International Journal of Community Medicine and Public Health
Mukherjee S et al. Int J Community Med Public Health. 2026 Nov;13(11):6473-6480
https://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20264065

Original Research Article

Corporate social responsibility inequality and persistent anemia burden: insights from KBK region of Odisha, India

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Received: 26 July 2026
Revised: 25 September 2026
Accepted: 26 September 2026

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ABSTRACT

Background: Anemia remains a major public health concern in India, with NFHS-4 and NFHS-5 documenting increasing prevalence among women and children. Despite growing corporate social responsibility (CSR) investment, regional inequities persist, particularly in Odisha's vulnerable KBK region. This study examines anemia trends across India, selected states, and KBK districts and assesses their alignment with CSR spending on health and nutrition.
Methods: A secondary-data analysis used NFHS-4 and NFHS-5 factsheets, official government datasets and portals, and CSR disclosures. Descriptive, comparative, and trend analyses assessed anemia prevalence and the distribution of corporate investment in health, nutrition, water, and sanitation.
Results: Anemia among pregnant women increased nationally, while KBK districts consistently exceeded state and national averages. Odisha's CSR expenditure on health, hunger and malnutrition, drinking water, and sanitation rose from ₹130.58 crore in 2019 to ₹416.27 crore in 2024; however, anemia among women of reproductive age increased by 13.3% between NFHS-4 and NFHS-5. Improvements in health- and water-related SDGs contrasted with weaker poverty outcomes, suggesting that higher expenditure alone has not resolved underlying nutritional and socio-economic barriers.
Conclusions: Anemia reduction in the KBK region requires better-targeted CSR investment aligned with local governance and public programmes. Priorities include stronger ICDS implementation, community-based nutrition education, reliable iron and folic acid supplementation, and improved healthcare access in vulnerable areas.

Keywords: Anemia, Corporate Social responsibility, Nutritional deficiency, Odisha, Public Health, Regional disparities

INTRODUCTION

Anemia is a hematological condition characterised by reduction in hemoglobin concentration below recognized physiological thresholds, which impairs tissue oxygenation and the blood's ability to deliver oxygen. The etiology of this condition is multifactorial, frequently stemming from nutritional deficiencies in iron and folate- both critical for red blood cell production- alongside chronic inflammatory processes, systemic diseases, and genetic predispositions.[1] According to global estimates provided by the World Health Organization (WHO), Anemia affects 40% of children aged 6-59 months, 37% of pregnant women, and 30% of non-pregnant women aged 15-49 years.[2,3] In India, recent trends indicate a rise in anemia prevalence across female populations. Comparative data from the National Family Health Surveys- NFHS-4 (2015-16) and NFHS-5 (2019-21)- reveal a substantial increase in anemia rates: Among women aged 15-49, prevalence rose from 53% to 57%. In pregnant women, the incidence increased from 50.4% to 52.2%. Among non-pregnant women, rates climbed from 53.2% to 57.2%.[4]

Anemia disproportionately affects adolescent girls, women of reproductive age, and pregnant women, largely

because of deficiencies in essential micronutrients, particularly in less developed countries.[5] During the reproductive years, iron deficiency is associated with adverse physical and mental health outcomes among women. Factors such as age, parity, socio-economic status, and inadequate dietary intake further intensify this burden.[6] The nutritional consequences of anemia can be long-lasting, increasing women's vulnerability to complications such as preterm birth, low-birth-weight infants, impaired fetal growth, and adverse maternal health outcomes linked to insufficient oxygen supply.[7]

