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The Burden of Anemia: A Study of SC Women's Health in Haryana

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Abstract

One of the significant global public health issues that exists, especially among reproductive-age women and children in underdeveloped nations, is anemia, which has serious repercussions for survival, economic growth, and overall health. Poor nutritional status, especially the decline in coarse cereals in the Indian diet, which lowers iron intake, is the main reason for the high incidence of anemia among Indian women. Women who suffer from anemia are severely impacted because it impairs their ability to perform physical labour and stunts their growth, making them ill-prepared to handle the challenges of pregnancy and parenting. The present study explores the socioeconomic risk factors of anemia among women of the scheduled caste in Haryana. The SCs are the most disadvantaged group in India. They occupy the lowest status in the hereditary and hierarchical caste system of India and have been subjected to oppression and untouchability by the upper castes. The present attempt is based on the Demographic Health Survey data from the 4th and 5th National Family Health Survey editions. The study's findings suggest that anemia among women (15-49) has slightly decreased from 62.7 per cent in NFHS-4 to 60.4 per cent in NFHS-5. The severity of anemia among SCs, OBC, and other women has increased from NFHS-4 to NFHS-5. The government should frame new policies to improve the overall nutritional status of women of reproductive age and all socio-economic subgroups.

Keywords: Anemia; Women; Nutritional status; Health; etc.

Introduction

Anemia is a major public health issue, especially among women in Haryana, India. At its core, anemia occurs when the body lacks enough red blood cells or hemoglobin, which reduces the blood's ability to carry oxygen. When hemoglobin is below normal, not just health but also productivity and well-being are impacted [1]. Anemia is still a worldwide problem, and the most vulnerable groups are childbearing women of reproductive age and young children [2]. Its impact does not stop at personal well-being; socioeconomic development may be hampered, and quality of life decreased by anemia. Nutritional anemia is one of the most prevalent health disorders among Indian women [3]. It is a result of a combination of factors like improper diet, recurrent infection, chronic disease, and deficiency of rare genetic elements. Among them, the biggest culprit is iron deficiency, which occurs most frequently due to inadequate intake of iron-containing food or defective utilisation of dietary iron. Other deficiencies of vitamins and minerals like folate, vitamin B12, and vitamin A are also an important contributory factor for the this [4].

The World Health Organization (WHO) categorizes anemia on the basis of hemoglobin and physiological status, age, and sex [5]. Pregnancy

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is of most significance in the context of anemia because it increases preterm labour, low birth weight, and maternal death risks [6]. The symptoms are very common, such as tiredness, dizziness, and breathlessness which can affect the way of life and health of a woman significantly. Anemia affects nearly one-quarter of the population worldwide, and it affects women and children disproportionately [7, 1,8]. In developing countries, 35% to 75% of pregnant women suffer from anemia [9]. Anemia is directly responsible for over 115,000 deaths at childbirth and nearly 600,000 antenatal deaths every year worldwide [10]. The consequences of anemia extend far beyond a matter of health. Anemia weakens women physically and mentally, lowers their resistance to disease, and diminishes their capacity to learn, earn, and care for their families. Anemia is a poverty trap and ill health passed from generation to generation. Eradication of anemia among women is not only required to improve the health and well-being of individuals as well as women's equity, family welfare, and India's sustainable development.

Anemia is a significant public health problem in India, which is driven by low diet diversity, poverty, gender inequality, and limited access to care. National initiatives such as Anemia Mukt Bharat, which focuses on the prevention of anemia through supplementation and mass education, have been accompanied by uneven gains. In Haryana and other places, women's health remains bad with a high prevalence of pregnancies, short birth intervals, malnutrition, and parasitic diseases [11]. These add to the widespread prevalence of anemia, especially in marginalized and poor groups. Inter-caste inequality characterized early childbearing. The most disadvantaged were Scheduled caste women, although this gap was narrow [12]. Prevalence of anemia in poor and poorest of the general women were lower than the women belonging to richer and richest categories of SC&ST, OBC [13]. The poorly educated and poor women and socially disadvantaged groups were most affected by anemia during the last two decades [14]. Anemia in women elevates maternal morbidity and pregnancy complications like stillbirth, low birth weight and preterm labour and high maternal mortality [15]. Maternal anemia also impacts children in the generations to come through stunting and delayed intellectual development [16]. It has been found that the principal determinants of the high morbidities and mortality among Indian women of reproductive age are perinatal and nutritional [17]. Despite policy actions conventionally targeting iron and folic acid supplementation, recent studies underscore the need to address a palette of micronutrient deficiencies and determinants of anemia holistically [18,19]. Recent evidence suggests that anemia is established by a sophisticated interaction of dietary and non-dietary factors, such as poverty, hemoglobinopathies, and infections, that simultaneously inform dietary iron intake's impact on the prevalence of anemia [20, 21]. Beyond its contribution to health, anemia is extremely costly, incurring losses in productivity and costing the public health systems [22]. Since it realized its significance globally, the World Health Organization (WHO) was actively in pursuit of decreasing the occurrence of anemia among women of reproductive age by 50% by the year 2025 [23].

In India, there have been various government schemes implemented for the treatment of anemia, like Anemia Mukt Bharat scheme that addresses iron and folic acid supplementation, deworming, and the creation of awareness. Although Integrated Child Development Services (ICDS) program is also targeted towards women and adolescent girls by providing supplementary nutrition, health education, and supplementation on a regular schedule. Despite all such efforts, the speed has remained slow and jerky on account of implementation gaps, social disparities, and poor coverage among weaker sections like the Scheduled Castes (SCs) and the Scheduled Tribes (STs). There is evidence to show that anemia-correcting interventions are most effective when nutrition interventions are followed by all-around social and economic interventions like education, women's empowerment, and vocational training schemes. Such multidimensional interventions address not just the biological causes of anemia but also the support systems on which it thrives and provide a longer-term solution to women's better health and the eradication of caste discrimination in India. This exercise presents anemia prevalence in 15-49-year-old women by caste (SC, ST, OBC, others). The STs are not present in Haryana, and hence the three categories, i.e., SC, OBC, and Others, have been taken into consideration for the study.

