal mortality (Organisation, 2005).

Some studies suggest that unwanted pregnancies lack antenatal and postnatal care. There is also a difference in place of delivery, child immunization, and even breastfeeding (Marston & Cleland, 2003) (Dye, Wojtowycz, Aubry, Quade, & Kilburn, 1997). Consequently, it also affects child care. As a result, the infant is born with poor health and thus more vulnerable to mortality. Furthermore, it has an adverse impact on the education of the child (Myhrman, Olsen, Rantakallio, & Laara, 1995).

There is no dearth of literature on the socio-economic and demographic factors influencing unintended pregnancy. Some studies have found that female literacy, wealth of household, region, and even caste significantly influence unmet needs for family planning in married women (Barman, 2013).

Education is an important influencing factor in unintended pregnancy as the educational level of either a woman or her husband or both rises, unintended pregnancy decreases. The wealth is a key determinant as it affects education as well as exposure to mass media and access to healthcare facilities including Contraceptives. Some recent studies in India have found wealth status as one of the major determinants of unintended pregnancy and its role is also increasing (Anand, Mondal, & Singh, 2023).

The social identities don't seem to be playing much role in the pregnancy intention. There are some micro level studies (Devkota, Clarke, Shrish, & Bhatta, 2018) which suggest a negligible role of social identity particularly caste in shaping pregnancy intention in Nepal. However, there is not much literature dissecting social and economic factors on unplanned pregnancy. Some researchers have also suggested non-socioeconomic factors like domestic violence, particularly Intimate Partner violence (IPV) as a major cause of unintended pregnancy (Shabnam & Mukherjee, 2013).

It is also important to note that there is a concern on the measurement of unintended pregnancy. Some studies have unraveled that it is subject to Post-facto rationalization which leads to an incorrect reporting of pregnancy intention. It is a behavioral pattern of parents to report children as wanted while they were originally conceived as unwanted. This phenomenon also depends on the better birth outcome and traits of the born child including sex (Rosenzweig & Wolpin, 1993). To avoid this problem of underestimation, many studies have limited their sample to the currently pregnant women only (Dutta, Shekhar, & Prashad,

2015).

3 DATA AND METHODOLOGY

3.1 Data Source

The study analyzes the fifth round of National Family Health Survey (NFHS) data. NFHS provides large-scale, nationally representative, and longitudinal data on Health, Population, and Nutrition for India and its states. The fifth round survey was conducted in two phases, starting from June, 2019 and completing in May 2021.

The NFHS-5 covered a representative sample of 636,699 households, out of which 724,115 women aged between 15-49 years and 101,839 were men aged between 15-54 years and children with the age less than 60 months were 223,920. The number of births was 1,274,250 in the survey.

3.2 Sample Selection

To avoid underestimation because of ex-post rationalization, the study has restricted the sample to currently pregnant women. The number of currently pregnant women in the survey is 28,408 out of them mistimed and unwanted pregnancies constitute 6.69 and 3.95 percent respectively, which together is 10.65 percent of unintended pregnancies among the currently pregnant women.

3.3 Outcome Variable

The outcome variable intended to be used in this study is 'pregnancy intention of the current birth'. It is captured by the questions 229 and 230 in the women's questionnaire. The women were asked, 'When you got pregnant, did you want to get pregnant at that time?' The responses included "then," "later," or "not at all." Women who did not want their last birth or wanted later were considered unplanned or unintended pregnancy (Unwanted plus Mistimed Pregnancy).

Thereafter, a binary variable for the unintended pregnancy would be created with "1" as yes and "0" as no. In addition to this, a similar analysis has been done on both Unwanted pregnancies which takes 1 for yes and 0 for Planned and Mistimed Pregnancies.

3.4 Dependent Variables:

Wealth Index, Highest Education level of women, Age of Women in group, Religion (Hindu Muslim and Others), Caste (SC, ST, OBC, and Others), Geographical location (North, South, East, West, and Northeast), and the Place of residence (Urban and Rural)

3.5 Methodology

A binary logistic regression would be used to examine the determinants of unintended pregnancy.

$$logitp_i = ln(p_i/1 - p_i)$$

$$bo + b_1x_1 + b_2x_2 + ... + b_nx_n$$

$$b_0, b_1, b_2, ...b_n$$

are coefficients of the explanatory variables.

The Average Marginal Effects (AMEs) have been used for the interpretation as log odds are not intuitive. Marginal effects are a way of presenting the results as differences in probabilities with respect to a reference or base category.

