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Prevalence of Anaemia Among the Women of Reproductive Age Group in West Bengal: A Social Group-wise Analysis Using NFHS-5 (2019-21) Data

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Abstract

Background: Anaemia is a condition that is defined by a low level of hemoglobin in the bloodstream. Anaemia affects around 1.71 billion people, or 23% of the world's population. In India, the high prevalence of anaemia among socially backward populations is a crucial and ongoing concern.

Data & Methods: This study uses data from the National Family Health Survey (NFHS 5) 2019-21. The regression model applied here to depicts the relative risk of several confounding variables on the development of anaemia. Geographical Information System (GIS) tools were used to conduct spatial analysis to show the districts-wise prevalence of anaemia using the choropleth technique.

Results: SC & ST women tend to experience a relatively high prevalence of anaemia across various districts as compared to OBC and general women. Darjeeling, Kolkata, and South 24 Pargana districts stand out with lower prevalence of anaemia across all social groups. Various factors such as place of residence, wealth status, children ever born and educational status are identified as significant variables which affect anaemia prevalence across all social groups. BMI is significant for SC & ST and OBC groups women but not for general women.

Conclusion: The present study provides a comprehensive scenario of the prevalence of anaemia among women of reproductive age group in West Bengal, focusing on different social groups. Overall, the study contributes valuable information on the prevalence and determinants of anaemia, which can be crucial for targeted interventions and designed public health strategies.

Keywords

Anaemia, NFHS-V, Prevalence, Public Health Strategies, Reproductive Age Women, Social Groups

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Introduction

Anaemia is a medical condition characterized by a deficiency of red blood cells (RBCs) i.e. a low concentration of haemoglobin in the blood. Haemoglobin is a protein in red blood cells that binds with oxygen and transports it to tissues and organs throughout the body. Anaemia can result from various factors, and the causes can be broadly categorized into three main groups: inadequate production of red blood cells, increased destruction of red blood cells, and blood loss (Shah et al., 2023). The World Health Organization (WHO) defines anaemia as a condition in which the number of RBCs or the haemoglobin concentration within them is lower than normal. Anaemia can occur either due to a condition present at birth (congenital) or a condition one develops (acquired) during a lifetime (World Health Statistics, 2022). The increased risk of anaemia among adolescent girls, primarily attributed to factors such as menstrual blood losses, rapid growth, and heightened tissue iron requirements. These physiological processes during adolescence can lead to an increased demand for iron, making girls increasingly vulnerable to developing anaemia. Importantly, the iron requirements often persist into adulthood (Maji et al., 2023; Robalo et al., 2020). The World Health Organization (WHO) has set a global target aiming for a 50% reduction in the prevalence of anaemia among women of reproductive age by the year 2025. This global goal emphasizes the importance of addressing and mitigating anaemia in women, recognizing the long-term health implications and the potential impact on maternal and child health (WHO Global Anaemia estimates, 2021). There is a significant and persistent issue of high prevalence of anaemia among socially backward groups in India, with specific emphasis on SC & ST, OBC and the general population. The data from the National Family Health Surveys (NFHS-3, NFHS-4, and NFHS-5) spanning from 2005-06 to 2019-21 indicates that anaemia rates above 55% were observed in several states for all social groups (Sharif et al., 2023). As a matter of fact, anaemia is a widespread public health issue with a significant impact on the well-being of people worldwide, particularly among young children and women of reproductive age. Approximately 1.71 billion individuals, constituting 23% of the global population, are affected by anaemia. Although, around one-third of women in their childbearing years' experience this condition (WHO Global Anaemia estimates, 2021). The prevalence of anaemia was notably higher among 1-3-year-olds (91%) compared to 4-5-year-olds (74.6%), with this difference being statistically significant ($p<0.001$). Moreover, the research identified lower socioeconomic status and belonging to SC & ST communities as additional risk factors for anaemia (Arlappa et al., 2010).

Prevalence of anaemia was higher in West Bengal compared to Bangladesh during 2011-2016, with significant risk factors including the use of sterilization, vegetarian diet, and open defecation. Women who used groundwater for drinking were more likely to suffer from anaemia. Additionally, younger women, those with lower socioeconomic status, less education, and more children were highly susceptible to anaemia (Jana et al., 2022). One research revealed that a substantial majority of participants (70.8%) were anaemic, with varying degrees of severity—24.16% had mild anaemia, 37.5% had moderate anaemia, and 9.16% had severe anaemia. Several factors were found significantly associated with different levels of anaemia, including

higher age, lower education, poor intake of iron-rich foods, lack of dietary diversity, and adiposity (Ghosh et al., 2020). Anaemia severity was categorized into mild (Hb 11–11.9 g/dl in females and 11–12.9 g/dl in males), moderate (Hb 8–10.9 g/dl), and severe anaemia (Hb <8 g/dl) (Debnath et al., 2022).