Despite national efforts to reduction anemia substantial regional disparities persists in some states of India such as Odisha and its KBK region (Kalahandi, Bolangir, Koraput, Nuapada, Rayagada, Nabarangpur, Malkangiri) fall within the high-prevalence tribal belt. These districts are estimated at 20-40% tribal populations. The undivided KBK districts of Odisha reveal widespread socio-economic vulnerability among scheduled tribe (ST) industrial workers. Most units are small, privately owned, and recently established, operating with limited welfare provisions that offer minimal medical, housing, or social security benefits. A predominantly unskilled workforce, especially among ST workers, faces low wages, gender pay gaps, and insecure employment, with only a quarter holding permanent jobs. Living conditions are equally poor: households have high illiteracy and dependency levels, rely heavily on fire, wood for cooking, and lack basic sanitation.[8-10]

Although the National Health Mission (NHM) is functioning effectively and contributed to improvements in healthcare delivery system in Odisha, but financial and operational constrains continue to its progress of implementation.[11] The overall health status in the region remains poor due to persistent structural barriers such as low income, widespread illiteracy, shortages of healthcare workers and trained technical staff, high absenteeism, and inadequate health facilities- challenges worsened by the reluctance of medical professionals to work in remote tribal areas, so it's important to promote public-private partnerships to bridge service gaps, and increasing state health expenditure as a share of SDP to improve per capita access to essential health services in rural.[12,13]

To lower the prevalence of anemia, corporate social responsibility (CSR) initiatives may offer extra funding for programs related to nutrition, maternal health, community awareness, and hospital infrastructure. Corporate social responsibility (CSR) funding emerges as a potential complementary financing mechanism to support targeted anemia-reduction interventions, particularly in settings where variations in public health system capacity, economic conditions, funding priorities, and implementation structures contribute to unequal anemia burdens and inconsistent success in scaling public health solutions.[14]

Corporate social responsibility (CSR) enhances economic development, environmental sustainability, and social well-being, including philanthropic initiatives, community development, and efforts to reduce environmental impacts.[15] CSR implementation is a board-driven process that requires the formation of a CSR committee and the submission of annual disclosures through the MCA registry to ensure transparency and accountability. The introduction of mandatory CSR disclosure requirements by the Securities and Exchange Board of India further strengthened the shift from voluntary corporate philanthropy to a structured and regulated CSR regime, promoting more targeted, systematic, and transparent corporate engagement in development initiatives.[16] The spatial distribution of CSR funding across Indian states brings to light significant regional disparities and imbalances. This study aimed to analyse anemia prevalence among children and women using recent national and state factsheets, to compare anemia indicators and disparities across India, major states, and the KBK districts of Odisha and CSR spending patterns in health and nutrition and their alignment with anemia trends in the KBK region.

Rationale

Anemia remains a significant public health issue in India, particularly impacting women and children. Despite various national and state initiatives aimed at controlling the condition, its prevalence remains high in numerous rural and tribal areas. The KBK districts of Odisha exemplify this issue: they are characterized by ongoing poverty, limited healthcare access, nutritional insecurity, and considerable health disparities relative to other areas.

India's CSR mandate has mobilized substantial resources; however, there is a lack of evaluation regarding how these resources influence key health outcomes in underprivileged regions. Gaining insight into CSR inequalities and their relationship with anemia reduction can help shape more effective collaborations among government entities, corporations, and local authorities, support targeted policy recommendations, and establish an intervention framework.

Through a secondary data review that integrates patterns of CSR activities with anemia outcomes in Odisha's KBK districts and in states with varying levels of CSR investment, like Maharashtra, Delhi, Gujarat, Tamil Nadu, and Karnataka, this research seeks to clarify the role and impact of CSR in fostering significant public health improvements in areas facing structural disadvantages. The findings from this study can inform future strategies for CSR investments and public health initiatives, ensuring that corporate resources are utilized effectively to mitigate anemia and enhance health outcomes in at-risk populations. This study analyzes anemia prevalence among women and children using recent national and state data to compare anemia indicators and disparities across India, major states, and

Odisha's KBK districts, alongside examining CSR health and nutrition spending and its relation to anemia trends in the KBK region.

