



# TRENDS OF ANAEMIA PREVALENCE AMONG FEMALES IN HIMACHAL PRADESH AND INDIA (2015-2020) BASED ON NFHS SURVEYS

Rohit Nadda<sup>1</sup>

<sup>1</sup>District Program Officer, Office of CMO, Chamba, Himachal Pradesh, India

## ABSTRACT

**Introduction:** This article explores the trends in anaemia prevalence among females in Himachal Pradesh and India from 2015 to 2020 using National Family Health Survey (NFHS) data. Anaemia, characterized by reduced oxygen-carrying capacity due to low red blood cell or hemoglobin concentrations, particularly impacts vulnerable groups such as children, adolescent girls, and pregnant women. In 2019, the World Health Organization reported high anaemia rates, especially in developing countries like India. Anaemia not only affects women but also influences the health of their offspring, contributing to a vicious cycle of malnutrition. The study aligns with Sustainable Development Goal 2.2, emphasizing the need to address malnutrition and nutritional needs of adolescent, pregnant, and lactating women.

**Material and Methods:** The study utilizes a narrative description, comparing NFHS fact sheets from 2015 and 2020 for India and Himachal Pradesh. Data is presented using MS Excel, focusing on anaemia prevalence among adolescent girls, women of reproductive age, and pregnant women. District-level indicators in Himachal Pradesh are also examined to identify poorly performing districts.

**Results:** The analysis reveals that anaemia prevalence among non-pregnant women aged 15-49 increased in India but remained static in Himachal Pradesh. For pregnant women, India experienced a slight increase, while Himachal Pradesh witnessed an 8.2% decrease. Overall anaemia prevalence among women aged 15-49 increased in India and remained stable in Himachal Pradesh. District-wise data highlights Bilaspur as the worst-performing district in Himachal Pradesh.

**Discussion:** Comparing NFHS surveys indicates an increase in anaemia prevalence among non-pregnant women in India, contrasting with a stable situation in Himachal Pradesh. Prevalence among pregnant women increased in India but decreased in Himachal Pradesh. Although Himachal Pradesh outperformed India, but anaemia prevalence remains high (40%-60%).

**Conclusion:** Despite Himachal Pradesh comparatively better performance, both India and the state face challenges in reducing anaemia prevalence. The Anaemia Mukht Bharat strategy needs reinforcement, and new target-based interventions should be formulated. Strengthening the role of Integrated Child Development Services (ICDS) and adopting an integrated approach across departments are crucial to breaking the cycle of micronutrient deficiency and addressing anaemia among women.

**KEY WORDS:** Anaemia, Women of reproductive age, India, Himachal Pradesh, Anaemia Mukht Bharat

## INTRODUCTION

Anaemia is defined as the condition in which the oxygen carrying capacity of blood to organ and tissues decreases. In this the red blood cell concentration or haemoglobin concentration of blood is less than normal. In chronic conditions it causes problem in pregnant women and their children. Anaemia can be caused by poor nutrition, infections, chronic diseases like chronic kidney disease etc, pregnancy demand and family history. The population groups which are most vulnerable to anaemia include children under 5 years of age, menstruating adolescent girls and women, and pregnant and postpartum women. As per World Health Organization in 2019 the 30% of non pregnant women and 37% of pregnant women were affected by anaemia worldwide.<sup>1</sup> This scenario is much worse in developing countries like India where almost about half of women population is affected by the anaemia.<sup>2</sup> Anaemia not itself affect the women but it also affect her child growth during her pregnancy and sometimes even death

is being reported among women due to severe anaemia at the time of delivery. Even the anaemic women give birth to anaemic child which become vicious circle for women for her lifetime affecting her physical as well as mental health. The SDG 2.2 also talks about ending all forms of malnutrition and addressing nutritional needs of adolescent, pregnant and lactating women.<sup>3</sup>

In this article I have tried to know level of anaemia among women by population level survey in India and Himachal Pradesh. This article also explores the trend of anaemia from 2015 to 2020 in India and Himachal Pradesh. The National Family Health Survey is large scale multi-round survey carried out in representative sample of household throughout India.<sup>3</sup> It also provide district level indicators among states. Studying the trend of anaemia in women of different age groups reported in NFHS survey help us to find out how India and Himachal Pradesh has performed regarding reduction in prevalence of anaemia from 2015 to 2020.