Several studies have shown that various factors contribute to anaemia among women. These include rural residency (Siddiqui et al., 2017; Goli et al., 2013), younger age (Adamu et al., 2017), lower educational status of women (Ma et al.,2009), poor economic conditions (Lebso et al.,2017; Ivoke et al., 2013; Das et al., 2024), inadequate nutrition (Harding et al., 2018), and higher fertility rates (Balarajan et al., 2013). Moreover, lower alcohol consumption and contraceptive use have been identified as protective factors against anaemia (Adhikary et al., 2024; Rana et al., 2019; Gautam et al., 2019).

West Bengal has the highest prevalence of anaemia, followed by Tripura (67.2%) and Assam with 65.9% among women of 15-49 years recorded in NFHS-5. In this study, the primary objective was to investigate the prevalence of anaemia among reproductive-age women (aged 15–49 years) in the districts of West Bengal, with a specific emphasis on their social group affiliations. This paper tries to find out the difference of anaemia prevalence among SC & ST, OBC and general category women in reproductive age groups.

The main objectives of the study are:

To find out the regional pattern in prevalence of anaemia among women of reproductive age in West Bengal.

To examine anaemia prevalence among socially disadvantaged groups (SC & ST, OBC) compared to the general category women of reproductive age groups in West Bengal.

To investigate regional patterns of prevalence rate of anaemia among socio-economically disadvantaged groups.

Data and Methodology

Data Source and sample size

The assessment of anaemia prevalence among women of reproductive age in West Bengal is based on data obtained from the National Family Health Survey (NFHS-5), conducted during 2019 to 2021. The NFHS-5 is a comprehensive survey carried out by the International Institute for Population Sciences (IIPS), which collects data on a wide range of demographic and health indicators. NFHS-5 fieldwork was done in two phases: phase one from 17 June 2019 to 30 January 2020 and phase two from 2 January 2020 to 30 April 2021 in all the states (28) and union territories (8). The NFHS-5 collected data from 636,699 households, 724,115 women and 101,879 men. The NFHS-5 was developed to be representative of each of India's over 707 districts for key indicators, including anaemia. It was carried out utilizing a two-stage sampling technique. The household response rate was 98%, while the individual response rate for males was 92%, and for women, it was 97%. The detailed methodology for the survey design can be found in the NFHS-5 national report (IIPS and ICF., 2021).

The NFHS-5 dataset includes a total of 21,408 women aged 15–49 years from West Bengal. However, for the purpose of our analysis, we excluded cases with missing data on caste, which is a key variable in this study. Given our primary objective of examining the

prevalence and predictors of anemia among different social groups, we retained only those observations that belonged to the Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), and General category. Consequently, the final analytic sample comprises 16,301 women, including 6,252 SC women, 1,596 ST women, 2,633 OBC women, and 5,820 women from the General category. Among the excluded cases, 424 respondents reported their caste as 'don't know,' and 4,683 had no information on their caste or tribe. For the purpose of this analysis, Scheduled Castes and Scheduled Tribes were grouped together due to shared historical disadvantages and relatively similar health vulnerabilities.

Dependent Variables

In this study, the dependent variable is presence (anaemic) or absence (non-anaemic) of anaemia among the participants. Anaemia severity was categorized into mild (Hb 11–11.9 g/dl in females and 11–12.9 g/dl in males), moderate (Hb 8–10.9 g/dl), and severe anaemia (Hb <8 g/dl) (Debnath et al., 2022).

Independent Variables

Derived from a thorough literature review, independent variables include place of residence (rural, urban), age (15-24, 24-35, 35+), wealth status (poorest, poor, middle, richer, richest), BMI (underweight, normal, overweight, obesity), alcohol consumption (yes, no), dietary pattern (vegetarian, non-vegetarian), pregnancy status (non-pregnant, pregnant), marital status (never married, currently married, widowed, divorced, no longer living together), current working status (not working, working), children ever born (no children, one or two children, more than two children) and educational status (no education, primary, secondary & higher) (Das et al., 2024; Siddiqui et al., 2017; Vart et al., 2015; Balarajan et al., 2013). The study tries to find out the association between anaemia to these variables.

