

District-wise Trends and Determinants of Anaemia among Children Aged 6–59 Months in Tamil Nadu: Evidence from NFHS-4 (2015–16) and NFHS-5 (2019–21)

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Abstract: Anaemia is a major global public health problem that disproportionately affects young children and pregnant women. According to the World Health Organization (WHO), approximately 42% of children under five years of age and 40% of pregnant women worldwide are affected by anaemia. Beyond its direct health consequences, anaemia contributes to poor growth and development, impaired cognitive performance, low birth weight, stunting, wasting, and other nutritional disorders. This study aimed to assess the prevalence and district-wise distribution of anaemia among children aged 6–59 months in Tamil Nadu and to identify the socio-demographic and dietary factors associated with childhood anaemia. This study was based on secondary data obtained from the National Family Health Survey (NFHS)-4 (2015–16) and NFHS-5 (2019–21). District-wise trends in childhood anaemia were examined using data from both survey rounds, while detailed analyses of associated factors were performed using NFHS-5 data. The analysis included the prevalence of severe, moderate, and mild anaemia, along with selected dietary, socioeconomic, and demographic characteristics. Descriptive statistics, comparative analyses, and binary logistic regression were performed using SPSS software. The findings revealed that the prevalence of severe anaemia was highest in the districts of Villupuram, Namakkal, Madurai, Cuddalore, and Perambalur. Binary logistic regression analysis indicated that one-year-old children were significantly more likely to be anaemic than children in other age groups. Children with a birth order of 2–3 had higher odds of anaemia than first-born children. Male children were more likely to be anaemic than female children, while children residing in rural areas had 1.3 times higher odds of anaemia than those living in urban areas. Compared with Scheduled Caste children, children belonging to the Other Backward Classes (OBC) had significantly lower odds of being anaemic. Maternal education, maternal employment status, household wealth index, and consumption of dark green leafy vegetables were not significantly associated with childhood anaemia. Childhood anaemia remains a significant public health challenge in Tamil Nadu, with considerable district-level variation. The findings highlight the need for targeted nutritional interventions, early screening programmes, and district-specific public health strategies, particularly in high-burden districts. Strengthening child nutrition services and improving access to preventive and curative healthcare can contribute to reducing the burden of childhood anaemia and improving child health outcomes.

Keywords: Childhood anaemia; Tamil Nadu; NFHS-4; NFHS-5; District-wise analysis; Logistic regression; Nutritional status.

Introduction

Anaemia is a condition characterized by a lower-than-normal concentration of haemoglobin or a reduced number of red blood cells, resulting in a decreased capacity of the blood to transport oxygen to the body's tissues. Haemoglobin is essential for oxygen transport, and inadequate levels can lead to symptoms such as fatigue, weakness, dizziness, shortness of breath, and impaired physical performance. The haemoglobin concentration required to meet physiological needs varies according to age, sex, altitude, smoking status, and pregnancy. Nutritional deficiencies, particularly iron deficiency, along with deficiencies of folate and other micronutrients, are among the most common causes of anaemia.

Anaemia is a major global public health concern that disproportionately affects young children and pregnant women. According to the World Health Organization (WHO), approximately 42% of children under five years of age and 40% of pregnant women worldwide are affected by anaemia. The burden is particularly high in low- and middle-income countries, where inadequate dietary intake, recurrent infections, poor sanitation, and limited access to quality healthcare contribute to its high prevalence. Because of its widespread occurrence and adverse health consequences, reducing anaemia remains a global public health priority.

The consequences of anaemia extend beyond reduced haemoglobin levels. In children, anaemia impairs cognitive development, learning ability, immune function, and physical growth, increasing susceptibility to infections and poor educational performance. In pregnant women, anaemia is associated with adverse maternal and neonatal outcomes, including maternal mortality, preterm birth, low birth weight, and increased risk of infant mortality. Iron deficiency anaemia, the most common form of anaemia, adversely affects cognitive and physical development in children and reduces work productivity among adults, thereby contributing to substantial social and economic losses.

Anaemia is widely recognized as an indicator of both poor nutritional status and poor overall health. It is closely associated with other forms of malnutrition, including stunting, wasting, and micronutrient deficiencies. Inadequate intake of essential nutrients weakens the immune system, impairs brain development, and increases the risk of multiple health conditions, including anaemia and vitamin deficiency disorders. Conversely, unhealthy dietary patterns characterized by excessive consumption of energy-dense foods high in fat, sugar, and salt contribute to overweight, obesity, and an increased burden of non-communicable diseases. Thus, addressing anaemia requires a comprehensive nutritional approach that simultaneously tackles undernutrition, micronutrient deficiencies, and poor dietary quality.