Methodology

The present study is based on secondary data taken from the National Family Health Survey (NFHS) editions 4th and 5^{th,} which were conducted by the Ministry of Health and Family Welfare (MoHFW) with support from the International Institute for Population Sciences (IIPS), which gives nationally representative data on different health and socioeconomic indicators. These surveys are helpful in estimating the incidence and trends of anemia among various population groups, including SC women. The research focuses on women of reproductive age, specifically SC women in Haryana. According to the WHO, when the amount of hemoglobin in red blood cells is lower than normal or when there are fewer red blood cells than typical, it causes anemia. Hemoglobin is necessary for the blood to transfer oxygen to the body's tissues; if a person has too few red blood cells or not enough hemoglobin, the capability of blood to transfer oxygen would be diminished. The study used four categories, such as any anemia, mild, moderate and severe, suggested by the World Health Organisation. When a woman's haemoglobin is less than 12 gm per 100 ml of blood, the woman is considered anemic.

Ruby, et al., J Women's Health Dev 2026
DOI:10.26502/fjwhd.2644-288400146

Mild - anemia	<11.9 gm to gm Hb / 100ml blood
Moderate - anemia	9.9gm to 7gm Hb / 100ml blood
Severe- anemia	< 7gm Hb / 100ml blood
Anemia in non-pregnant women	<12 gm Hb / 100ml blood (above 15 years of age)

The study used cross-tabulation to examine the percentage incidence of anemia among women of reproductive age (15-49). This allows the study to explore patterns and disparities in anemia among women based on caste. The study used ArcGIS software to map the disparities among women of different caste categories. The study does not consider Scheduled Tribes because these do not exist in Haryana.

Results

This table examines the prevalence of anemia among Scheduled Caste (SC) women across 22 districts of Haryana, using data from the National Family Health Surveys NFHS-4 (2015–16) and NFHS-5 (2019–21). The indicators categorize anemia into four levels of severity: severe, moderate, mild, and any anemia. Comparison between the two survey rounds is to identify in which way the status has improved or worsened and where there has been improvement or decline. On a quick glance, any anemia among SC women would appear to have altered very marginally. While 65.91% were anemic in NFHS-4, in NFHS-5, it was 64.99%. But a second glance puts a darker shade to the story. Though no variation was observed in the prevalence of any anemia, the severity of anemia is greater. The incidence of women with mild anemia dropped to as high as 43.9% to 25.02%. Meanwhile, cases of medium anemia have surged from 20.27% to 35.14%, while severe anemia has nearly doubled from 1.72% to nearly 4.83%. This would indicate that although fewer women are currently under treatment for mild anemia, more women are currently under treatment for the severe types of anemia. Even inequalities at the district level are seen to be evident. Charkhi Dadri, Rohtak and Gurgaon show the maximum anemia rates in the latest survey, with over 75% of the women falling prey

Table 1: Anemia in SC Women (15-49).

	NFHS 4 SC				NFHS 5			
district	**severe**	**moderate**	**mild**	**any anemia**	**severe**	**moderate**	**mild**	**any anemia**
Panchkula	1.24	7.45	44.72	53.42	3.7	30.56	22.69	56.94
Ambala	0	22.95	52.05	75	2.39	25.78	22.67	50.84
Yamunanagar	0.56	15.13	43.42	59.1	2.8	31.06	25.16	59.01
Kurukshetra	0	11.28	46.3	57.59	4.18	31.19	25.4	60.77
Kaithal	0.31	18.63	42.55	61.49	2.71	35.54	25	63.25
Karnal	0.87	23.62	43.44	67.93	6.07	35.46	25.88	67.41
Panipat	4.9	25.98	39.71	70.59	5.24	37.14	28.1	70.48
Sonipat	0.85	25.42	44.49	70.76	4.08	35.1	24.49	63.67
Jind	0.7	18.69	44.86	64.25	4.91	41.05	19.3	65.26
Fatehabad	1.78	19.04	45.18	65.99	4.13	37.47	22.74	64.34
Sirsa	1.43	20.24	44.52	66.19	7.11	31.38	25.94	64.44
Hisar	1.32	17.89	41.84	61.05	8.52	37.91	26.37	72.8
Rohtak	3.25	21.14	43.09	67.48	5.88	43.34	26.01	75.23
Jhajjar	2.2	19.41	46.52	68.13	4.74	39.34	19.91	63.98
Mahendergarh	1.56	22.18	44.75	68.48	5.81	37.76	22.82	66.39
Rewari	2.51	23.62	40.2	66.33	5.95	39.03	23.42	68.4
Gurgaon	5.71	26.67	40	72.38	3.8	41.85	29.35	75
Mewat	5.56	30	34.44	70	4	28.8	24	56.8
Faridabad	1.85	15.43	42.59	59.88	4.19	22.79	31.63	58.6
Palwal	2.17	23.1	39.35	64.62	3.55	26.77	30.32	60.65
Bhiwani	3.7	25	49.54	78.24	5.13	38.18	27.07	70.37
Charkhi Dadri	-	-	-	-	7.42	44.52	23.67	75.62
Total	1.74	20.27	43.9	65.91	4.83	35.14	25.02	64.99

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to it. These are the sectors that need to be put in the limelight most urgently in the sector of health and nutrition schemes. But Ambala and Panchkula have the lowest percentages of 51% to 57% which show that intervention in these sectors can be more motivational or women can be easily reached by healthcare and nutrition. Severe and moderate anemia increased exponentially in Hisar and Sirsa, while modest increases in total are noted by Ambala and Panchkula while minimal increases are seen in severe ones. Overall, the figures reflect a multifaceted picture. Haryana is not seeing a sudden decline in the overall number of SC women with anemia, but does see a transformed nature to the problem. A decrease in mild anemia may proof that better treatment and earlier detection are happening, but indicates that further advanced health and nutrition issues are yet to be addressed. For actual progress to happen, a district-specific plan of action, specifically, high-burden districts such as Karnal, Kaithal, and Sirsa, incorporating treatment as well as prevention, must be developed. Successful anemia control will ultimately include not only medical management but also improved overall diet quality, knowledge, and social support systems for women.