4 RESULTS

4.1 Socio-Economic Characteristics and Family Planning Status

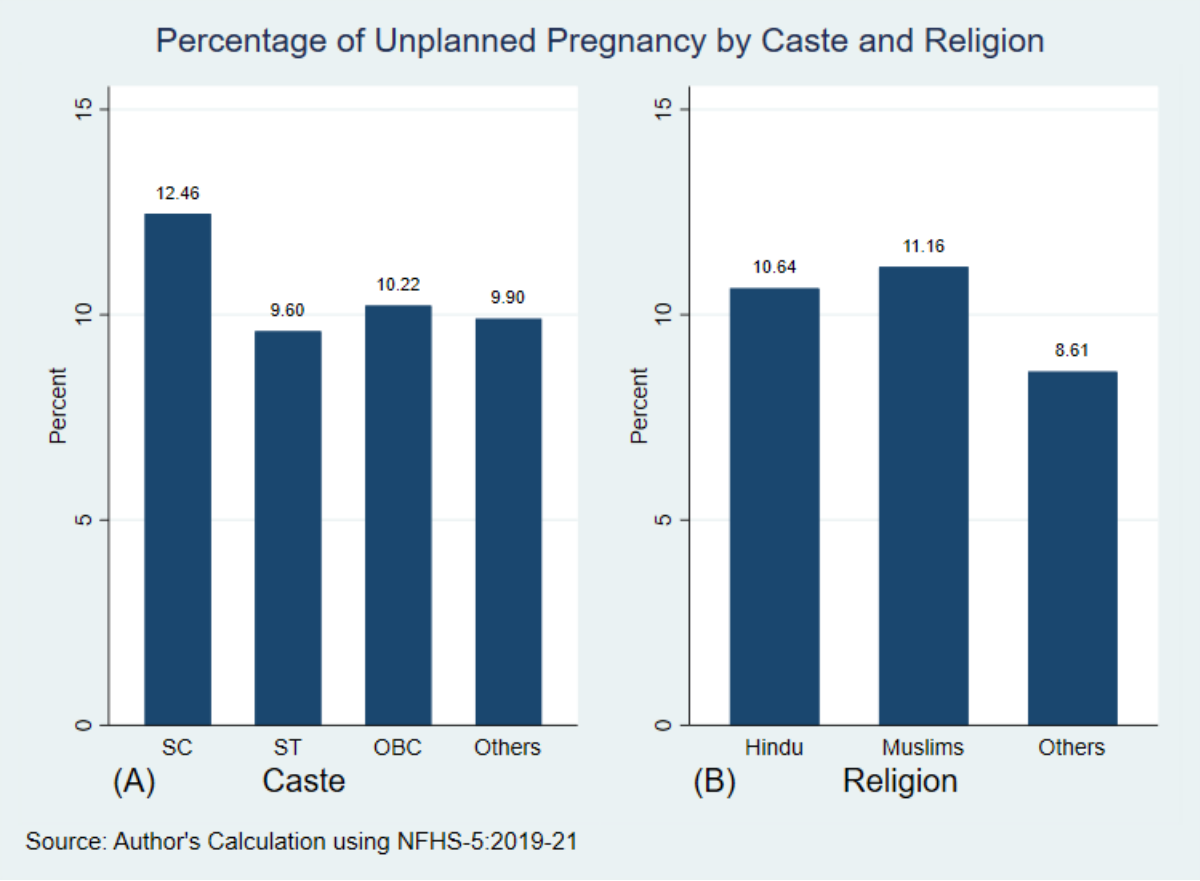

Figure 1: Unplanned Pregnancy by Caste and Religion

The panel A of the Figure 1 shows a weak association between Caste and Unplanned Pregnancy. The rates of unplanned pregnancy is highest for SC (12.46%) and surprisingly ST(9.6%) women are even better than OBCs (10.22%) and Others (9.9%) or upper castes.

On the other hand, panel B shows that unplanned pregnancy is highest for Muslim women (11.16%) and lowest for women belonging to other religions (8.61%). While (10.64%) of the women belonging to the Hindu religion have unplanned pregnancies.

The left panel of Figure 2 shows the prevalence of unplanned pregnancy in each religion by caste. It shows that the Hindu SC (11.16%) has the highest prevalence of unplanned pregnancy followed by Upper Caste Muslims have higher unplanned pregnancies. The association between caste within each religion and unplanned pregnancy gets baffling, wealth makes it clearer in the right panel. We see that the Poorest or the Poorer have consistently the highest level of unplanned pregnancy within each religion, and the most stark difference is in the Muslims.