Objectives

To assess anemia prevalence among children and women using recent national and state datasets. To compare anemia indicators and disparities across India, major states, and the KBK districts of Odisha. To examine CSR spending patterns in health and nutrition and their alignment with anemia trends in the KBK region.

METHODS

This study employed a secondary data-based analytical design, drawing upon nationally representative datasets and official government sources to examine anemia trends and their potential association with CSR funding patterns. Data on anemia prevalence among children (6-59 months) and women of reproductive age were obtained from National Family Health Survey (NFHS) factsheets and related government-published datasets. These sources provided consistent, large-scale, and methodologically standardized indicators suitable for comparative analysis.

CSR-related information- particularly cumulative expenditures and directed towards health, nutrition, and related development sectors- was compiled from official CSR disclosure portals and government repositories. The analysis involved descriptive comparisons, trend examination, and cross-sectional assessment to explore the extent to which CSR spending patterns align with observed anemia burdens across states, major regions, and the KBK districts of Odisha.

Study design

This study adopted a secondary data-based analytical design, utilizing publicly available national and state-level datasets to examine anemia prevalence patterns and their potential alignment with CSR funding trends. The design is cross-sectional, with elements of trend analysis where multi-round datasets are available.

Data sources

Anemia-related data

The secondary data were obtained from the National Family Health Survey (NFHS-4- 2014-2015), (NFHS-5, 2019-2021) fact sheets for Odisha and selected districts, namely Malkangiri, Koraput, Nabarangpur, Kalahandi, Rayagada, Nuapada, Balangir, and Subarnapur, as well as major Indian states including Delhi, Maharashtra, Tamil Nadu, Gujarat, and Karnataka.[17]

The NFHS is conducted by the International Institute for Population Sciences (IIPS), Mumbai, under the aegis of the Ministry of Health and Family Welfare (MoHFW), Government of India, and provides comprehensive data on health, nutrition, and socio-demographic indicators among women of reproductive age (15-49 years) at national, state, and district levels. Anemia indicators for children aged 6-59 months and women of reproductive age (15-49 years) were obtained from: Government-published datasets from relevant ministries (Health and Family Welfare, Women and Child Development), providing district-level and state-level disaggregated values, particularly for the KBK (Kalahandi, Bolangir, Koraput, Malkangiri, Nabarangpur, Rayagada, Nuapada, and Sonepur) region of Odisha.

CSR-related data

Data on corporate social responsibility (CSR) expenditure were compiled from:[18,19]

Official CSR reporting portals, including mandated disclosures under the Companies Act (2013).

Government repositories providing sector-wise, state-wise, and theme-wise CSR spending patterns, specifically focusing on health, nutrition, and allied social sectors.

CSR data extracted for the KBK districts allowed examination of geographic alignment between public health needs and CSR resource flows.

CSR and Policy Data

Data on corporate social responsibility (CSR) expenditure were sourced from the Ministry of Corporate Affairs (MCA) to examine funding patterns in sectors relevant to Anemia reduction, including healthcare, eradication of hunger, poverty, and malnutrition, safe drinking water, and sanitation.

Additionally, policy and programmatic information was reviewed from the National Health Mission (NHM) reports, NITI Aayog publications on Odisha, and relevant reports issued by the Government of Odisha.

The primary focus of the study was the KBK region of Odisha, comprising Malkangiri, Koraput, Nabarangpur, Kalahandi, Rayagada, Nuapada, Balangir, and Subarnapur districts. For comparative purposes, selected major states- Delhi, Maharashtra, Tamil Nadu, Gujarat, and Karnataka- were included to examine inter-state variations in anemia prevalence and CSR funding allocation.

Statistical analysis

A descriptive, comparative, and trend analysis was conducted to examine:

Changes in anemia prevalence between NFHS-4 and NFHS-5. Inter-state and intra-regional variations in Anemia burden. Patterns of CSR funding allocation in relation to health and nutrition outcomes.

Findings were presented using tabular summaries and graphical representations to facilitate comparison across regions and time periods.