## OBJECTIVES

- 1) To identify the trend of anaemia among females of different age groups in India and Himachal Pradesh based on NFHS-4 and NFHS-5 fact sheets.
- 2) To identify worst performing districts in Himachal Pradesh based on the trend of anaemia from 2015 to 2020 among females of different age group.

## MATERIAL AND METHODS

The study adoptive a narrative description in which the NFHS fact sheets of India and Himachal Pradesh were obtained from appropriate sources. The data sets of 2015 and 2020 were compared with each other regarding anaemia among women. The cut off for anaemia among adolescent girls of age 15-19 years and women of reproductive age group is hemoglobin <12g/dl while

for pregnant women is <11g/dl. The data from all sources was entered in MS excel and then presented in form of table and graphs. The data regarding district level indicators of anaemia among females of different age groups in Himachal Pradesh are also compared to identify worst performing districts.

## RESULTS

The figure 1 is showing the status of non pregnant women of age 15-49 years of age who are anaemic in India and Himachal Pradesh. The anaemia has increased in India from 53.2% to 57.2% during 2015 to 2020. While in Himachal Pradesh the anaemia has remained around 53% in 2015 to 2020. Overall the status of anaemia among non pregnant women of 15-49 years of age has increased has increased in India but remained static in Himachal Pradesh.

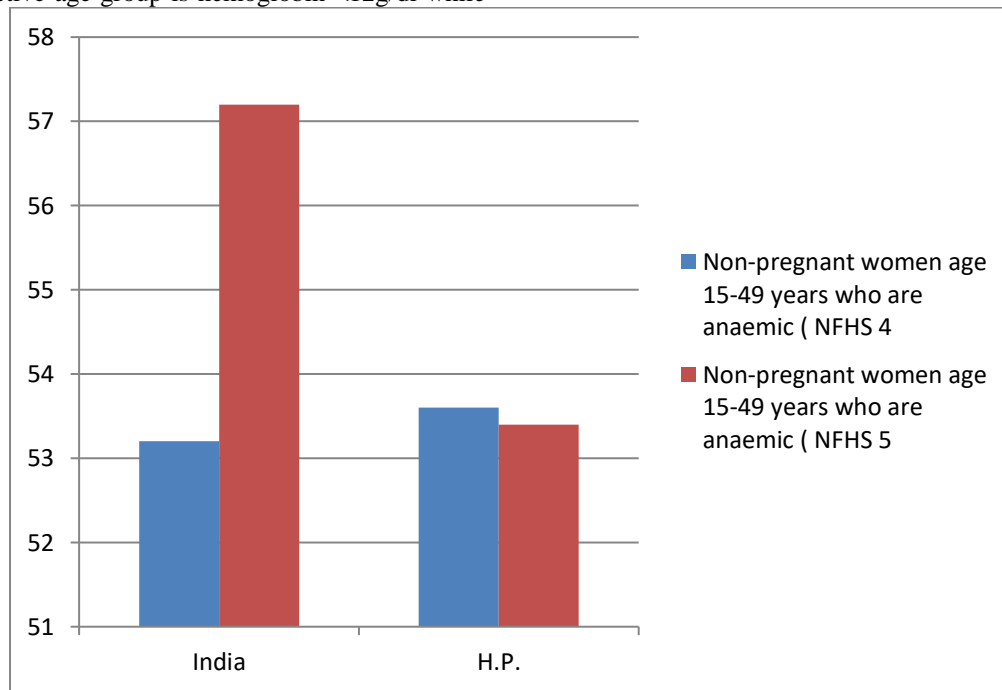
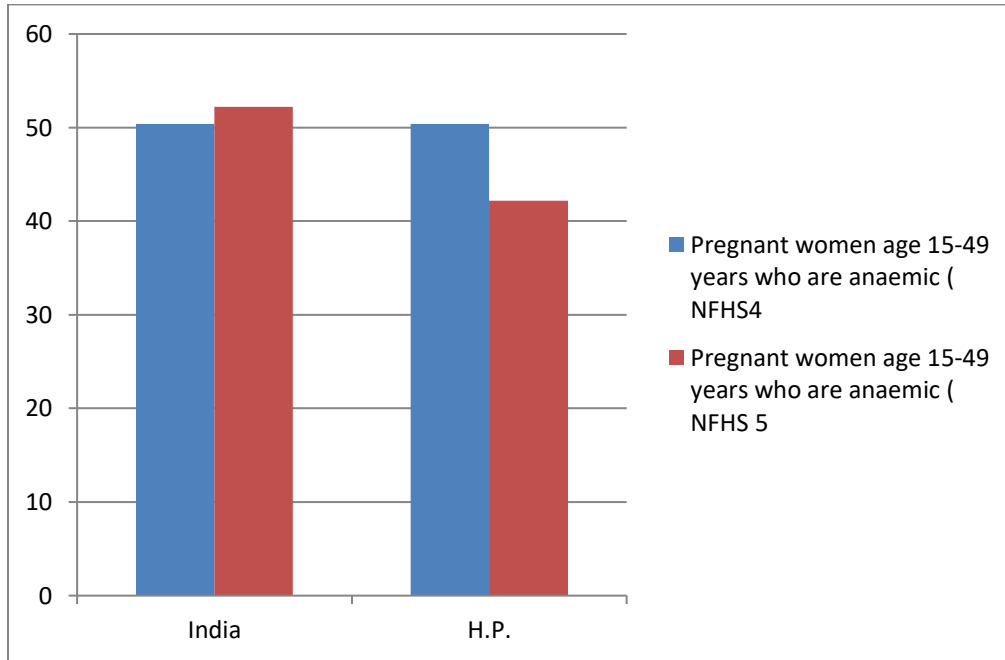