Analytical Procedure

Univariate analysis explores the distribution and characteristics of anaemia prevalence. Bivariate analysis evaluates the relationship between anaemia prevalence and different social groups, employing the Chi-Square test to identify significant associations ($p < 0.05$). A binary logistic regression analysis was used to examine the demographic and socio-economic factors assesses the impact of several confounding variables on the prevalence of anaemia in reproductive-age women from different social groups. The findings were reported as odds ratios (ORs) along with 95% confidence intervals (CIs).

$$\ln\left(\frac{p}{1-p}\right) = \propto + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \ldots \beta_i x_i + \varepsilon$$

Where,

'P' is the probability of anaemia; x1, x2, x3, …xi denote the independent variables; β0, β1, β2, β3 …βi denote the coefficients, which quantify the effects of the independent variables on anaemia prevalence; and 'ε' denote the error term. To ensure the reliability and accuracy of the findings, the analysis applied appropriate sample weighting techniques. All analyses were carried out using STATA version 15 (StataCorp., 2015). Geographic Information System (GIS) tools are employed for spatial analysis and mapping of anaemia prevalence in West Bengal's districts, through choropleth technique.

Results

Background characteristics

Table 1 presents the prevalence of anaemia among reproductive-age women in West Bengal across different social groups, highlighting variations based on background characteristics. SC & ST women exhibit the highest prevalence of severe and moderate anaemia compared to OBC and general category women.

Educational disparities are evident, with SC & ST women having the highest proportion of individuals with no education, while OBC women are more concentrated in primary education. General category women are more evenly distributed across educational levels, with greater representation in secondary and higher education. Age distribution is relatively similar across groups, though a slightly higher proportion of general category women are aged 35 and above.

Economic disparities are pronounced, with SC & ST and OBC women more likely to belong to the poorer wealth categories, while general category women are overrepresented in the richer segments. SC & ST women have the highest prevalence of underweight status, followed by OBC and general category women, while obesity remains low across all groups but is slightly higher among OBC and general category women.

The spatial distribution of anaemia prevalence among reproductive-age women in West Bengal by social group

The district-wise prevalence of anaemia among reproductive-age women from different social groups in West Bengal, as shown in figures 1.1 to 1.3, reveals significant disparities. Anaemia prevalence is categorized into high (≥70%), moderate (60–70%), and low (<60%) levels. SC & ST women exhibit the highest prevalence, with most districts falling into the high category. Moderate prevalence is observed in North 24 Parganas, Kolkata, Purba Medinipur, and Paschim Bardhaman, while Darjeeling is the only district with low prevalence.

OBC women show a more varied pattern. High prevalence is concentrated in Uttar Dinajpur, Dakshin Dinajpur, Murshidabad, Birbhum, and several other districts, primarily in North Bengal, Rarh, and Jungle Mahal. Moderate prevalence is found in districts like Jalpaiguri, Cooch Behar, Malda, and parts of southern West Bengal, whereas Darjeeling, Kolkata, and South 24 Parganas report low prevalence, indicating better health outcomes compared to SC & ST women.A similar trend is observed among general category women, though with relatively lower prevalence on the whole. High prevalence is evident in Dakshin Dinajpur, Malda, Murshidabad, and a few other districts, while Darjeeling and Kolkata consistently report low prevalence across all social groups, suggesting localized success in anaemia prevention. The comparative analysis highlights that SC & ST women face the highest anaemia burden, whereas OBC and general category women experience more regional variability, with certain districts demonstrating better health conditions.

Prevalence of anaemia and its determinants

The table 2 represents cross-tabulations and the outcomes of chi-square tests examining the association between different background characteristics and the occurrence of anaemia among women in the reproductive age group from different social groups in West Bengal. The close look to the table it is found that there are significant

variations in the prevalence of anaemia among women in reproductive age group across all social groups based on their place of residence (P=<0.005), urban residents' women in the reproductive age group have a significantly lower prevalence of anaemia compared to rural residents. A recent study based on primary data suggests that 70.8 percent rural women in the reproductive age group (non-pregnant and non-lactating) were anaemic. The analysis of data also reveals that among ST & SC women, anaemia is most prevalent in the 35+ age group, followed by the 15-24 age group, with a statistically significant difference across age groups (p = 0.002). For OBC women, the 15-24 age group shows a higher prevalence of severe anaemia compared to other age groups which are also statistically significant (p = 0.011). However, among general category women, there is no significant association between age groups and anaemia prevalence (p = 0.136). Wealth status significantly influences anaemia prevalence across all caste groups, as wealth increases, there is a general trend of decreasing anaemia prevalence. The result of the analysis also shows that there is a strong relationship between prevalence of anaemia and number of children ever born, its highest among women with more than two children across all social groups.