Despite sustained efforts through national nutrition and anaemia control programmes, childhood anaemia continues to remain a significant public health challenge in India. The burden varies considerably across states and districts because of differences in socioeconomic conditions, dietary practices, maternal education, healthcare utilization, sanitation, and access to nutrition services. Tamil Nadu has implemented several maternal and child health initiatives to improve nutritional outcomes; however, substantial district-level disparities in childhood anaemia persist.

Understanding the geographical distribution and determinants of childhood anaemia is essential for designing targeted interventions and strengthening existing nutrition programmes. Therefore, the present study aims to examine the district-wise prevalence and trends of anaemia among children aged 6–59 months in Tamil Nadu using data from the National Family Health Survey (NFHS)-4 (2015–16) and NFHS-5 (2019–21). In addition, the study investigates the socioeconomic, demographic, and dietary factors associated with childhood anaemia to provide evidence for developing effective public health policies and district-specific intervention strategies.

Review of Literature

Malnutrition remains one of the most significant public health challenges worldwide, affecting millions of children and adults across both developing and developed countries. Although considerable progress has been achieved over recent decades, all forms of malnutrition—including undernutrition, micronutrient deficiencies, overweight, obesity, and diet-related non-communicable diseases (NCDs)—continue to pose major threats to global health. According to global estimates, the number of stunted children under five years of age declined from 198 million in 2000 to 155 million in 2016, reflecting substantial improvements in child nutrition worldwide. The Global Nutrition Report further indicates that several countries are on track to achieve the global targets for reducing stunting and wasting among children under five years of age by 2025. Similarly, the age-standardized prevalence of low body mass index (BMI) among adults has declined globally since 1975. Among men, the prevalence decreased from 13.8% in 1975 to 8.8% in 2014, while among women it declined from 14.6% to 9.7% during the same period. Despite these improvements, progress towards eliminating all forms of malnutrition remains uneven and insufficient across many regions.

Undernutrition and micronutrient deficiencies continue to impose a substantial health burden, particularly in low- and middle-income countries. Approximately 52 million children worldwide continue to suffer from wasting, with more than two-thirds residing in Asia. Furthermore, the number of stunted children remains high in many low-income countries. South Asia continues to experience a high prevalence of low BMI among adults, with reported rates of 23.4% among men and 24.0% among women in 2014. Iron deficiency remains one of the most widespread nutritional deficiencies globally, with an estimated 264 million women of reproductive age affected by iron-

deficiency-related anaemia. These findings underscore the persistent burden of micronutrient deficiencies despite ongoing public health interventions.

Alongside undernutrition, overweight, obesity, and diet-related non-communicable diseases have increased rapidly across the globe. Recent estimates indicate that approximately 1.9 billion adults, representing nearly 38% of the global adult population, and 41 million children under five years of age are overweight. The rising prevalence of obesity has contributed substantially to the increasing burden of cardiovascular diseases, diabetes, hypertension, and other chronic conditions, making heart disease and stroke the leading causes of mortality worldwide.

The coexistence of undernutrition and overweight, commonly referred to as the double burden of malnutrition, has emerged as a major public health concern. Many countries now experience simultaneous challenges of child stunting, micronutrient deficiencies, adult overweight, obesity, and diet-related non-communicable diseases. In 2016, nearly half of the countries assessed globally reported significant levels of both child stunting or anaemia and adult overweight. These multiple forms of malnutrition frequently coexist within the same communities, households, and even individuals. Evidence also suggests important biological links between childhood undernutrition and later-life obesity and chronic diseases, indicating that early nutritional deprivation may increase the risk of adverse health outcomes during adulthood.

Recognizing these interconnected challenges, the World Health Organization has promoted the concept of double-duty actions, which are interventions, programmes, and policies designed to simultaneously address undernutrition and overweight while reducing the risk of diet-related non-communicable diseases. The first principle of this approach emphasizes ensuring that interventions targeting one form of malnutrition do not unintentionally increase the risk of another. For example, agricultural policies aimed solely at increasing staple crop production have successfully improved food availability but have sometimes reduced dietary diversity by limiting the production and consumption of micronutrient-rich foods. Future nutrition programmes should therefore prioritize both food security and dietary quality.