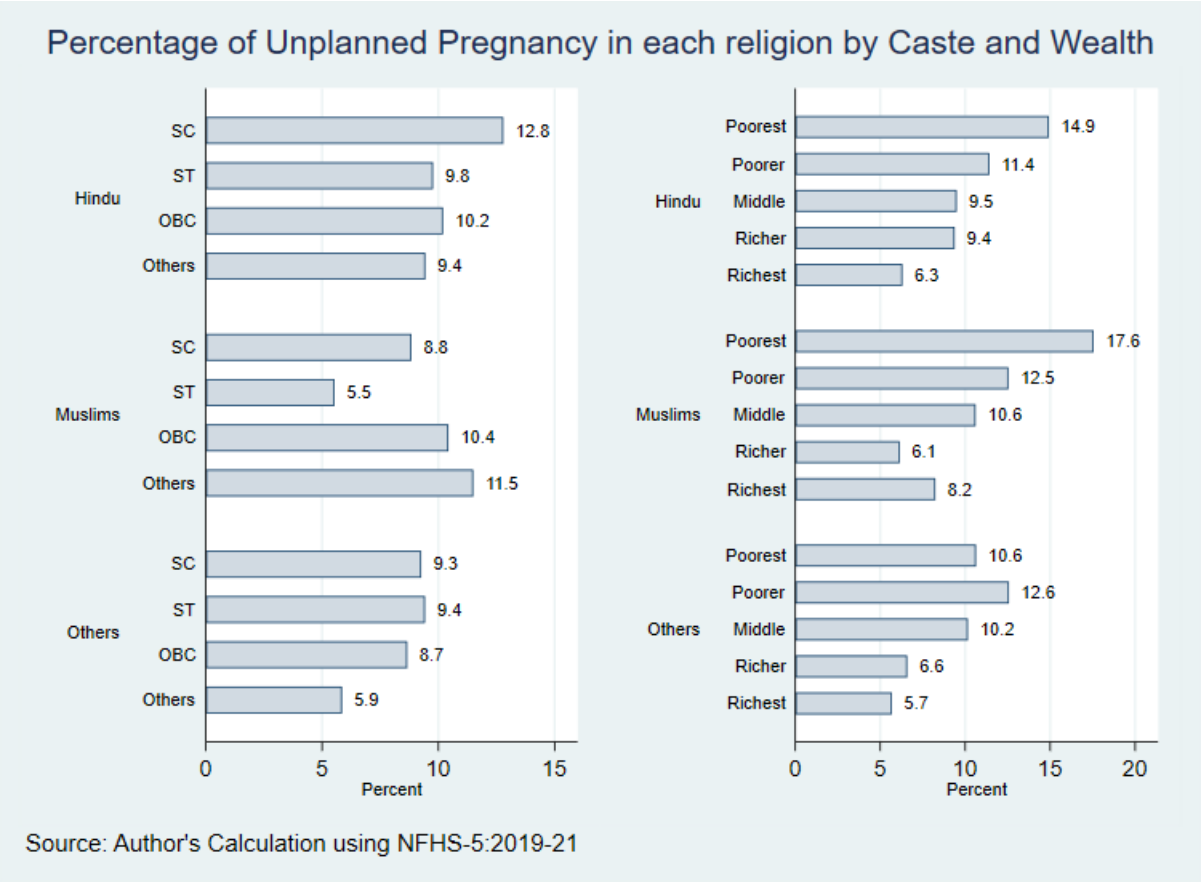

Figure 2: Unplanned Pregnancy in each religion by caste and religion

The panel A of the Figure 3 shows a strong association between Poverty and Unplanned Pregnancy. It is evident from the graph that the rates of unplanned pregnancy is lower among the richest Households as compared to the poorer households, from 15.23% in the poorest to 6.59%.

On the other hand, panel B shows that unplanned pregnancy is highest for women having primary education with 15.28% even higher than illiterate women. This could be mainly because of higher reporting by women with at least some primary-level education. There is a sharp decline in the percentage for women with Secondary education and further declines to 6.12% for women with higher education.