The table explores anemia prevalence amongst OBC women in 22 Haryana districts using two NFHS rounds — NFHS-4 (2015–16) and NFHS-5 (2019–21). Anemia prevalence overall amongst OBC women appears fairly consistent at a glance since it goes up steadily from 61.71% for NFHS-4 to 59.67% for NFHS-5. But such a small discrepancy covers up a far greater issue. Mild anemia declined from 42.62% to 24.88%, though this decline has been offset by a vast rise in moderate anemia (17.73% to 31.35%) and nearly a three-fold rise in severe anemia (1.36% to 3.44%). These are trends that have produced a situation where fewer women of today are suffering from the mildest disease, but many more women are surviving anemia in its most lethal phases. Particularly, the issue has not declined but increased. There are differences between districts as well. NFHS-5 from Panipat, Charkhi Dadri, and Gurgaon show the highest rates of anemia, indicating endemic nutrition and health issues within these districts. Ambala and Faridabad show two of the lowest rates of anemia at 49.14% and 54.05%, which may be due to improved settings or improved coverage of nutrition. All the remaining districts, such as Panipat, Sirsa, and Bhiwani, however, have demonstrated a serious rise in moderate and severe anemia, suggesting local determinants like availability of food, availability of health centres, or level of awareness affecting trends. Overall, the results prove that total prevalence among anemic OBC women of Haryana has not increased considerably, but severity of the disorder has solidified.

Table 2: Anemia in OBC Women (15-49).

	NFHS 4				NFHS 5 OBC			
district	**severe**	**moderate**	**mild**	**any anemia**	**severe**	**moderate**	**mild**	**any anemia**
Panchkula	0.67	13.14	42.76	56.57	1.64	35.25	22.95	59.84
Ambala	0.25	21.37	43.26	64.89	4.12	22.68	22.34	49.14
Yamunanagar	1.64	10.8	42.72	55.16	3.07	29.95	21.93	54.95
Kurukshetra	0.78	12.21	43.02	56.01	2.55	30.59	25.78	58.92
Kaithal	0.66	14	47.26	61.93	4.26	37.59	24.82	66.67
Karnal	0.94	16.3	50.47	67.71	4.47	34.08	23.74	62.29
Panipat	1.38	18.81	43.12	63.3	5.48	33.23	28.39	67.1
Sonipat	1.08	17.66	45.77	64.5	5.74	23.92	28.23	57.89
Jind	1.03	20.94	40.25	62.22	4.33	26.84	27.71	58.87
Fatehabad	0.67	16.14	49.33	66.14	3.26	38.04	21.2	62.5
Sirsa	1.26	20.85	36.43	58.54	3.74	23.36	28.97	56.07
Hisar	2.12	15.29	43.1	60.51	4.35	31.3	17.83	53.48
Rohtak	0.51	11.48	40.82	52.81	3.28	32.24	21.31	56.83
Jhajjar	0.98	16.11	40.67	57.76	2.86	29.52	24.76	57.14
Mahendergarh	1.09	18.63	40.99	60.71	4.92	32.38	24.09	61.4
Rewari	2.72	20.19	43.3	66.21	3.55	29.27	23.06	55.88
Gurgaon	1.74	23.31	43.36	68.41	2.26	34.96	31.2	68.42
Mewat	3.55	26.56	40.06	70.17	2.78	32.96	26.3	62.04
Faridabad	0.33	10.23	37.29	47.85	1.94	25.24	26.86	54.05
Palwal	1.26	18.24	42.45	61.95	1.17	29.45	27.41	58.02
Bhiwani	1.89	21.51	40.38	63.77	3.64	32.79	25.1	61.54
Charkhi Dadri	-	-	-	-	2.8	49.07	22.9	74.77
Total	1.36	17.73	42.62	61.71	3.44	31.35	24.88	59.67

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Ruby, et al., J Women's Health Dev 2026
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Table 3: Anemia in Other Women (15-49).

	NFHS 4 Others				NFHS 5 Others			
district	**severe**	**moderate**	**mild**	**any anemia**	**severe**	**moderate**	**mild**	**any anemia**
Panchkula	0	10.91	47.49	58.41	2.02	25.59	29.97	57.58
Ambala	0.27	16.27	49.6	66.13	1.37	17.81	21.1	40.27
Yamunanagar	0	12.34	44.48	56.82	3.27	32.15	22.07	57.49
Kurukshetra	0	7.63	39.83	47.46	2.5	25.5	26	54
Kaithal	2.2	14.1	39.21	55.51	2.07	34.48	21.72	58.28
Karnal	0.31	13.8	41.1	55.21	3.38	31.14	23.64	58.16
Panipat	0.64	19.49	45.69	65.81	4.9	30.41	29.38	64.69
Sonipat	1.36	12.27	44.55	58.18	3.95	24.86	20.15	48.96
Jind	0.62	17.39	41.61	59.63	4.03	29.75	22.6	56.38
Fatehabad	1.52	14.07	49.43	65.02	2.12	25.85	29.24	57.2
Sirsa	1.08	16.85	33.69	51.61	6.32	25.29	31.03	62.64
Hisar	0	10.59	42.37	52.97	4.64	31.13	22.19	57.95
Rohtak	0	10.28	40.65	59.03	5.8	33.98	22.1	61.88
Jhajjar	0	18.03	41.63	50.93	3.07	30.26	26.71	60.05
Mahendergarh	0.52	23.96	42.19	59.66	4.26	30.85	19.15	54.26
Rewari	0.41	20.33	44.4	66.67	3.6	32.88	29.28	65.77
Gurgaon	2.38	18.1	51.9	65.15	0.45	27.15	33.03	60.63
Mewat	5.29	22.35	41.18	72.38	3.69	25.41	29.51	58.61
Faridabad	1.6	15.43	40.16	68.82	1.89	24	26.32	52.21
Palwal	2.56	17.33	36.36	57.18	1.73	24.89	26.19	52.81
Bhiwani	0.57	18.91	39.54	56.25	3.81	42.51	19.89	66.21
Charkhi Dadri					4.59	38.92	25.41	68.92
Total	0.94	15.59	42.72	59.25	3.31	29.27	24.77	57.36