The second component of the double-duty approach focuses on strengthening existing interventions so that they address multiple forms of malnutrition simultaneously. Experiences from Latin America demonstrate that while investments in sanitation, women's education, cash transfer programmes, and healthcare substantially reduced childhood stunting, these programmes often did not adequately promote healthy dietary practices, contributing to increasing obesity rates. Integrating nutrition education into school meal programmes, improving dietary quality within social protection schemes, and encouraging healthy food choices can generate broader health benefits and contribute to reducing both undernutrition and obesity. Such integrated strategies are essential for achieving sustainable improvements in population nutrition and advancing global health and development goals.

Anaemia represents one of the most common micronutrient deficiencies worldwide and remains a critical indicator of poor nutritional and health status, particularly among young children. Although several national programmes have been implemented to reduce childhood anaemia in India, substantial variations continue to exist across states and districts because of differences in socioeconomic conditions, dietary practices, maternal education, healthcare utilization, and access to nutrition services. Tamil Nadu has made considerable progress in maternal and child health; however, district-level disparities in childhood anaemia remain an important public health concern. Therefore, examining the district-wise prevalence and determinants of childhood anaemia is essential for identifying high-burden areas and developing targeted interventions. Accordingly, the present study aims to assess the prevalence of anaemia among children across the districts of Tamil Nadu and to examine the socioeconomic, demographic, and dietary factors associated with childhood anaemia using data from the National Family Health Survey.

Methodology

Study Design

This study employed a cross-sectional secondary data analysis using nationally representative data from the National Family Health Survey (NFHS)-4 (2015–16) and NFHS-5 (2019–21). The district-wise prevalence and trends of childhood anaemia in Tamil Nadu were examined by comparing estimates from both survey rounds. Further analyses of the determinants of childhood anaemia were conducted using NFHS-5 data, as it provides the most recent and comprehensive information on child health and nutrition.

Data Source

The National Family Health Survey (NFHS) is a large-scale, nationally representative household survey conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India. The survey collects information on population, health, nutrition, reproductive and child health, and socioeconomic characteristics. The present study utilized publicly available unit-level data from NFHS-4 (2015–16) and NFHS-5 (2019–21) for the state of Tamil Nadu.

Study Population

The study included children aged 6–59 months residing in Tamil Nadu who had valid haemoglobin measurements recorded during the NFHS survey. Children with incomplete or missing information on the study variables were excluded from the analysis.

Study Variables

The primary outcome variable was childhood anaemia, categorized according to the WHO haemoglobin classification as severe, moderate, mild, and not anaemic. District-wise prevalence of each category was estimated using NFHS-4 and NFHS-5 data.

Independent variables included selected socio-demographic, economic, and dietary characteristics, such as the child's age, sex, birth order, place of residence (urban/rural), social group (caste), maternal education, maternal employment status, household wealth index, and selected food consumption variables, including the intake of dark green leafy vegetables.

Statistical Analysis

Descriptive statistics were used to summarize the prevalence of childhood anaemia across districts of Tamil Nadu. Comparative analyses were performed to assess changes in the prevalence of severe, moderate, and mild anaemia between NFHS-4 and NFHS-5. Binary logistic regression analysis was employed to identify factors associated with childhood anaemia and to estimate adjusted odds ratios (AORs) with corresponding 95% confidence intervals (CIs). Statistical analyses were performed using IBM SPSS Statistics, and statistical significance was considered at a p -value < 0.05 .

Results: -

As per NHFS-5, percent distribution of anaemic level by background characteristics is presented in the following Table.

Table 1. Prevalence of Anaemia among Children Aged 6–59 Months by Selected Background Characteristics in Tamil Nadu, NFHS-5 (2019–21)

Background Characteristics	Percentage of Anaemia Level				Number of Anaemic Children
	Severe	Moderate	Mild	Not Anaemic	
Current Age of Child					
0	2.5	32.1	31.0	34.4	1078
1	1.8	39.4	28.0	30.7	1962
2	2.5	32.9	25.7	38.9	1868
3	1.5	25.8	27.0	45.7	1923
4	1.1	14.9	25.5	58.6	1963
Birth Order					
1	1.6	24.7	29.0	44.6	4262
2-3	2.0	32.1	25.4	40.5	4417
3-6	0.9	43.6	23.9	31.6	117
Sex of Child					
Male	1.8	30.4	26.5	41.3	4735
Female	1.7	26.7	27.8	43.7	4058