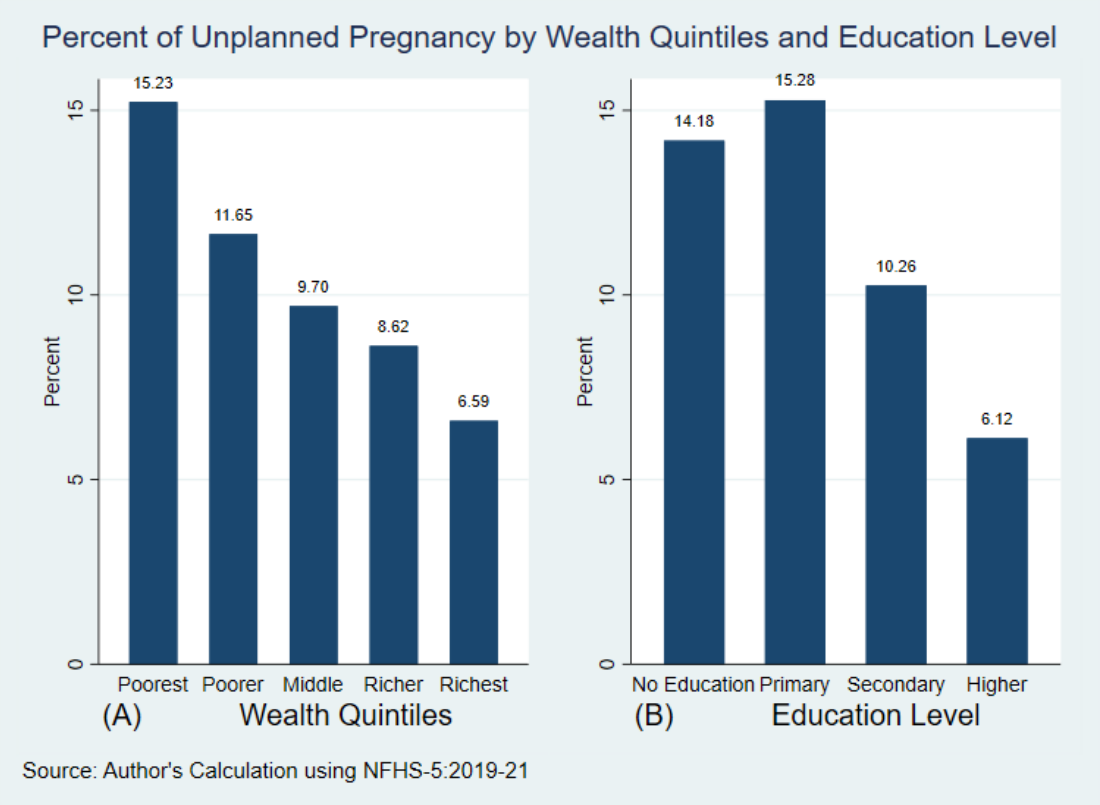

Figure 3: Unplanned Pregnancy by Wealth Quintiles and Education Levels

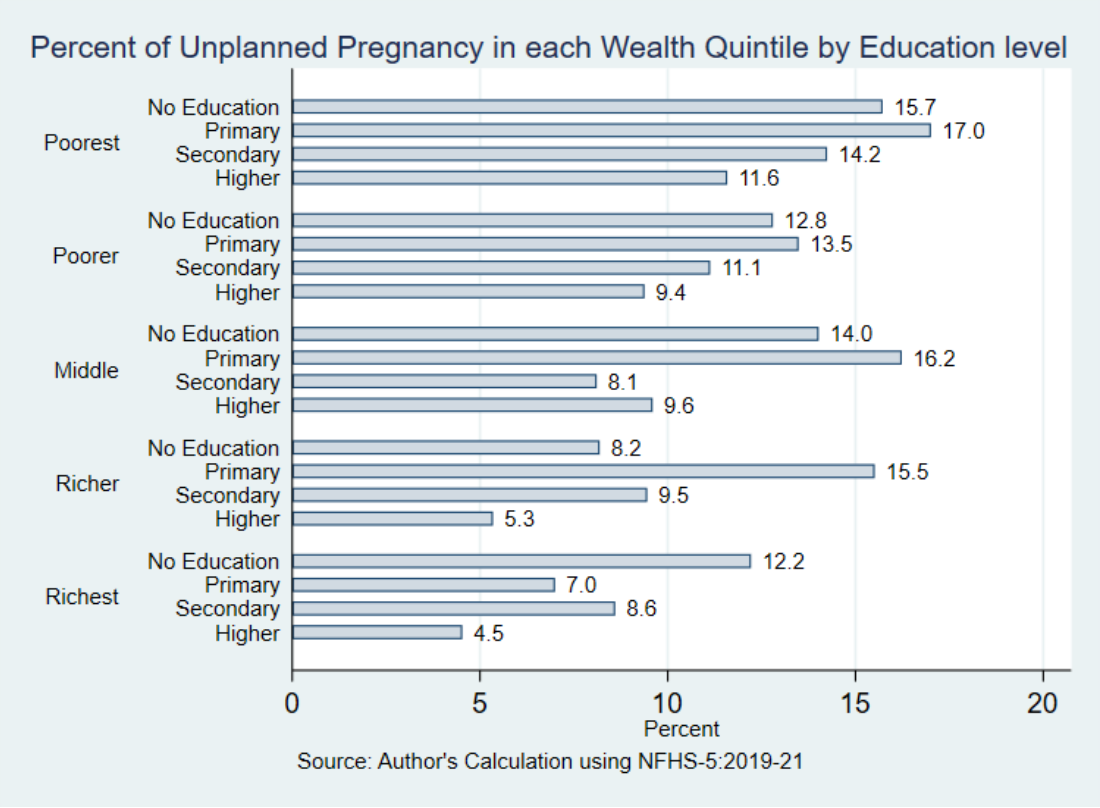

Figure 4: Unplanned Pregnancy and Wealth Quintiles by Education levels

The Figure 4 shows the percentage of unplanned pregnancy in each wealth quintile by

Educational levels. The overall trends in education (in the above figure) persist within each wealth quintile. The percentage of unplanned pregnancies for women with higher education is 11.6 % belonging to the Poorest quintile vis-a-vis 4.5 % for the richest quintile.