The table considers the prevalence and the changing trends of anemia in women belonging to social groups which fall under the "Others" category i.e., they are not SC, and neither are they OBC. Overall, in total, the prevalence of anemia among such women has declined by a margin, decreasing from 59.25% in NFHS-4 to 57.36% during NFHS-5. On initial glance, this could seem to be a fine trend, but on closer observation, there is a sterner trend. The percentage of women with mild anemia has dropped, from 42.72% to 24.77%, but moderate anemia rose from 15.59% to 29.27%, and severe anemia has nearly four-fold, from 0.94% to 3.31%. In effect, though fewer women are anemic in total today, more women who still suffer from anemia are at more severe levels. There can also be district variations. Bhiwani and Charkhi Dadri have the highest NFHS-5 anemia rates of 66.21 and 68.92%, respectively, and these indicate ongoing nutrition and health issues. Conversely, Sonipat and Ambala showed one of the lowest, i.e., 40% to 50%, rates, showing relatively healthier systems or better access to health care and nutrition. A few of the other districts, for example, Sirsa and Rohtak, continue to show high rates of moderate and severe anemia, showing that despite policy interventions, reasons such as poverty, food insecurity, and a lack of grassroots-level awareness still remain a leading causative factor. Nutrition education to strengthen women, increasing the availability of iron-containing foods, and integrating anemia prevention within broader maternal programs have the potential together to breed genuine, sustained change. Finally, the results indicate that although Haryana has made some behind-the-scenes gains in lowering overall anemia among women within 'Other' social segments, the severity of the issue has deepened. The issue now is not merely about reducing numbers, but how to deal with the harsher and more cumulative realities behind the numbers so that women are no longer merely surviving anemia, but living healthier, stronger lives.

Geographical trends in NFHS-4 data show that mild anemia among women widely differ by location and caste. The issue is worse for central and western districts SC women in Hisar, Kaithal, and Sirsa, and OBC women in Karnal, Jind, and Kurukshetra. Meanwhile, districts such as Palwal and Gurugram are less common with respect to mild anemia. Women from Other groups have a more uniform pattern, but they too have fairly high rates in certain regions. Anemia in general is very common in the state as a whole,

Ruby, et al., J Women's Health Dev 2026
DOI:10.26502/fjwhd.2644-288400146

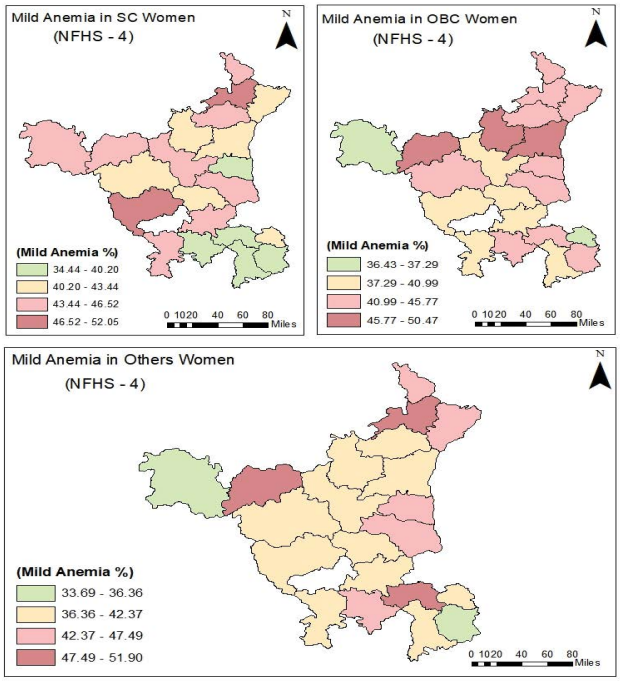

Figure 1: Mild Anemia among Women (15-49) in Various Social Groups (NFHS-4).

but has extremely debilitating effects on SC and OBC women, indicating the persistent consequences of social and economic disparities. Such results indicate the need for special, region-specific health programs that not only enhance nutrition but also attempt to deal with the underlying structural determinants of these differentials. (Data were not available for Charkhi Dadri at the time of the survey)

NFHS-4 maps indicate distinct geographical and caste-wise patterns of women's moderate anemia in Haryana. The ailment is largest in the western and southern regions of the state, i.e., Bhiwani, Mahendergarh, Rewari, and Hisar districts, where over one-fifth of women are affected by moderate anemia. The ailment is the largest among Scheduled Caste (SC) and Other Backward Class (OBC) women. Contrarily, the northern regions, such as Panchkula and Ambala, have very low rates, reflecting improved nutrition and health care. Women of the Other social group have a more evenly distributed incidence, although moderate anemia is prevalent in some southern and western regions. Overall, the maps indicate that moderate anemia is a significant issue, closely associated with local disadvantage and social inequality. To put an end to this problem, there will have to be interventionist public health action on high-burden blocks and better nutrition and care access for poor women. (Charkhi Dadri data was unavailable at the time of the survey)

The NFHS-4 maps show sharp regional and caste-wise differences in severe anemia among women of Haryana. While the overall prevalence is low, severe anemia prevails in the southern and western districts, namely Rewari, Bhiwani, Mahendergarh, and Sirsa, and also in Scheduled Caste (SC) and Other Backward Class (OBC) women. Conversely, northern regions like Panchkula, Ambala, and Karnal have extremely low prevalence levels, typically below 1%, reflecting improved nutrition and health. Women from Other social classes are having the lowest severe anemia, with hardly any districts reporting more than 2.5%. The maps typically note that severe anemia continues to be geographically and socially clustered, and this reflects the long-term effects of caste-based socioeconomic inequities. These high-burden areas and risk groups need special programs of nutrition, health care access, and social equality. (No data were available for Charkhi Dadri at the time of the survey).