Type of Place of Residence					
Urban	1.1	24.9	27.9	46.1	3877
Rural	2.3	31.6	26.5	39.5	4918
Religion					
Hindu	1.8	29.1	27.1	42.0	8064
Muslim	1.8	28.1	26.0	44.1	281
Christian	1.1	21.6	28.7	48.7	450
Caste					
Schedule Caste	2.1	29.5	30.5	37.8	2616
Schedule Tribe	4.3	45.7	24.7	25.3	162
OBC	1.6	27.7	25.7	44.9	5867
Others	0.0	31.6	22.8	45.6	136
Mothers Educational Level					
No Education	1.8	38.7	32.1	27.4	168
Primary	4.9	31.5	30.3	33.3	426
Secondary	1.9	30.3	25.6	42.3	4780
Higher	1.3	25.6	28.6	44.5	3420
Working Status					
Working	2.1	22.4	30.6	44.8	330
Not working	1.4	23.7	30.0	44.8	1142
Wealth Index					
Poorest	1.7	33.5	27.0	37.8	233
Poorer	3.2	32.7	28.6	35.5	1139
Middle	2.7	32.1	25.0	40.0	2588
Richer	1.4	28.0	27.1	43.5	2832
Richest	0.4	22.4	29.1	48.1	2004

Higher percent of children have mild anaemia and severe anaemia exists among children aged below 1 year and severe anaemia is more among children of age 2 as well. Moderate anaemia is more among one-year-old children (Table 1). Severe anaemia is higher among birth order of children 2-3 years, moderate anaemia is higher among birth order 3-6 years and mild anaemia is higher among birth order one than their counterparts. Prevalence of severe anaemia, moderate anaemia is higher among male children whereas mild anaemia is slightly higher among female children.

Prevalence of anaemia among children aged below 5 years is higher among rural children compared to urban children. Similarly, anaemia is higher among children belonging to Hindu religion than other religion. Prevalence of severe anaemia among children belonging to other caste is higher, prevalence of moderate anemia is higher among children belonging to Scheduled tribe and mild anaemia is higher among children belonging to Scheduled caste as compared to their counterparts. Prevalence of severe anaemia among children whose mothers. Completed primary education is higher whereas prevalence of mild and moderate anemia is higher among children whose mothers are illiterate. Prevalence of severe anemia is more among children whose mothers are working compared

with children of non-working mothers. Percent of children suffering from mild and moderate anemia is higher among children from household belonging to middle, richer and richest wealth quintiles compared to other women. It is also found that prevalence of mild anemia does not differ much across the wealth quintiles.

Table 2. Prevalence of Anaemia among Children Aged 6–59 Months by Frequency of Consumption of Selected Food Items in Tamil Nadu, NFHS-5 (2019–21)

Frequency of Consumption	Percentage of Anemia Level				Total number of Children
	Severe	Moderate	Mild	Not Anemic	
Take Milk or Curd					
Never	3.0	27.8	26.7	42.5	266
Daily	1.8	27.9	27.2	43.0	7145
Weekly	1.0	34.4	24.3	40.3	774
Occasionally	2.0	30.3	29.5	38.2	610
Pulses or Beans					
Never	0.0	20.4	28.6	51.0	49
Daily	2.1	28.5	25.3	44.1	2565
Weekly	1.4	28.5	28.1	42.0	5238
Occasionally	3.2	30.8	26.4	39.6	941
Dark Green Leaf Vegetables					
Never	5.7	32.1	22.6	39.6	53
Daily	2.6	28.5	28.6	40.2	918
Weekly	1.5	28.7	27.3	42.5	6717
Occasionally	2.4	28.3	25.2	44.1	1105
Fruits					
Never	0.0	40.0	30.0	30.0	80
Daily	1.2	25.3	28.2	45.4	1872
Weekly	1.5	28.2	27.5	42.9	4047
Occasionally	2.8	31.3	25.8	40.1	2796
Eggs					
Never	1.8	28.9	28.9	40.4	218
Daily	1.9	26.9	27.3	43.9	1671
Weekly	1.6	28.2	27.4	42.7	5937
Occasionally	2.8	34.4	24.4	38.4	967
Fish					
Never	2.3	27.5	25.7	44.6	444
Daily	0.8	25.9	29.5	43.7	359
Weekly	1.5	28.4	27.4	42.7	5512
Occasionally	2.5	29.9	26.3	41.3	2479
Chicken or Meat					
Never	1.6	30.2	27.2	41.0	507
Daily	0.0	17.6	17.6	64.7	68
Weekly	1.6	27.1	27.9	43.4	5348
Occasionally	2.3	31.6	25.8	40.3	2870

A higher percentage of children who never consume milk or curd, consume pulses or beans occasionally, never consume dark green leafy vegetables, occasionally consume fruits, eggs, fish, chicken or meat is affected with severe anemia. A higher percentage of children who occasionally consume milk or curd, consume pulses or beans, never consume dark green leafy vegetables, occasionally consume fruits, eggs, fish, chicken or meat is affected with moderate anaemia.