4.2 Descriptive Table

The Table 1 shows the prevalence and association of Planned, Mistimed, and Unwanted Pregnancies with the background characteristics by Frequency and Percentage.

The lowest percentage of planned pregnancies (83%) is observed among women aged 35-39, while the highest percentage (90%) is seen among women aged 25-29. The proportion of both unwanted and mistimed pregnancy is lowest among women having higher education levels. It is interesting to note that there is a slight decrease in the rate of unwanted pregnancies when comparing women with no education to those with primary education, possibly indicating a greater awareness of birth planning among the latter group. Overall, there is a strong association between women's education and planning status of birth. The proportion of mistimed pregnancy among women in the richest quintile is almost half that of the women in the poorest quintile. The proportion is one-sixth for unwanted pregnancy between the same groups.

In terms of social identities, religion, and caste Muslims have marginally lower while SC have a substantially lower proportion of planned pregnancies respectively. It could be because of their socio-economic backwardness and cultural norms. On the other hand, Hindu and Other religion women have similar levels of unplanned pregnancy. Likewise, ST, OBC, and Upper Caste women.

In terms of geographical location, the proportion of planned pregnancies is lowest (84%) among women in the East and highest among women in the South (95%). The urban women have a higher proportion of Planned Pregnancies (90%). The proportion of planned pregnancies is lowest (78%) among Women with a third child. On the other hand, women with four or more children have the highest proportion (93%) of planned pregnancies.

Table 1: Pregnancy Status of Sample with Background Characteristics

Background Characteristics	Pregnancy Status					
	Planned		Mistimed		Unwanted	
	Percent(%)	Frequency	Percent(%)	Frequency	Percent(%)	Frequency
Women's Age						
15-19	89.70	2,670	9.46	285	0.84	30
20-24	89.59	10,070	8.16	892	2.25	222
25-29	90.32	8,350	4.92	448	4.76	369
30-34	87.46	3,220	4.24	133	8.30	248
35-39	82.70	1,069	2.96	38	14.34	109
40-49	85.41	217	2.08	5	12.51	33
Education Level						
Illiterate	85.82	4,054	5.68	249	8.50	350
Primary	84.72	2,691	8.01	207	7.26	189
Secondary	89.74	14,483	7.34	1,110	2.92	412
Higher	93.88	4,368	4.95	235	1.17	60
Wealth Index						
Poorest	84.77	6,029	8.57	512	6.65	391
Poorer	88.35	5,885	7.37	453	4.27	253
Middle	90.30	5,226	6.14	347	3.55	172
Richer	91.38	4,659	5.79	295	2.83	132
Richest	93.41	3,797	4.96	194	1.63	63
Caste						
SC	87.54	4,966	8.17	444	4.28	236
ST	90.40	5,522	6.11	324	3.49	154
OBC	89.78	9,472	6.54	690	3.68	398
Others	90.10	4,250	5.84	262	4.06	159
Religion						
Hindu	89.36	18,052	7.00	1,373	3.64	713
Muslims	88.84	4,146	5.63	232	5.54	211
Others	91.39	3,398	5.37	196	3.25	87
Region						
North	89.78	5,073	6.79	336	3.43	178
Central	87.92	6,132	7.23	486	4.86	317
East	84.60	4,595	9.56	507	5.84	292
Northeast	89.38	4,285	6.83	264	3.79	130
West	94.76	2,232	3.45	84	1.79	44
South	95.03	3,279	3.46	124	1.51	50
Sector						

Table 1 continued from previous page

Urban	90.73	5,103	5.67	306	3.60	184
Rural	88.88	20,493	7.04	1,495	4.08	827
Birth Order						
One	89.20	8,287	9.18	781	1.62	124
Two	83.37	3,816	7.18	304	9.46	324
Three	78.19	1,428	7.49	115	14.33	221
Four or More	92.71	12,065	4.69	601	2.60	342
Total	**89.35**	**25,596**	**6.69**	**1,801**	**3.95**	**1,011**

4.3 Results from Margins Table and Margins Plot from Logistic Regression

The margins are used to present the results as differences in probabilities and with a reference category written in brackets next to the variable name in the Table 2.