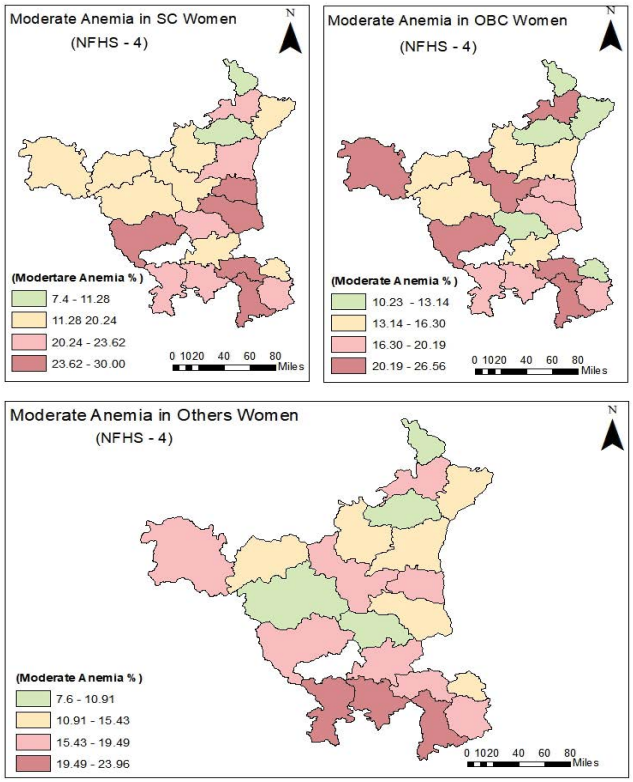

Figure 2: Moderate Anemia among Women (15-49) in Various Social Groups (NFHS-4).

The map indicates the extent to which mild anemia is prevalent among women of all social groups, although the severity of this varies across states. NFHS-5 statistics indicate that SC and OBC women still report slightly higher cases of mild anemia, particularly from central and southern districts, where prevalence is largely above 27 percent. In comparison, the north and northeast regions of the state report lower proportions. Although mild anemia is a lesser condition than others, the prevalence shows that a high percentage of women still experience underlying malnutrition. The persisting regional patterns at all social levels imply that geography and local environmental conditions are significant determinants of women's health outcomes, and this indicates the need for area-based and socially targeted nutrition interventions.

Ruby, et al., J Women's Health Dev 2026
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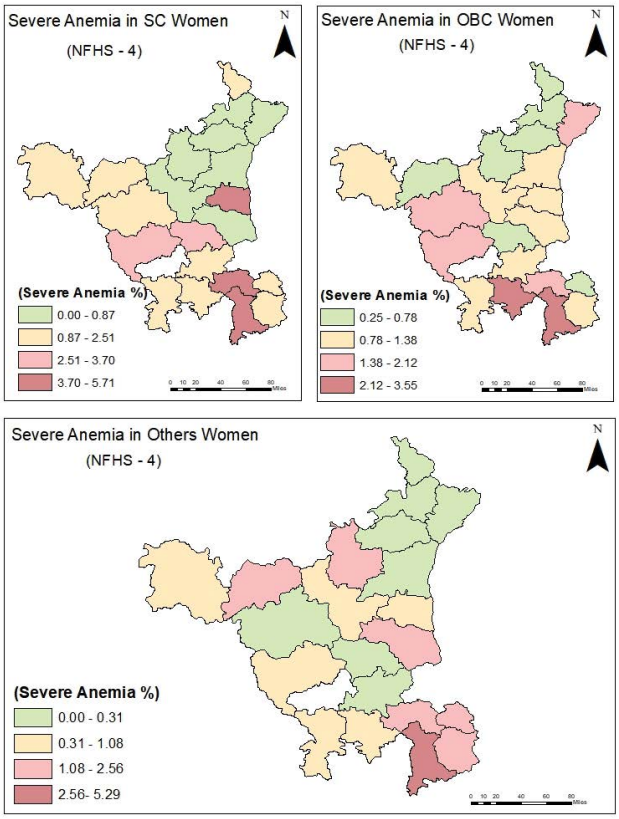

Figure 3: Severe Anemia among Women (15-49) in Various Social Groups (NFHS-4).

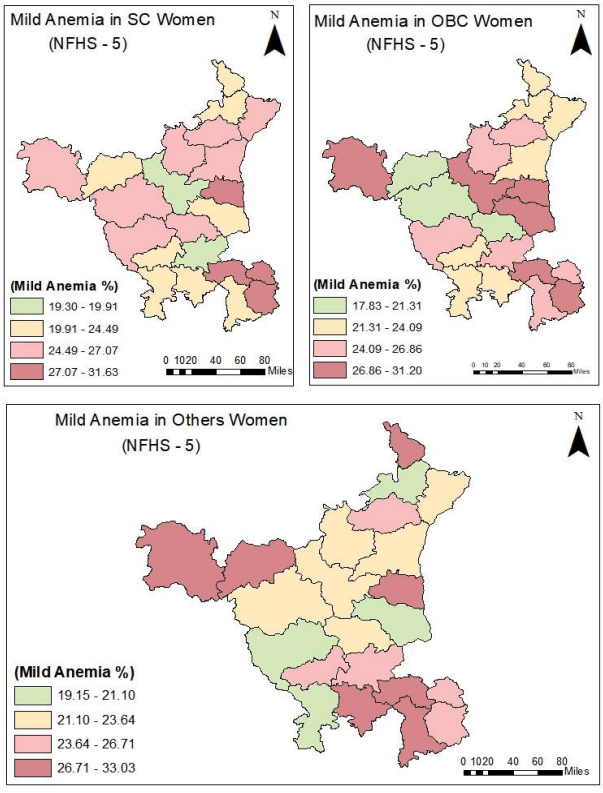

Figure 4: Mild Anemia among Women (15-49) in Various Social Groups (NFHS-5).