There is no significant association between dietary pattern and prevalence of anaemia across all social groups (P>0.05). However, there are significant association between BMI and anaemia prevalence in case of ST & SC and OBC women of reproductive age group (p<0.05) but for general women p value suggests that there are no significant association between anaemia prevalence and BMI (P=0.360). In this study, the statistical P value does not indicate a significant association between drinking alcohol and anaemia status across all social groups (p>0.005). Pregnancy status suggest a significant association between pregnancy status and prevalence anaemia among SC & ST women in the reproductive age group. But for OBC and general women there is no significant association between anaemia and pregnancy status (p>0.005). Working status suggests that it doesn't have a statistically significant association with anaemia prevalence among reproductive age women in West Bengal across all social groups. From the table 2 it clearly stands out that anaemia prevalence varies significantly with educational status among SC & ST and general category women, where higher education level is associated with lower anaemia prevalence. However, for OBC women, the relationship is not statistically significant.

Adjusted odds ratio of anaemia prevalence and its determinants among different social groups in West Bengal

The binary logistic regression analysis in the table 3 examines the association between anaemia prevalence and various background characteristics across social groups in West Bengal. The results indicate that anaemia risk varies by demographic and socioeconomic factors. Rural women face a higher risk than their urban counterparts, and OBC women have greater odds of anaemia than those in the general category. Age influences anaemia prevalence, with women aged 25–34 and 35+ at slightly higher risk. Wealth serves as a protective factor, with the richest women exhibiting the lowest odds of anaemia. Education also mitigates risk, as women with primary education are less likely to be anaemic than those with no education, and this protective effect strengthens at higher education levels. Employment status plays a role, with

employed women experiencing lower odds of anaemia, while non-working women, particularly in the OBC group, are more vulnerable. Marital status shows an inverse relationship, as divorced or separated women—especially in the general category—tend to have lower anaemia odds. Pregnancy appears protective across all groups, whereas a higher number of children increases anaemia risk, particularly among SC & ST women. BMI impacts anaemia likelihood, with normal and overweight women facing higher odds than underweight women. Alcohol consumption is associated with reduced anaemia risk, while a non-vegetarian diet has mixed effects, slightly raising risk for some groups while lowering it for others. Older methods of anaemia prevention or non-usage increase anaemia risk across all groups. While no clear trend emerges for education and anaemia, women with secondary or higher education consistently show lower odds of anaemia.

Discussion

As per WHO guidelines anaemia affects over 40% of women of reproductive age (WRA) in south and southeast Asian countries which indicates that anaemia is a significant health issue in this region (Benoist et al., 2008). The study provides a comprehensive analysis of the prevalence of anaemia among women of reproductive age group in West Bengal, focusing on different social groups. There is significant variation in anaemia prevalence among different social groups, with SC & ST women having a higher prevalence of severe anaemia, while OBC and general women exhibit higher percentages of moderate anaemia. Previous studies stated that underprivileged population groups having lower education, limited access to healthcare services, and inadequate dietary pattern are more prone to being anaemic (Yadav et al., 2021; Singla, 2024). Various factors such as place of residence, wealth status, children ever born and educational status are identified as significant variables which affect anaemia prevalence across all social groups. BMI is significant for SC & ST and OBC groups women but not for general women. The present study shows that there is no significant association between anaemia and variables such as dietary pattern, alcohol consumption, pregnancy status, and currently working status across all social groups (Sharif et al., 2023). Anaemia prevalence across different districts of West Bengal are shown in figure 1 emphasizing higher prevalence among SC & ST women. District-level analysis highlights disparities, with some districts showing high, moderate, or low prevalence among OBC and general women. Darjeeling, Kolkata, and South 24 Pargana stand out with lower prevalence of anaemia across all social groups. Previous studies suggest that the prevalence of anaemia in Kolkata has been relatively low (Let et al., 2025). Spatial variation of prevalence of anaemia indicated that it is one of the major problems of most of the districts of West Bengal. The women who live in rural areas are more prone to anaemia as compared to those who live in urban areas. Research suggests the same results for India (Sharif et al., 2023). In this study women with no education have higher prevalence of anaemia compared to those with primary or secondary and above education. This finding is similar with the study conducted in China and also the study in Vellore district of India, where a higher prevalence of anaemia was reported in lower-educated women (Ma et al., 2009; Rajaratnam et al., 2000).