The wealth is significantly associated with unintended pregnancies. The richest women are significantly 3.5% less likely to have unintended pregnancy than the poorest women. The women in the age group 25-29 are 4.1% less likely to have an unintended pregnancy than the women in age-group 15-19. The women with Primary education and Higher education are 2.1% more and 1.5% (less respectively) likely to have unintended pregnancy than illiterate women, although the coefficient is only significant for primary. The media exposure doesn't have a significant association in all three models.

The Birth order is significantly associated with unintended pregnancies. The women with second birth and third birth have 4.4% and 7.9% respectively higher probability of unintended pregnancy than women with first birth, whereas the women with fourth birth have 4.3% lesser probability of unintended pregnancy.

ST, OBC, and Other caste women are less likely to have unintended pregnancies by 2.3%, 1%, and 0.5%, respectively. Muslim women are 1% less likely to have unintended pregnancy than Hindu women. Here we see that social identities like Religion and Caste and mainly insignificant predictors of unplanned pregnancy.

Women from the East region are 3.2% more likely to have an unintended pregnancy than women from the North. On the other hand, women in West and South are significantly less likely to have unintended pregnancy by 5.6% and 5.7% respectively. The women residing in Rural areas are 2% less likely to have unintended pregnancy than women in Urban areas.

4.4 Margins Plot

The left panel in Figure 6 shows the predictive probability of Unintended Pregnancy by Wealth Quintiles. The trend shows that the probability of unintended pregnancy is highest for women in the poorest quantile and lowest for the richest quantile. While the right panel signals a negative association between education and unintended pregnancy. The probability

of unintended pregnancy increases for women with primary education as compared to women with no education. However, the probability of unintended pregnancy falls for women with increasing levels of education.

The Figure 7 gives us further insight by the Interaction of Wealth and Education. The probability of unintended pregnancy at each level of education is highest for the women belonging to the poorest quintile. The probability of unplanned pregnancy is almost the same for poorer, middle, and richer households, i.e. the variation in the unplanned pregnancy can be explained by the differences in other characteristics, especially education. The Figure 5 shows that there is a negative association between wealth and unmet needs for contraception. There is a significantly higher proportion of Unmet Needs among the poorest women (15.13%), while it (6.57%) for the richest women.

Table 2: OLS and Marginal Effects of Pregnancy Status

	(1) OLS	(2) Unwanted	(3) Unintended
Wealth(Poorest)			
Poorer	-0.007	-0.005	-0.013*
	(-1.15)	(-1.07)	(-1.70)
Middle	-0.006	-0.006	-0.014
	(-0.98)	(-1.03)	(-1.61)
Richer	-0.010	-0.010	-0.012
	(-1.37)	(-1.52)	(-1.19)
Richest	-0.024***	-0.025***	-0.035***
	(-3.14)	(-3.84)	(-3.01)
Age Group(15-19)			
20-24	0.014***	0.014***	-0.023**
	(4.66)	(4.87)	(-2.40)
25-29	0.033***	0.034***	-0.041***
	(7.45)	(9.12)	(-3.95)
30-34	0.064***	0.062***	-0.012
	(7.78)	(8.88)	(-0.84)
35-39	0.119***	0.105***	0.034
	(6.58)	(7.34)	(1.60)
40-49	0.091***	0.088***	0.003
	(3.13)	(3.77)	(0.09)
Education Level(Illiterate)			
Primary	-0.000	0.004	0.021**
	(-0.05)	(0.79)	(2.26)
Secondary	-0.017***	-0.010**	0.003
	(-2.95)	(-2.09)	(0.42)
Higher	-0.031***	-0.028***	-0.015
	(-4.84)	(-5.30)	(-1.52)
Media Exposure(No)			

Yes	-0.001	-0.001	0.000
	(-0.24)	(-0.19)	(0.00)
Birth Order(One)			
Two	0.060***	0.048***	0.044***
	(8.83)	(9.24)	(4.81)
Three	0.092***	0.057***	0.079***
	(7.59)	(7.56)	(5.51)
Four or More	0.016***	0.015***	-0.043***
	(5.85)	(5.17)	(-7.23)
Caste(SC)			
ST	-0.011*	-0.009*	-0.023***
	(-1.95)	(-1.80)	(-2.78)
OBC	-0.001	-0.002	-0.010*
	(-0.37)	(-0.57)	(-1.69)
Others	0.005	0.008	-0.005
	(1.02)	(1.37)	(-0.57)
Religion(Hindus)			
Muslims	0.000	-0.001	-0.011
	(0.04)	(-0.17)	(-1.53)
Others	0.004	0.009	0.001
	(0.56)	(0.82)	(0.08)
Region(North)			
Central	0.008*	0.007	0.008
	(1.71)	(1.54)	(1.00)
East	0.015***	0.014***	0.032***
	(2.74)	(2.67)	(3.47)
Northeast	-0.014**	-0.014***	-0.018*
	(-2.44)	(-2.64)	(-1.69)
West	-0.013***	-0.016***	-0.056***
	(-2.69)	(-3.14)	(-5.75)
South	-0.009**	-0.015***	-0.057***
	(-2.18)	(-2.95)	(-7.30)