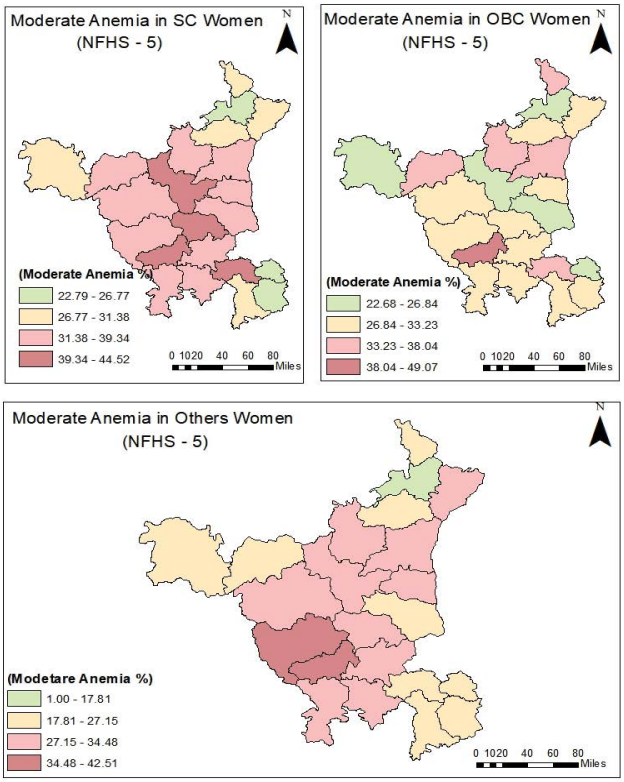

Figure 5: Moderate Anemia among Women (15-49) in Various Social Groups (NFHS-5).

The map indicates that moderate degree anemia is a common health condition among women from every social group, according to NFHS-5 figures. It prevails among SC and OBC women, with all the central and most of the state's southern districts reporting above 40 percent. Moderate anemia rates are not prevalent in northern women and certain eastern districts. Though variation within patterns for populations is subtle, the cross-sectional perspective delineates clear social and geographical differentials. Consequences are that women's health remains influenced by living conditions and access to nutrition, and interventions are necessary to be supplied where risky settings and socially disadvantaged groups are found.

The map shows where women frequently suffer from severe anemia in districts and classes in the state according to NFHS-5 findings. Indeed, their place of residence and class do seem to matter. SC women have the highest proportion of severe anemia in central and south districts, where it is most common. For OBC and Other women, the numbers are lower in number but the regional patterns are similar — lower rates in northeast and north regions. Generally, the map is picking up social and regional variations, and some communities and regions have much larger effects than others. They illustrate the requirement of targeted health interventions and nutrition programs with special emphasis on socially disadvantaged groups and high-risk areas.

The following figure and table indicate the trend of women's anemia rate in NFHS-4 and NFHS-5 based on

Ruby, et al., J Women's Health Dev 2026
DOI:10.26502/fjwhd.2644-288400146

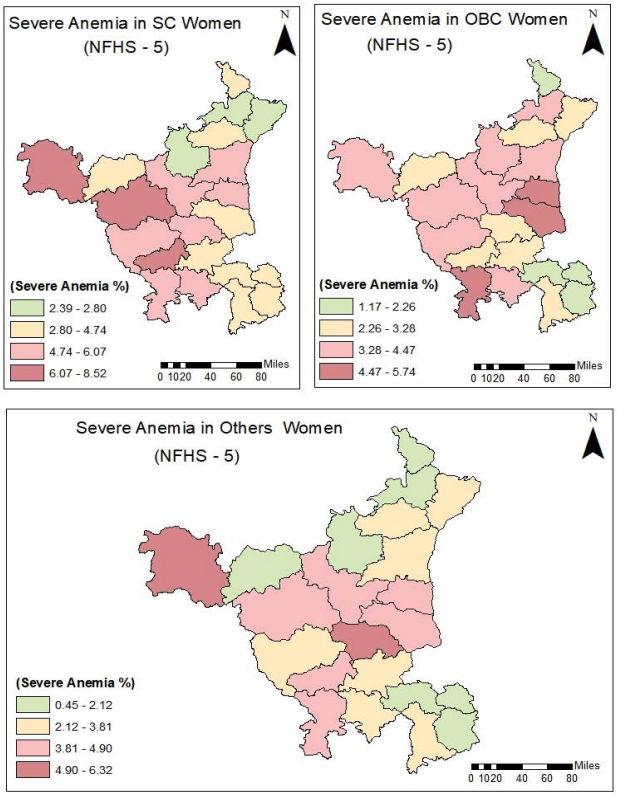

Figure 6: Severe Anemia among women (15-49) in Various Social Groups (NFHS-5).

compound annual decrement rate (CADR). Ambala, Hisar, Rohtak, and Jhajjar districts indicate phenomenal progress, indicating a comparatively superior programme and better health outcomes. But districts such as Panchkula, Kurukshetra, Kaithal, and Sonipat indicate the decline in performance, indicating upcoming gaps and issues in the health facilities, community mobilisation and policy implementation. Disparity in the difference of prevalence and CADR values indicates unequal improvement across districts in Haryana. Even though some districts are progressive but several districts remain far from achieving the 2025 targets, which were set to reduce anemia by half. The findings suggest that there are intrastate disparities, needs region region-specific policies to reduce anemia prevalence to ensure equal and sustained progress.