In this study it has been found that underweight women across all social groups

have higher prevalence of anaemia as compared to others BMI categories. Previous studies have also shown that underweight women are associated with high risk of anaemia (Jana et al., 2022; Bharati 2019 et al., Das et al., 2024). No educated women across all social groups have a higher prevalence of anaemia compared to the women who studied primary, secondary and above education. Similar results were also found in previous studies as they identified that prevalence of anaemia decreases with increasing educational level (Panigrahi et al., 2011; Sunuwar et al., 2020; Siddiqui et al., 2017; Das et al., 2024).

Conclusion

This study provides a detailed examination of the prevalence and determinants of anaemia among women of reproductive age in West Bengal, with a focus on differences across social groups. The above finding may valuable for understanding the socio-economic, health disparities and anaemia prevalence among different social groups. Overall, the study contributes valuable information on the prevalence and determinants of anaemia among women of reproductive age group in West Bengal, which can be crucial for targeted interventions and designed public health strategies.

Limitation of the study

This study utilizes cross-sectional data from NFHS-5, offering a snapshot rather than a longitudinal perspective on anaemia prevalence. While the analysis identifies associations between anaemia and various factors, it does not establish causality. As the data is based on self-reported survey responses, underreporting or misreporting may affect accuracy. Additionally, since NFHS dataset provides district-level data, the analysis may obscure intra-district variations.

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Tables and Figures

Table 1 Distribution of women in reproductive age groups in West Bengal according to background factors in different social groups.

Background Characteristics	Social Groups		
	SC & ST	OBC	General
Anaemia			
Severe	2.63	1.75	1.87
Moderate	43.2	35.41	34.38
Mild	28.16	30.18	29.52
Not Anaemic	26	32.65	34.23
Place of Residence			
Rural	26.57	27.53	38.28
Urban	73.43	72.47	61.72
Age Groups			
15-24	32.75	35.08	31.00
25-34	29.77	28.98	30.29
35+	37.48	35.93	38.71
Wealth			
Poorest	42.08	26.03	25.38
Poor	27.14	27.35	26.27
Middle	18.32	25.29	19.76
Richer	9.37	15.91	17.71
Richest	3.09	5.43	10.88
Children Ever Born			
No Children	24.94	27.92	25.17
One or Two Children	54.25	52.23	55.6
More than Two Children	20.81	19.85	19.22
Dietary pattern			
Vegetarian	57.07	58.46	61.65
Non-Vegetarian	42.93	41.54	38.35
BMI (Body Mass Index)			

Underweight	17.37	17.13	14.84
Normal	64.15	58.6	59.41
Overweight	15.3	19.01	20.57
Obesity	3.18	5.26	5.18
Drinking Alcohol			
No	98.71	99.81	99.44
Yes	1.29	0.19	0.56
Pregnant			
Non-Pregnant	96.97	96.65	96.93
Pregnant	3.03	3.35	3.07
Currently Marital Status			
Never Married	16.95	20.94	17.59
Currently Married	77.87	76.08	78.16
Widowed	3.82	2.09	2.84
Divorced	0.26	0.31	0.35
No longer living together	1.1	0.57	1.06
Currently Working Status			
Not Working	96.8	97.72	97.21
Working	3.2	2.28	2.79
Educational Status			
No Education	24.7	12.21	14.86
Primary	65.19	70.45	69.23
Secondary & Higher	10.11	17.34	15.9

Sources: NFHS-5, 2019-21.

Table 2 Social group-wise prevalence of anaemia level among women in reproductive age groups by background characteristics in West Bengal, NFHS-5 (2019–21).