Figure 1: Comparison of anaemia among non pregnant women of age 15-49 years

The figure 2 is showing the pregnant women of age 15-49 years who are anaemic as per NFHS-4 and NFHS-5. In India the prevalence of anaemia in pregnant women has increased from 50.4% to 52.2% during 2015 to 2020. While in Himachal Pradesh

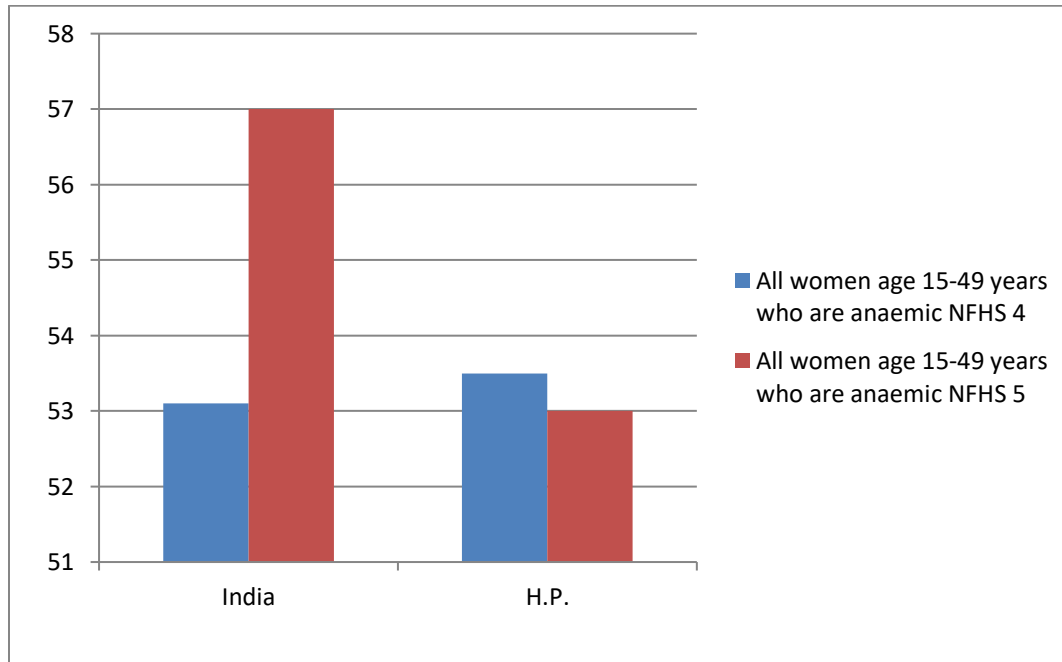
the prevalence of anaemia among pregnant women has decreased from 50.4% to 42.2%. Overall the status of anaemia among pregnant women has slightly increased in India while it has decreased by 8.2% in Himachal Pradesh from 2015 to 2020.