RESULTS

The Figure 1 depicts changes in the prevalence of anemia among children aged 6-59 months between NFHS-4 (2015-16) and NFHS-5 (2019-21) across India, Odisha, and the KBK (Malkangiri, Koraput, Nabarangpur, Kalahandi, Rayagada, Nuapada, Balangir, Subarnapur) region. At the national level, childhood Anemia increased from 58.6% in NFHS-4 to 67.1% in NFHS-5, indicating a significant decline in child nutritional health. Odisha exhibited a pronounced escalation in childhood anemia, increasing from 44.6% in NFHS-4 to 64.2% in NFHS-5, surpassing the national average in the latest survey. The KBK region consistently displayed the highest burden, with prevalence rising from 67.33% to 72.5%, highlighting persistent and severe sub-regional disparities.

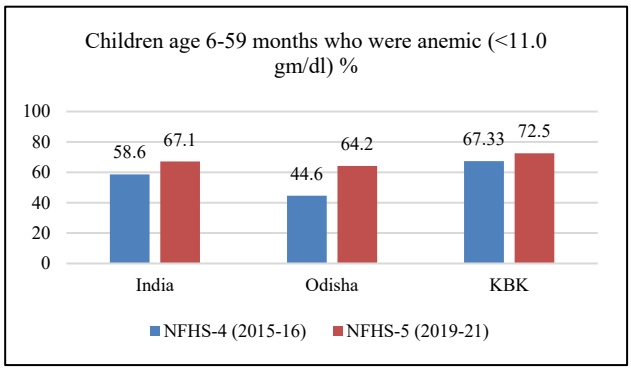
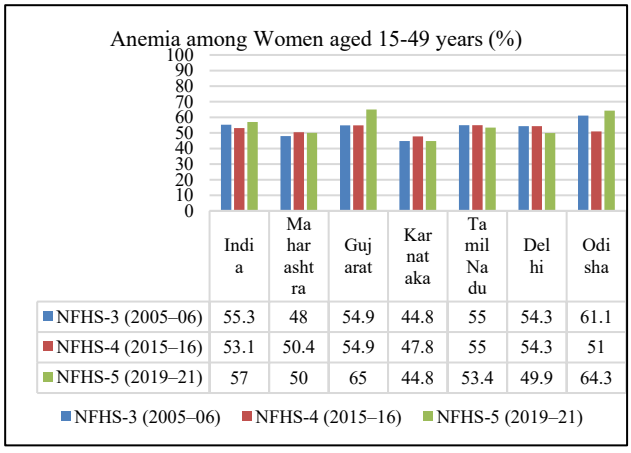


Figure 1: Trend in anemia among children (6-59 months): India, Odisha and KBK.



	India	Maharashtra	Gujarat	Karnataka	Tamil Nadu	Delhi	Odisha
NFHS-3 (2005–06)	55.3	48	54.9	44.8	55	54.3	61.1
NFHS-4 (2015–16)	53.1	50.4	54.9	47.8	55	54.3	51
NFHS-5 (2019–21)	57	50	65	44.8	53.4	49.9	64.3

NFHS-3 (2005–06) NFHS-4 (2015–16) NFHS-5 (2019–21)

Figure 2: Anemia among women aged 15-49 years (NFHS-3, 4, 5).

The prevalence of anemia among women aged 15-49 years in India demonstrates considerable inter-state variation and an overall concerning trajectory over time. At the national level, anemia prevalence showed a modest decline from 55.3% in NFHS-3 (2005-06) to 53.1% in NFHS-4 (2015-16), indicating some progress during the intervening decade. However, this trend reversed in the subsequent period, with prevalence rising to 57.0% in NFHS-5 (2019-21), underscoring persistent challenges in addressing nutritional deficiencies and public health interventions.