Conclusion

In Haryana, according to NFHS-4 (2015–16) and NFHS-5 (2019–21) estimates, Anemia in women is a tale of successive increase with intergenerational piling up of concern. Although the percentage of anemic women overall has gone down slightly by caste groups — from 66.1% to 65.0% among Scheduled Caste (SC) women, 61.3% to 59.9% among Other Backward Class (OBC) women, and 59.5% to 57.9% among women belonging to Other social groups — its severity has gone up in almost all groups. Fewer women are being labelled as mildly anemic, and more have moderate

Table 4: Anemia Trends, CADR, and 2025 projection.

District	NFHS-4	NFHS-5	Difference	CADR	Required Change	Required CADR	2025 goal
Panchkula	53.42	56.94	-3.52	1.28	26.7	-12.94	44.32
Ambala	75	50.84	24.16	-7.48	37.5	-12.94	34.46
Yamunanagar	59.1	59.01	0.09	-0.03	29.6	-12.94	58.52
Kurukshetra	57.59	60.77	-3.18	1.08	28.8	-12.94	51.66
Kaithal	61.49	63.25	-1.76	0.56	30.7	-12.94	58.13
Karnal	67.93	67.41	0.52	-0.15	34.0	-12.94	66.91
Panipat	70.59	70.48	0.11	-0.03	35.3	-12.94	70.37
Sonipat	70.76	63.67	7.09	-2.08	35.4	-12.94	57.34
Jind	64.25	65.26	-1.01	0.31	32.1	-12.94	62.28
Fatehabad	65.99	64.34	1.65	-0.5	33.0	-12.94	62.76
Sirsa	66.19	64.44	1.75	-0.53	33.1	-12.94	61.81
Hisar	61.05	72.8	-11.75	3.58	30.5	-12.94	42.39
Rohtak	67.48	75.23	-7.75	2.19	33.7	-12.94	54.07
Jhajjar	68.13	63.98	4.15	-1.24	34.1	-12.94	60.13
Mahendergarh	68.48	66.39	2.09	-0.61	34.2	-12.94	64.41
Rewari	66.33	68.4	-2.07	0.61	33.2	-12.94	62.39
Gurgaon	72.38	75	-2.62	0.71	36.2	-12.94	67.4
Mewat	70	56.8	13.2	-4.09	35.0	-12.94	46.1
Faridabad	59.88	58.6	1.28	-0.43	29.9	-12.94	57.35
Palwal	64.62	60.65	3.97	-2.09	32.3	-12.94	52.31
Bhiwani	78.24	70.37	7.87	-2.09	39.1	-12.94	63.34
Charkhi Dadri	-	75.62	-75.62	-	0.0	-12.94	-

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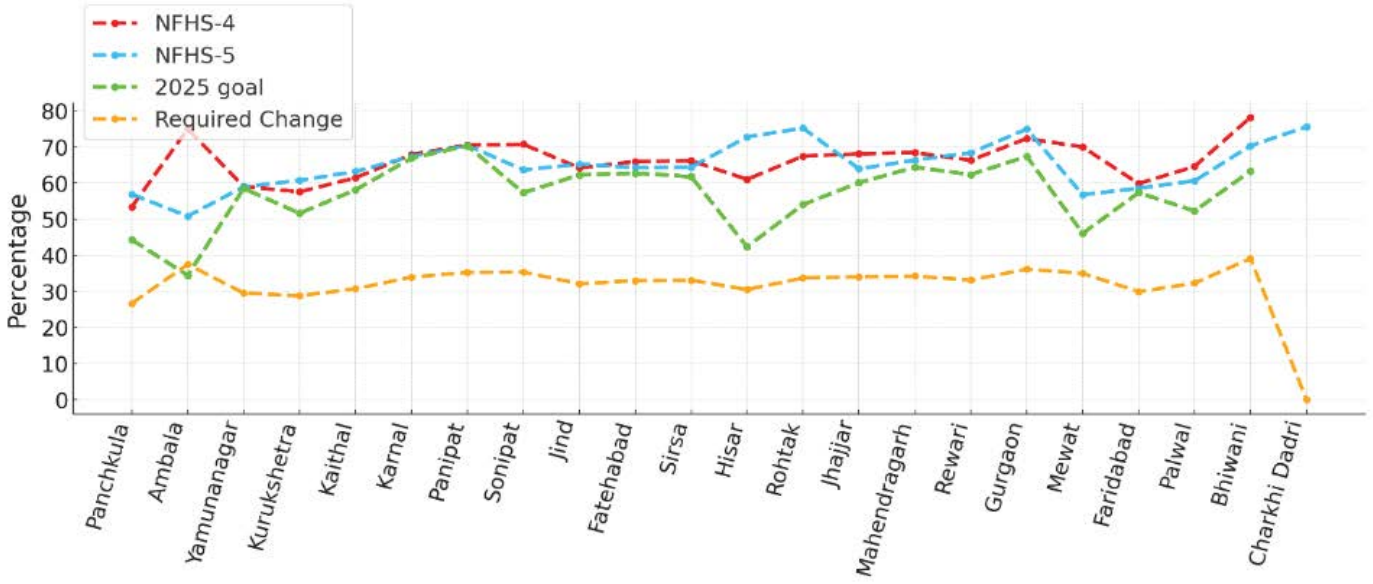

Figure 7: Anemia Trends and 2025 projection.

and severe anemia, which indicates that although there is some improvement in detection and initial management, the causes of anemia are not yet being well-addressed. Geographically, the issue is not even. All such districts as Karnal, Kaithal, Hisar, and Jind still have the highest anemia prevalence, sometimes reaching 68–70%, whereas Ambala and Panchkula always record the lowest. These discrepancies are the result not so much of differences in geography as it applies to diet and access to healthcare but of the social inequality upon which women's health also rests. Throughout the state, SC women suffer the most, followed by OBC and Other categories, a reminder of how economic class and caste continue to exert pressure on health. Although there have been national initiatives such as Anemia Mukt Bharat that have enhanced the coverage of treatment and information, these have not been universal for all strata of people. Women from poor and socially and economically weaker sections of people continue to be exposed to restriction in the quality of diet, poverty, and restricted access to health care. In all these gaps, Haryana must extend more targeted, locally tailored interventions beyond the administration of iron supplements. Prevention of anemia would thus involve spending on women's nutrition, the intensification of health outreach at a mass level, and the correction of the structural inequities that are perpetuating ill health among poorer segments. Briefly, while there has been some betterment on the part of Haryana in reducing the incidence of anemia, the issue has now surfaced as one of equity rather than prevalence and one of severity. Control of anemia in the coming years is not so much a question of improved statistics as it is of guaranteeing all women, class or caste, an equal right to a healthy and well-fed existence.