**Figure 2: Comparison of anaemia among pregnant women of age 15-49 years**

The figure 3 is showing all women of 15-49 years who are anaemic as per NFHS-4 and NFHS-5 reports. In India the prevalence of anaemia among all women of age group 15-49 years has increased from 53.1% to 57.0% during 2015 to 2020. While in Himachal Pradesh the prevalence of anaemia has

decreased from 53.5% to 53% during 2015 to 2020. Overall the status of anaemia among all women of age 15-49 years who are anaemic in India has increased by 3.9% and in Himachal Pradesh has remained almost static to 53% during 2015 to 2020.

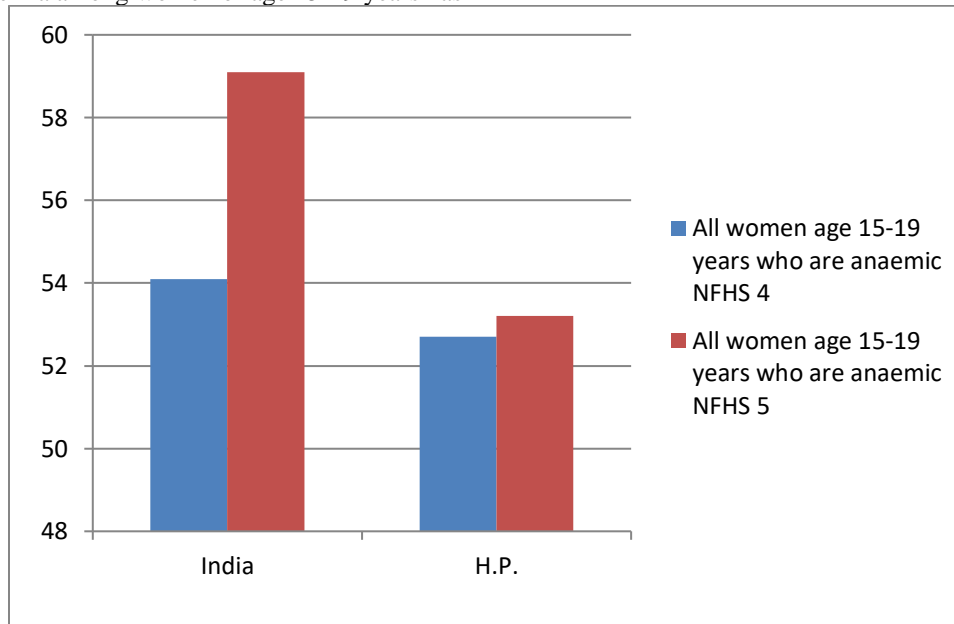


**Figure 3: Comparison of anaemia among all women of age 15-49 years**



The figure 4 is showing all women age 15-19 years who are anaemic as per NFHS-4 and NFHS-5. In India the prevalence of anaemia among women of age 15-19 years has increased from 54.1% to 59.1% during 2015 to 2020. While in Himachal Pradesh the prevalence of anaemia among women of age 15-19 years has

increased from 52.7% to 53.2% during 2015 to 2020. Overall the status of anaemia among all women of age 15-19 years in India has increased by 5% and in Himachal Pradesh it remained almost static around 53% during 2015 to 2020.



**Figure 4: Comparison of anaemia among all women of age 15-49 years**

The table 1 is showing the district wise prevalence of anaemia among women of different age groups in Himachal Pradesh. In this the increase and decrease of prevalence of anaemia among women of different age groups is shown from 2015 to 2020 as per NFHS data. The increase is shown by + signage and decrease is shown by – signage. The maximum increase in anaemia among non-pregnant women of age 15-49 years is shown by Bilaspur

district of 14.3%. The maximum increase in anaemia among all women of age 15-49 years is shown by Bilaspur and Una district of 13.9%. Among women of age 15-19 years maximum increase in anaemia is shown by Bilaspur district of 22.5%. The overall worst performing district in Himachal Pradesh in anaemia among women is Bilaspur district.