Sector(Urban)			
Rural	-0.010**	-0.014**	-0.020**
	(-2.21)	(-2.57)	(-2.54)
Constant	0.020**		
	(2.26)		
N	26877	26877	26877

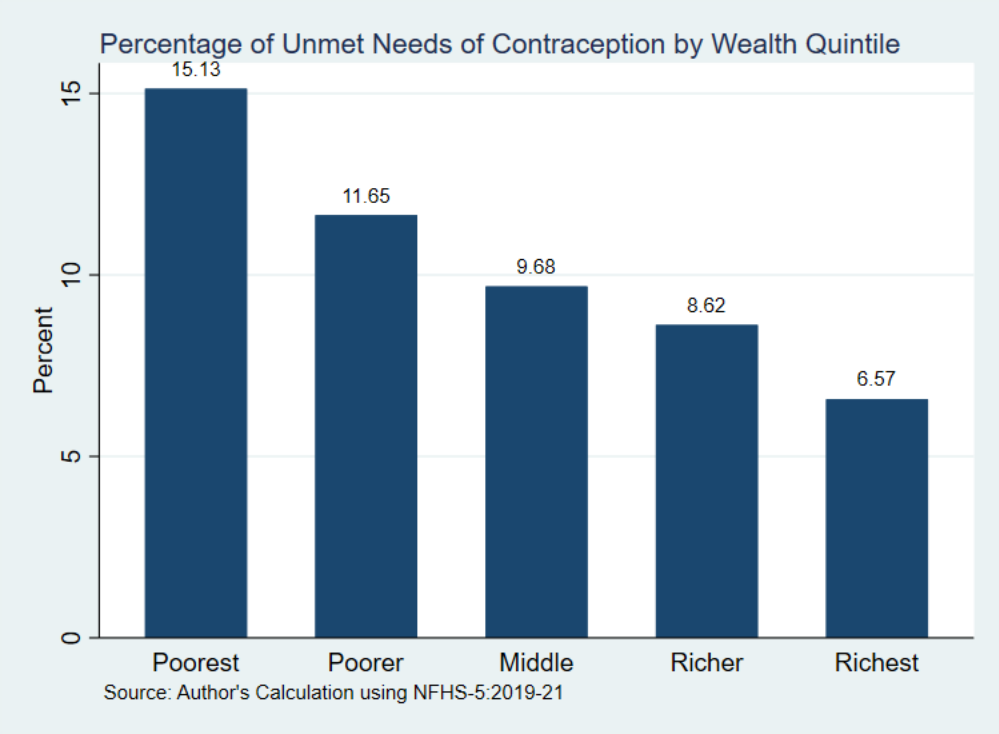

Figure 5: Wealth Quintile and Unmet Needs

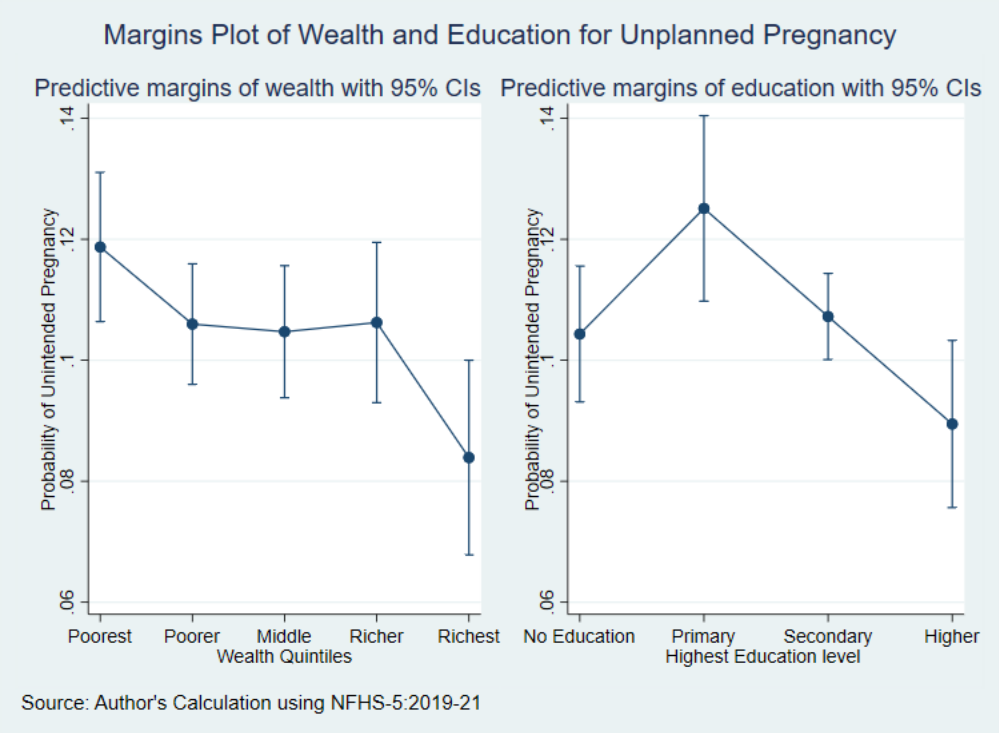

Figure 6: Margin Plot of Wealth and Education for Unplanned Pregnancy

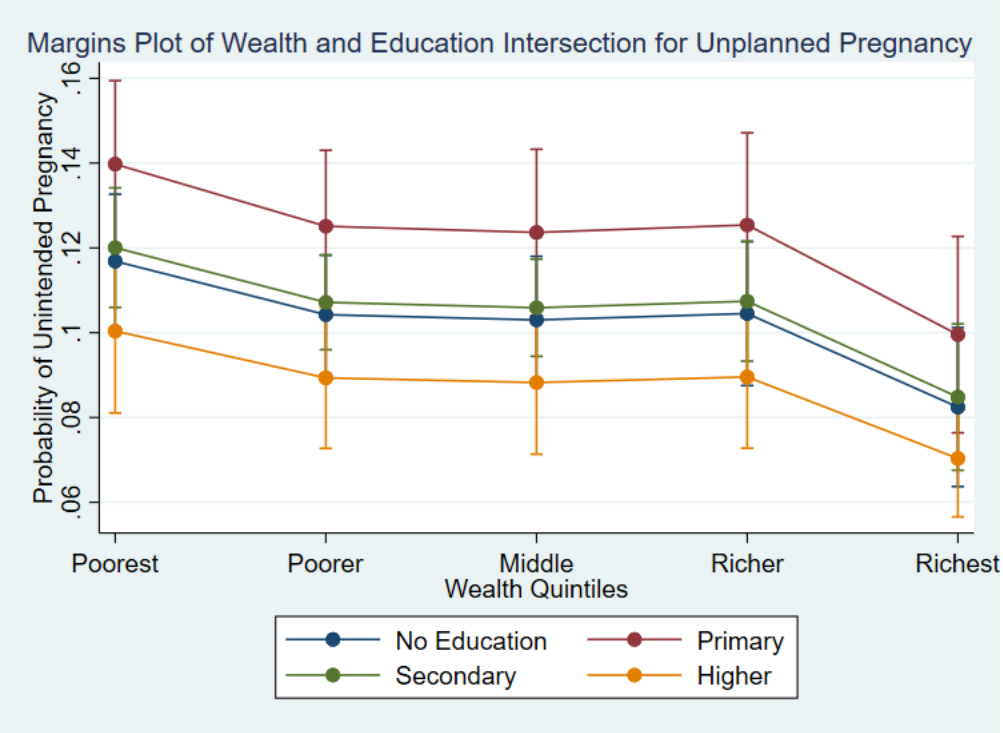

Figure 7: Margin Plot of Wealth and Education Intersection for Unplanned Pregnancy

5 CONCLUSION

The study provides evidence of an association between low levels of socio-economic factors and a higher risk of unplanned pregnancy. The wealth status and education of a woman

predict a higher risk of unplanned pregnancy and significantly for the Richest women with primary education. The reason behind this includes the negative association of wealth with the unmet need for contraception (Shown in the Figure 5). The contraceptive failure is higher among poor women due to their use of using low quality as well as non-modern contraceptives.

On the other hand, social identities don't have a direct link and have no association with unplanned pregnancy. An interesting finding related to education is higher chances of unplanned pregnancy among women with primary education than illiterate. It could be because of more reporting by women who have at least primary education. The study also shows a higher prevalence of unplanned pregnancy among young women.

The unplanned pregnancy is a serious public health and social concern and there is a dire need for targeted policies to mitigate it. There is a need to improve public healthcare facilities and access to contraceptives for the poor. Moreover, awareness and women empowerment and community sensitization on the issues of Intimate partner violence and family planning targeting the more vulnerable age groups (Young), and regions (North) is required.

A limitation of the study is missing the qualitative analysis which would give us a better picture of the mechanisms and factors affecting unplanned pregnancy.

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