Children who occasionally consume milk or curd, never consume pulses or beans, daily consume dark green leaf vegetables, never consume fruits, eggs, daily consume fish and weekly consume chicken or meat have risk of mild anemia.

Anaemia is a condition that is marked by low levels of hemoglobin in the blood. Iron deficiency is estimated to be responsible for about half of all anaemia globally, but anaemia can also be caused by malaria, hookworms and other nutritional deficiencies, chronic infections, and genetic conditions. Anaemia is a major health problem in Tamil Nadu, especially among women and children. Table 3 presents prevalence of anaemia by age group of children below age 5 for NFHS-5 and NFHS-4.

Table 3. Age-specific Prevalence of Anaemia among Children Aged 6–59 Months: A Comparison between NFHS-4 (2015–16) and NFHS-5 (2019–21) in Tamil Nadu

Current age of child	NFHS-5				NFHS-4			
	Severe	Moderate	Mild	Not anemic	Severe	Moderate	Mild	Not anemic
0	2.5	32.1	31.0	34.4	0.3	25.0	29.7	44.9
1	1.8	39.4	28.0	30.7	1.7	31.3	28.3	38.7
2	2.5	32.9	25.7	38.9	0.8	24.4	27.6	47.2
3	1.5	25.8	27.0	45.7	0.5	17.9	26.7	54.9
4	1.1	14.9	25.5	58.6	0.9	15.0	26.5	57.6
Total	1.8	28.7	27.1	42.4	0.9	22.4	27.5	49.2

More than half (57percent) of children age 6-59 months are anaemic. This includes 27 percent who are mildly anaemic, 29 percent who are moderately anaemic, and 2 percent who have severe anaemia. The overall prevalence of anaemia in children increased from 50 percent in NFHS-4 to 57 percent in NFHS-5 for Tamil Nadu. The severe anaemia has increased in the age group of 2 to 3 years among children below 5 years of age from NFHS 5 to NFHS-4. As per NFHS a report, Moderate anaemia among children has increased from 14 percent in NFHS 4 to 29 percent in NFHS-5 whereas mild anaemia has decreased from 41 percent to 27 percent in Tamil Nadu.

Table 4. District-wise Prevalence of Anaemia among Children Aged 6–59 Months in Tamil Nadu: A Comparative Analysis of NFHS-4 (2015–16) and NFHS-5 (2019–21)

District	NFHS 5			NFHS 4		
	Severe	Moderate	Mild	Severe	Moderate	Mild
Thiruvallur	1.0	29.3	29.3	0.0	18.8	31.1
Chennai	0.0	18.4	37.5	0.1	13.4	31.3
Kancheepuram	0.9	33.4	34.5	0.3	17.0	28.3
Vellore	2.0	30.2	29.0	1.9	18.8	29.6
Thiruvannamalai	1.9	36.7	26.2	0.8	23.8	33.6
Viluppuram	4.8	41.8	27.0	2.3	28.2	26.4
Salem	1.9	24.8	24.5	0.0	23.7	27.0
Namakkal	4.2	34.4	29.1	1.5	26.4	22.3
Erode	0.9	14.6	30.4	0.6	26.1	24.4
The Nilgiris	0.0	21.5	24.1	0.8	22.8	29.3
Dindigul	1.3	24.9	23.9	0.5	18.4	24.3
Karur	3.2	48.4	21.5	1.3	25.9	25.9
Tiruchirappalli	2.8	51.1	28.3	2.6	33.7	23.3
Perambalur	3.4	44.1	22.0	0.0	30.5	25.6
Ariyalur	1.1	28.0	33.3	1.0	18.8	27.1
Cuddalore	3.4	36.6	24.9	0.4	23.7	28.2
Nagapattinam	1.6	38.3	21.4	0.4	19.1	22.6
Thiruvarur	0.0	16.9	27.4	0.9	21.9	30.2
Thanjavur	2.2	38.8	25.1	4.1	24.5	25.6
Pudukkottai	1.3	21.3	18.6	0.0	20.4	24.6
Sivaganga	1.1	30.4	25.0	1.7	21.4	28.6
Madurai	3.5	27.2	23.2	0.0	23.2	30.4
Theni	3.0	22.8	21.1	2.1	24.7	26.3
Virudhunagar	0.4	22.4	36.1	3.0	30.5	17.8
Ramanathapuram	3.9	24.0	29.2	0.5	22.6	25.9
Thoothukkudi	1.8	21.7	32.3	0.4	28.2	27.4
Tirunelveli	1.3	21.0	25.3	0.9	36.4	24.9
Kanniyakumari	1.6	13.6	24.5	1.2	17.9	19.7
Dharmapuri	2.8	28.7	22.3	0.8	25.2	32.1
Krishnagiri	0.8	19.2	27.7	0.3	20.3	31.7
Coimbatore	0.9	15.9	21.0	0.0	16.2	27.8
Tiruppur	0.0	17.3	27.0	0.7	18.5	33.3
Total	1.8	28.7	27.1	0.9	22.4	27.5