Name of district	Non-pregnant women age 15-49 years who are anaemic			All women age 15-49 years who are anaemic			All women age 15-19 years who are anaemic		
	NFHS-4	NFHS-5	Differences	NFHS-4	NFHS-5	Differences	NFHS-4	NFHS-5	Differences
Bilaspur	39.1	53.4	+14.3	39.1	53	+13.9	33	55.5	+22.5
Chamba	50.6	43.9	-6.7	51.2	43.7	-7.5	50.5	47.4	-3.1
Hamirpur	35.6	49.4	+13.8	35.8	49.5	+13.7	29	48.2	+19.2
Kangra	60.2	63.7	+3.5	59.7	63.4	+3.7	56.9	57.7	+0.8
Kinnaur	81	52.2	-28.8	80.8	51.7	-29.1	81	52.4	-28.6
Kullu	60	53.7	-6.3	59.5	52.8	-6.7	62	55.5	-6.5
Lahul & spiti	83.5	82.3	-1.2	83.2	82.1	-1.1	81.6	85.8	+4.2
Mandi	39.7	49	+9.3	39.8	48.9	+9.1	46.5	49.9	+3.4
Shimla	69.1	46.7	-22.4	68.7	46.5	-22.2	71.7	51.9	-19.8
Sirmaur	48.1	50.2	+2.1	48	50.1	+2.1	49.8	54.1	+4.3
Solan	67.7	48.4	-19.3	67.5	47.5	-20	70.4	44.3	-26.1
Una	46.6	60.8	+14.2	46.9	60.8	+13.9	43.4	63	+19.6

**Table 1: The district wise prevalence of anaemia among women in Himachal Pradesh**



## DISCUSSION

The NFHS survey analysis of last two rounds showed that prevalence of anaemia among non pregnant women of 15-49 years of age has increased in India while it has remained static in Himachal Pradesh from 2015 to 2020. As per WHO report in 2019, the prevalence of anaemia among women of reproductive age group of age 15-49 years was found to be 53% which is comparable to present study<sup>5</sup>. The prevalence of anaemia among pregnant women of age 15-49 years has slightly increased in India (50.4% to 52.2%) while it has decreased by 8.2% in Himachal Pradesh from 2015 to 2020. As per WHO report in 2019, the prevalence of anaemia among pregnant women of age 15-49 years was 50.1% which is comparable to present study<sup>6</sup>.

## CONCLUSION

In India the prevalence of anemia among women of different age groups have either increased or remained same from 2015 to 2020. In Himachal Pradesh the prevalence of anaemia among women have either decreased or remained same from 2015 to 2020. Overall the Himachal Pradesh has performed better in reducing the anaemia among women of different age groups than India. But still the prevalence of anaemia is very high among women of different age groups ranging from 40% to 60%. The Anaemia Mukht Bharat strategy launched to reduce prevalence of anaemia among women in reproductive age group (15-49 years). In this there is provision of prophylactic iron and folic acid supplementation to women of all age groups.<sup>7</sup> But despite of all efforts the reduction in anaemia is not meeting as per our targets. We need to formulate new target based interventions for reducing prevalence of anaemia among women. The role of ICDS in improving maternal nutrition need to be strengthened to tackle anaemia among women. The integrated approach of various departments needed to take out women from this vicious circle of micronutrient deficiency.

**Conflict of Interest:** Nil

**Sources of Support:** Nil

**ORCID:** 0009-0005-9579-6922

## Ethical Consideration

The present data is based on secondary data analysis and hence ethical considerations are not involved.

## Data Availability Statement

Data used for the present study is available in public domain.

## REFERENCES

1. World Health Organization. Accessed from: <https://www.who.int/news-room/fact-sheets/detail/anaemia>.
2. Global Health Metrics. Anaemia–Level 1 impairment. *Lancet*. 2019; 393. Accessed from: [https://www.healthdata.org/results/gbd\\_summaries/2019/anemia-level-1-impairment](https://www.healthdata.org/results/gbd_summaries/2019/anemia-level-1-impairment).
3. United Nations. Department of Economic and Social Affairs, Sustainable development. Available from: <https://sdgs.un.org/goals>
4. International Institute for Population Sciences. National Family Health Survey: India. Mumbai: IIPS; 2016. Retrieved from: <http://rchiips.org/nfhs>.
5. World Health Organization. Available from: [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-\(-\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-women-of-reproductive-age-(-))
6. World Health Organization. Available from: [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-pregnant-women-\(-\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-anaemia-in-pregnant-women-(-))
7. Poshan Abhiyaan. Anaemia Mukht Bharat. Available from: <https://anemiamukhtbharat.info>.