Background Characteristics	SC & ST				Chi Square	p value	OBC				Chi Square	p-value	General Caste				Chi Square	P-value
	Severe	Moderate	Mild	Not Anaemic	χ2		Severe	Moderate	Mild	Not Anaemic	χ2		Severe	Moderate	Mild	Not Anaemic	χ2	
Place of Residence																		
Urban	1.88	33.76	31.27	33.09	126.61	0.000	0.3	30.99	29.64	39.07	34.783	0.000	1.76	29.09	29.94	39.21	43.216	0.000
Rural	3.28	46.69	26.93	23.1			2.54	38.47	29.52	29.47			1.83	36.77	28.95	32.44		
Age Groups (years)																		
15-24	2.5	42.71	28.03	26.76	20.993	0.002	2.24	35.58	29.27	32.91	16.467	0.011	1.34	33.13	29.06	36.47	9.745	0.136
25-34	2.29	43.5	28.16	26.05			1.23	32.7	32.83	33.24			1.84	32.22	30.09	35.85		
35+	3.89	44.75	27.66	23.7			2.28	40.5	27.31	29.91			2.14	35.26	29.01	33.6		
Wealth																		
Poorest	3.1	49.15	27.15	20.6	143.988	0.000	3.42	40.03	27.73	28.83	33.681	0.001	1.88	38.32	28.84	30.96	52.237	0.000
Poorer	3.59	42.8	27.38	26.23			2.28	36.29	30.91	30.51			1.9	35.24	30.41	32.45		
Middle	1.92	36.48	29.73	31.88			0.48	36.01	29.9	33.6			2	34	27.93	36.07		
Richer	2.57	33.84	30.21	33.38			1.23	30.47	29.98	38.33			1.77	30.32	30.49	37.42		
Richest	1.55	37.63	28.35	32.47			1.56	40.63	28.91	28.91			1.1	26.53	28.57	43.8		
Children Ever Born																		

No Children	2.71	41.28	27.86	28.16			2.78	34.66	27.12	35.45			1.48	31.2	27.22	40.09		
One or Two Children	2.48	43.33	28.53	25.66	40.507	0.000	1.36	35.97	31.3	31.37	17.19	0.009	1.95	33.86	30.23	33.95	24.722	0.000
More than Two Children	4.36	47.36	26.61	21.67			2.36	40.65	28.68	28.31			1.8	36.67	29.58	31.95		
Dietary Pattern																		
Vegetarian	3.05	43.87	27.55	25.53	0.911	0.823	2.19	34.95	30.3	32.56	4.52	0.21	1.91	33.79	28.92	35.37	1.329	0.722
Non-Vegetarian	2.84	43.49	28.41	25.25			1.68	38.74	28.55	31.03			1.63	33.54	30.01	34.82		
BMI (Body Mass Index)																		
Underweight	3.63	47.85	23.39	25.13			3.5	40.66	25.88	29.96			2.66	34	27.35	35.99		
Normal	2.83	44.1	28.78	24.29	48.697	0.000	2.03	36.32	30.24	31.41	24.956	0.004	1.53	33.42	30.41	34.64	9.887	0.36
Overweight	2.69	38.15	29.89	29.26			0.66	33.62	32.31	33.41			1.82	34.31	27.83	36.04		
Obesity	2.63	35.09	29.39	32.89			0	33.83	26.32	39.85			2.3	33.55	28.95	35.2		
Drinking Alcohol																		
No	2.95	43.72	28.01	25.31	3.141	0.37	1.98	36.64	29.58	31.8	3.746	0.290	1.8	33.76	29.33	35.11	1.873	0.599
Yes	3.15	42.52	22.83	31.5			0	20	20	60			2.63	23.68	31.58	42.11		
Pregnancy Status																		
No or Unsure	3.05	43.83	28.1	25.01	25.882	0.000	2.04	36.82	29.57	31.57	5.909	0.116	1.86	33.83	29.27	35.05	5.181	0.159
Yes	0	39.84	22.71	37.45			0	28.92	28.92	42.17			0	29.01	32.1	38.89		