Source: NFHS 4 and 5 report

District-wise variations in the prevalence of severe, moderate, and mild anaemia among children aged 6–59 months in Tamil Nadu are presented in Figures 1–3. The figures compare the prevalence of anaemia across districts using

data from NFHS-4 (2015–16) and NFHS-5 (2019–21), highlighting temporal changes and geographical disparities in childhood anaemia.

Figure 1: Prevalence of severe anaemia among children

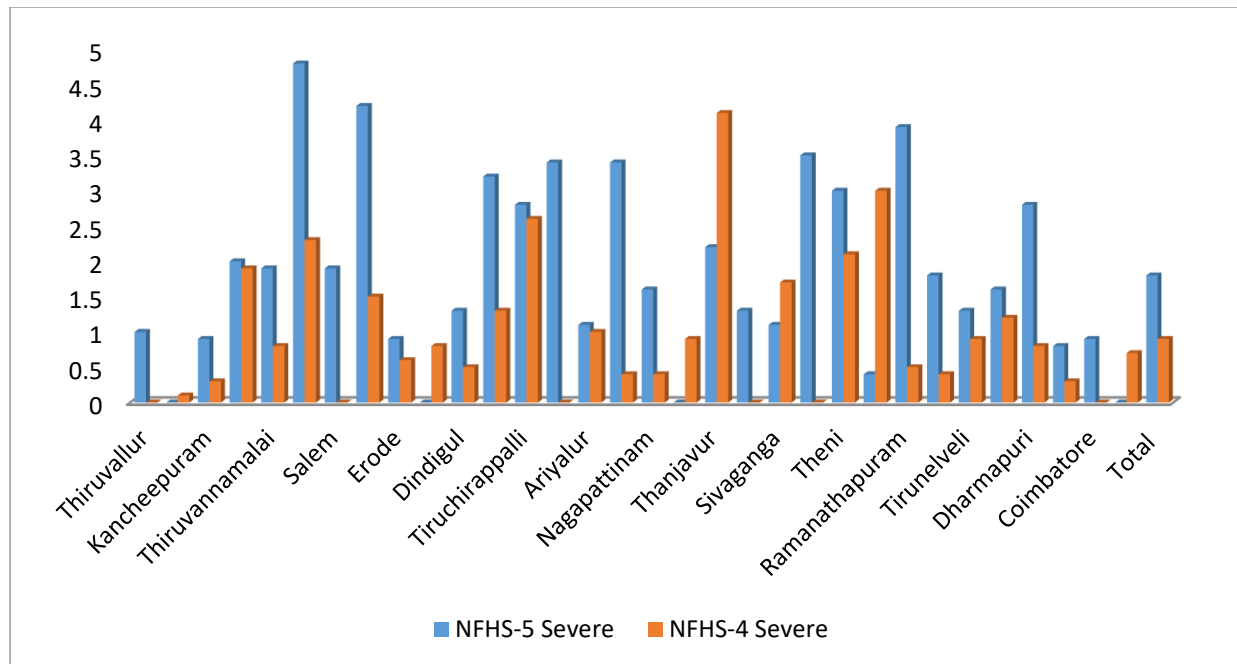


Figure 2: Prevalence of moderate anaemia among children

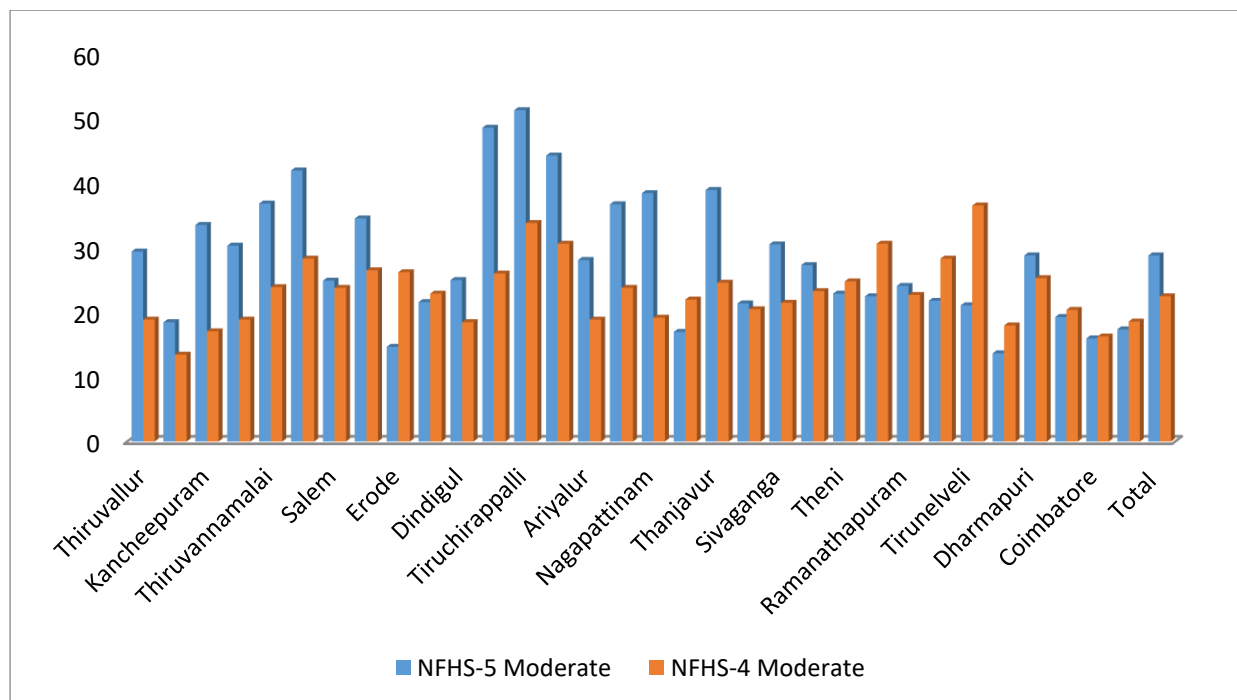
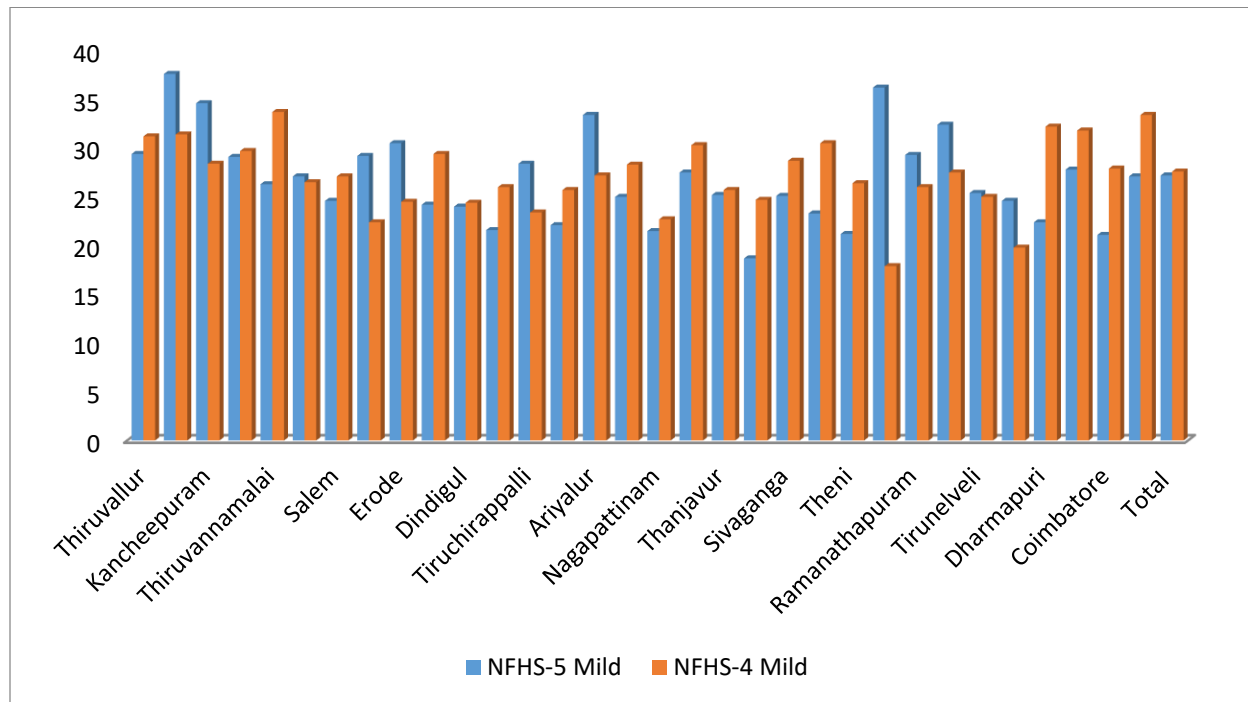