References

1. Liu C, Zhou R, Peng X, et al. Relationship between Depressive Symptoms and Anemia among the Middle-Aged and Elderly: A Cohort Study over 4 Years. BMC Psychiatry 23 (2023).
2. Hess SY, Owais A, Jefferds ME, et al. Accelerating Action to Reduce Anemia: Review of Causes and Risk Factors and Related Data Needs. Annals of the New York Academy of Sciences 1523 (2023): 11.
3. Singh S, Arora I, Singh S. Prevalence of Anemia in Blood Donors: A Retrospective Study in Rural Tertiary Care Centre (Chamba, Himachal Pradesh, India). International Journal of Community Medicine and Public Health 5 (2018): 2572.
4. Zulfiqar H, Shah I, Sheas MN, et al. Dietary Association of Iron Deficiency Anemia and Related Pregnancy Outcomes. Food Science & Nutrition 9 (2021): 4127.
5. Jha KK, Regmi D. Prevalence of Anaemia among Patients Attending Central Laboratory at a Tertiary Care Centre in Nepal. Meds Alliance Journal of Medicine and Medical Sciences 1 (2021): 8.
6. Scholl TO. Iron Status during Pregnancy: Setting the Stage for Mother and Infant. American Journal of Clinical Nutrition 81 (2005).
7. Pathan NF, Noor B, Unar F, et al. Assessment of the Anemic Conditions among the Females with Pregnancy at Tertiary Care Hospitals of Sindh, Pakistan. Journal of Pharmaceutical Research International 33 (2021): 87.
8. Bailey RL, West KP, Black RE. The Epidemiology of Global Micronutrient Deficiencies. Annals of Nutrition and Metabolism 66 (2015): 22.

Ruby, et al., J Women's Health Dev 2026
DOI:10.26502/fjwhd.2644-288400146

9. Intan IGA, Munayarokh M, Rofiah S. Side Effects Experienced on the Behaviour of Pregnant Women Consuming Iron Tablets. Midwifery and Nursing Research 2 (2020): 69.

10. Kintan, et al. Factors Affecting Anaemia among Pregnant Women in Tegalrejo Public Health Center (2019).

11. Dudwe R, Singh N. Study of the Prevalence and Pattern of Anaemia in Unmarried Anaemic Females Aged 15–30 Years. SSR Institute of International Journal of Life Sciences 6 (2020): 2469.

12. Pradhan, et al. Dynamics of Caste and Early Childbearing in India: A Perspective of Three Decades. BMC Women's Health 24 (2024): 1-11.

13. Sharif, et al. Prevalence of Anemia among Reproductive Women in Different Social Groups in India: Cross-Sectional Study Using Nationally Representative Data. PLOS ONE 18 (2023): 1-22.

14. Hashmi, Singh. Unveiling the Hidden Story of Anemia among Indian Muslim Women: A Comprehensive Analysis from 1998 to 2021. Frontiers in Nutrition 12 (2025): 1-16.

15. Rahman, et al. Maternal Anemia and Risk of Adverse Birth and Health Outcomes in Low- and Middle-Income Countries: Systematic Review and Meta-Analysis. American Journal of Clinical Nutrition 103 (2016): 495-504.

16. Ghosh S. Exploring Socioeconomic Vulnerability of Anaemia among Women in Eastern Indian States. Journal of Biosocial Sciences 41 (2009): 763-787.

17. Bentley M, Griffiths P. The Burden of Anemia among Women in India. European Journal of Clinical Nutrition 57 (2003): 52-60.

18. Venkatesh, et al. Micronutrients' Deficiency in India: A Systematic Review and Meta-Analysis. Journal of Nutrition Sciences 10 (2021): 1-11.

19. Swaminathan, et al. Dietary Iron Intake and Anemia Are Weakly Associated, Limiting Effective Iron Fortification Strategies in India. Journal of Nutrition 149 (2019): 831-839.

20. Biradar. Anaemia Status of Preconception Young Married Women in India. Journal of Biosocial Sciences 54 (2021): 672-681.

21. Osborn, et al. Prevalence and Correlates of Anemia among Women in the Reproductive Age (15–49 Years) in a Rural Area of Tamil Nadu: An Exploratory Study. Journal of Education and Health Promotion 10 (2018): 355.

22. Rai, et al. Shooting Shadows: India's Struggle to Reduce the Burden of Anaemia. British Journal of Nutrition 129 (2023): 416-427.

23. World Health Organization. Physical Activity Fact Sheet. Geneva: World Health Organization (2017).

24. Das, et al. Who Is Anaemic in India? Intersections of Class, Caste, and Gender. Journal of Biosocial Sciences 56 (2024): 731-753.

25. Dudwe R, Singh N. Study of the Prevalence and Pattern of Anaemia in Unmarried Anaemic Females Aged 15–30 Years. SSR Institute of International Journal of Life Sciences 6 (2020): 2469.

26. Mahmood, et al. The Association between Iron-Deficiency Anemia and Adverse Pregnancy Outcomes: A Retrospective Report from Pakistan. Cureus (2019).

27. Sekher TV, Alagarajan M. Concurrent Monitoring and Process Review of the Pradhan Mantri Matru Vandana Yojana (PMMVY) in Assam, Bihar and Maharashtra. Mumbai: International Institute for Population Sciences (2019).

Citation: Ruby, Anil, Lalit Sharma. The Burden of Anemia: A Study of SC Women's Health in Haryana. Journal of Women's Health and Development. 9 (2026): 18-22.