Currently Marital Status																	
Never in Union	2.92	42.55	27.15	27.37			3.5	34.97	25.87	35.66			1.41	30.33	27.23	41.03		
Married	2.91	43.78	28.04	25.27			1.47	36.99	30.87	30.67			1.91	34.47	29.78	33.84		
Widowed	4.11	48.73	27.53	19.62	14.241	0.286	3.45	36.21	18.97	41.38	24.326	0.018	0.55	35.91	31.49	32.04	5.515	0.013
Divorced	4.55	27.27	31.82	36.36			0	50	25	25			4.76	33.33	28.57	33.33		
Separated	2.25	42.7	32.58	22.47			5.26	36.84	36.84	21.05			3.57	28.57	28.57	39.29		
Currently Working Status																		
No	2.95	43.81	27.93	25.31	1.335	0.721	1.99	36.77	29.61	31.63	3.662	0.300	1.82	33.65	29.44	35.08	1.345	0.718
Yes	3.15	40.91	27.97	25.41			1.52	28.79	27.27	42.42			1.21	35.15	26.06	37.58		
Educational Status																		
No Education	3.61	48.1	26.77	21.52			2.16	42.86	27.76	27.22			2.86	36.31	30.01	30.81		
Primary	2.8	42.89	28.14	26.16	47.26	0.000	1.98	35.61	30.49	31.92	11.1763	0.083	1.74	33.96	29.69	34.61	30.159	0.000
Secondary & above	2.21	37.11	29.69	30.99			1.8	35.28	27.19	35.73			1.12	30.31	27.35	41.22		

Source: NFHS 5, 2019-21

Table 3 Binary logistic regression showing anaemia prevalence in women in reproductive age groups from different social groups by their background characteristics, NFHS-5, 2019-21.

Background Characteristics	SC & ST		OBC		GENERAL	
	OR	95% CI	OR	95% CI	OR	95% CI
Place of Residence						
Urban ®						
Rural	1.33***	(1.225-1.44)	1.53***	(1.353-1.741)	1.11*	(1.02-1.203)
Age Groups (Years)						
15-24 ®						
25-34	0.95**	(.866-1.047)	0.9	(.776-1.054)	0.8***	(.728-.888)
35+	0.99*	(.892-1.103)	1.07**	(.912-1.278)	0.87***	(.89-.974)
Wealth Status						
Poorest ®						
Poorer	0.78***	(.718-.847)	0.99*	(.859-1.141)	0.99*	(.901-1.093)
Middle	0.63***	(.572-.697)	0.96*	(.833-1.127)	0.93**	(.844-1.042)
Richer	0.7***	(.615-.799)	0.83**	(.696-1.002)	0.89*	(.797-1.007)
Richest	0.76*	(.629-.937)	1.71***	(1.299-2.272)	0.69***	(.600-.805)
Children Ever Born						
No Children ®						
One or Two Children	1.11	(.978-1.271)	1.03*	(.825-1.296)	1.14**	(.998-1.312)
More than Two Children	1.37***	(1.173-1.602)	1.13**	(.871-1.484)	1.15*	(.985-1.360)
Dietary pattern						
Vegetarian ®						
Non-Vegetarian	0.99*	(.936-1.065)	1.13**	(1.028-1.260)	1.02**	(.958-1.093)
BMI (Body Mass Index)						
Underweight ®						
Normal	1.19***	(1.096-1.309)	0.89	(.72-1.028)	1.1**	(1.007-1.214)
Overweight	0.94**	(.844-1.063)	0.88	(.737-1.052)	1.04**	(.929-1.165)
Obesity	0.97*	(.805-1.178)	0.61***	(.476-.781)	1.06**	(.899-1.252)
Drinking Alcohol						
No ®						
Yes	0.63***	(.485-.828)	0.66**	(.224-1.956)	0.77**	(.509-1.179)
Pregnant						
Non-Pregnant ®						
Pregnant	0.52***	(.431-.631)	0.51***	(.385-.699)	0.67***	(.549-.833)
Current Marital Status						
Never Married ®						

Currently Married	1.05*	(.753-1.480)	1.58**	(.751-3.339)	0.57***	(.411-.794)
Widowed	1.36	(.931-2.007)	0.85*	(.376-1.927)	0.5***	(.347-.741)
Divorced	0.55*	(.291-1.063)	1.49**	(.474-4.681)	0.58	(.298-1.135)
Separated	1.2**	(.761-1.899)	3.14**	(1.079-9.176)	0.35***	(.230-.551)
Currently Working Status						
Not Working ®						
Working	0.75***	(.630-.896)	0.63*	(.463-.878)	0.94**	(.783-1.148)
Educational Status						
No Education ®						
Primary	0.95*	(.893-1.070)	0.99*	(.829-1.185)	0.81***	(.729-.903)
Secondary & Higher	0.85*	(.740-.976)	0.93**	(.741-1.171)	0.69***	(.607-.801)
Constant	2.13***	(1.496-3.039)	1.08*	(.507-2.330)	3.89***	(2.756-5.498)
Observation	7,848		2,633			5,820