Figure 3: Prevalence of mild anaemia among children



According to NFHS 5, in districts such as Villupuram, Namakkal, Madurai, Cuddalore and Perambalur, prevalence of severe anaemia among children is higher compared to other districts. Prevalence of moderate anaemia is higher in Trichy, Karur, Villupuram, Perambalur and Thiruvannamalai districts compared to other districts of Tamil Nadu. Similarly, a higher prevalence of mild anaemia existed in Chennai, Virudhunagar, Kancheepuram, Thoothukudi and Erode districts (more than 30 percent). The prevalence of severe, moderate and mild anaemia among children has increased from the period 2015-16 to 2019-21 in almost all districts.

Binary Logistic regression result for prevalence of anaemia is presented in the following Table 5.

Table 5: Binary Logistic results for prevalence of anaemia

Background Characteristics	B Coeff	Exp (B)
Current Age of Child		
0		1.000
1	0.266	1.305**
2	-0.053	0.948
3	-0.425	0.654***
4	-0.911	0.402***
Birth Order		
1		1.000
2-3	0.120	1.127**
3-6	0.269	1.308
Sex of Child		
Male		1.000
Female	-0.142	0.868**

Type of Place of Residence		
Urban		1.000
Rural	0.235	1.265***
Religion		
Hindu		1.000
Muslim	-0.129	0.879
Christian	-0.206	0.814
Caste		
Schedule Caste		1.000
Schedule Tribe	0.301	1.351
OBC	-0.256	0.774***
Others	-0.206	0.814
Mothers Educational Level		
No Education		1.000
Primary	-0.109	0.896
Secondary	-0.371	0.690
Higher	-0.412	0.662
Working Status		
Working		1.000
Not working	0.034	1.034
Wealth Index		
Poorest		1.000
Poorer	0.230	1.258
Middle	0.084	1.087
Richer	0.047	1.048
Richest	-0.013	0.987
Dark Green Leaf Vegetables		
Never		1.000
Daily	0.144	1.155
Weekly	0.044	1.045
Occasionally	0.075	1.034

Children at age 1 are more likely to be anaemic as compared to children of other ages. Children with a birth order of 2-3 have higher odds of being anaemic. Male children are more likely to be anaemic compared with female children. Children living in rural areas are 1.3 times more likely to be anaemic than children living in an urban area. Odds ratios for being anaemic are lower among children belonging to OBC compared to children belong to Schedule Caste. Mothers educational Level does not show any statistically significant effect on child anemia. Working status of women, Wealth Index and consuming dark green leafy vegetables does not show any statistical significant effect on prevalence of child anemia.

Conclusion:

Anaemia is the important global health risk factor faced by the teenagers and pregnant women nowadays. Anaemia should be diagnosed earlier and treated to get a healthy generation. Anemia can be a particularly serious problem for pregnant women, leading to premature delivery and low birth weight. It is of concern in children since anemia is associated with impaired mental and physical development. Overall, morbidity and mortality risks increase for individuals suffering from anemia.

In Villupuram, Namakkal, Madurai, Cuddalore and Perambalur districts, prevalence of severe anaemia among children is higher compared with other districts of Tamil Nadu, moderate anaemia is higher in Trichy, Karur,

Villupuram, Perambalur and Thiruvannamalai districts and mild anaemia is higher in Chennai, Virudhunagar, Kancheepuram, Thoothukudi and Erode districts. The severe, moderate and mild anaemia among children has increased from the period 2015-16 to 2019-21 in almost all districts as per NFHS data.

Children at age one is more likely to be anaemic as compared to children of other ages. Children with a birth order of 2-3 have higher odds of being anaemic. Male children are more likely to be anaemic compared with female children. Children living in rural areas are 1.3 times more likely to be anaemic than children living in an urban area. Odds ratios for being anaemic are lower among children belonging to OBC compared to children belong to Schedule Caste. Mothers educational Level does not show any statistically significant effect on child anemia. Working status of women, Wealth Index and consuming dark green leafy vegetables does not show any statistical significant effect on prevalence of child anemia.

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