Source: NFHS-5, 2019-21

*OR- odds ratio, CI- confidence interval ®, reference category of different characteristics significant level *** p<0.01, **p<0.05, *p<0.1*

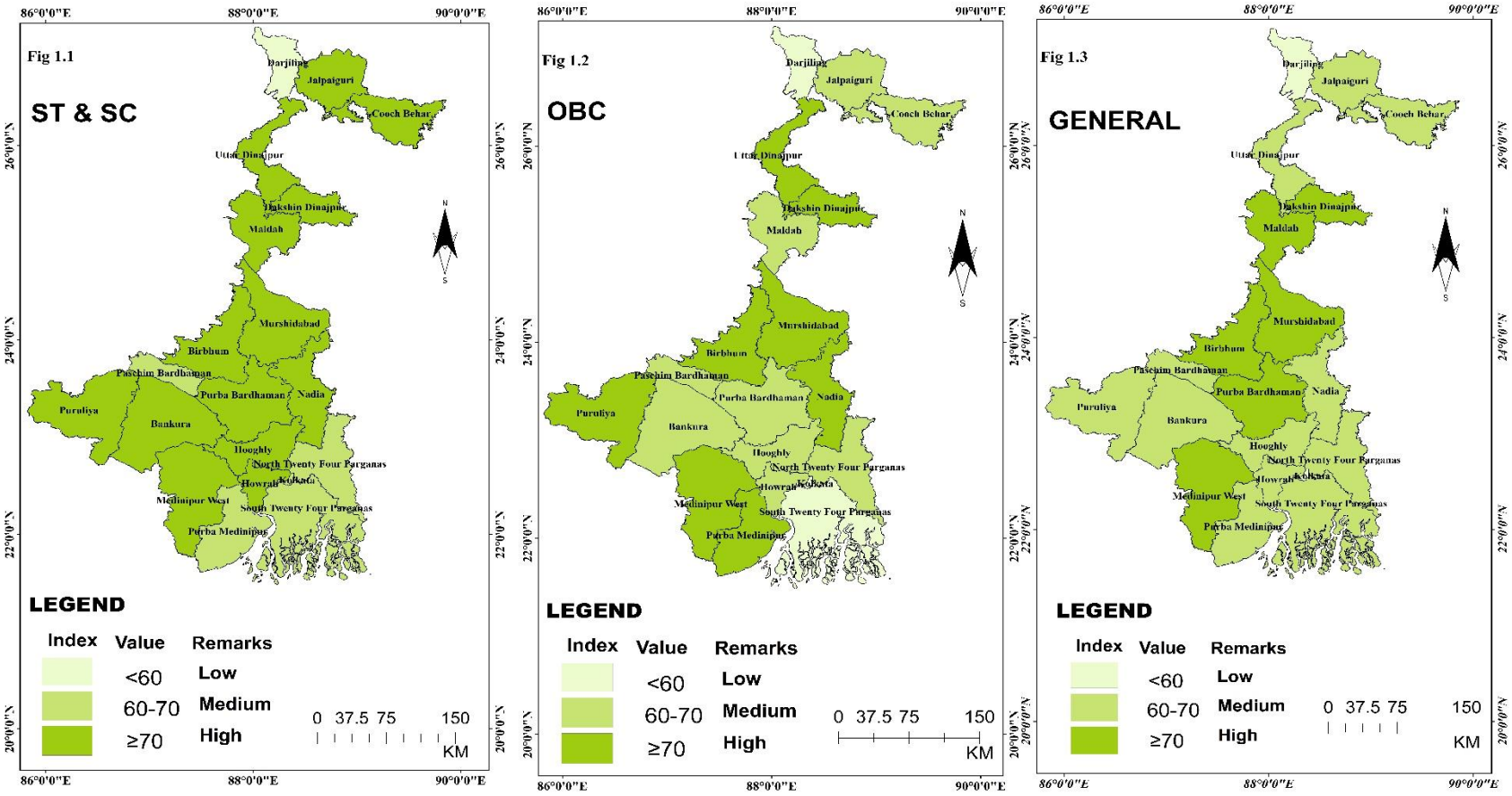

Figure 1 District-wise prevalence of anaemia among reproductive women of different social groups in West Bengal, NFHS-5, 2019-21