State-level patterns reveal divergent trajectories. Maharashtra exhibited a relatively stable trend, with anemia prevalence increasing marginally from 48.0% in NFHS-3 to 50.4% in NFHS-4, followed by a slight decline to 50.0% in NFHS-5. In contrast, Gujarat experienced a pronounced and consistent escalation, with prevalence rising sharply from 54.9% in NFHS-3 to 65.0% in NFHS-5, making it the highest among the selected states in the most recent survey round.

Odisha presents a particularly concerning case. Despite reporting a reduction from 61.1% in NFHS-3 to 51.0% in NFHS-4- suggesting temporary improvements- the state witnessed a substantial surge to 64.3% in NFHS-5. This represents the sharpest increase between NFHS-4 and NFHS-5 among the states analysed. The persistently high and rapidly increasing burden of anemia in Odisha highlights systemic gaps in nutrition, health service delivery, and socio-economic determinants, warranting deeper examination in relation to resource allocation, including corporate social responsibility (CSR) investments and their distribution.

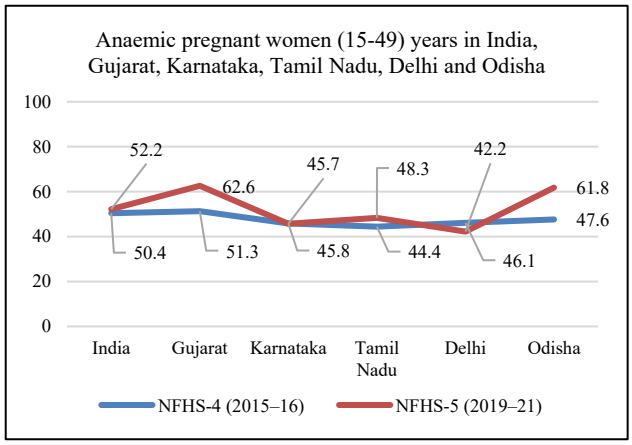


Figure 3: Trends of anemic pregnant women (15-49) years in India, Gujarat, Karnataka, Tamil Nadu, Delhi and Odisha.

The prevalence of anemia among pregnant women aged 15-49 years in India has shown a concerning upward trend between the most recent survey rounds. At the national level, anemia prevalence increased from 50.4% in NFHS-4 (2015-16) to 52.2% in NFHS-5 (2019-21),

reflecting persistent challenges in maternal nutrition and antenatal care despite ongoing public health interventions.

State-level analysis reveals considerable heterogeneity in trends and outcomes. Gujarat recorded a substantial escalation in anemia prevalence among pregnant women, rising sharply from 51.3% in NFHS-4 to 62.6% in NFHS-5, indicating a significant deterioration in maternal health indicators over the period. Tamil Nadu, while performing comparatively better, also experienced a noticeable increase from 44.4% to 48.3%, suggesting emerging concerns even in relatively stronger health systems.

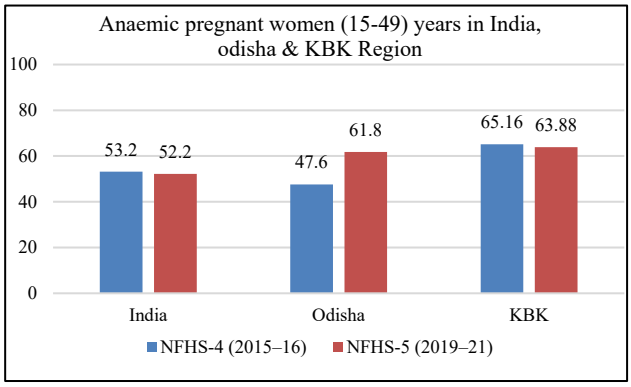


Figure 4: Trends of anemic pregnant women (15-49) years in India, Odisha and KBK Region (Malkangiri, Koraput, Nabarangpur, Kalahandi, Rayagada, Nuapada, Balangir, Subarnapur).

Odisha presents a particularly critical case within this landscape. The state witnessed a pronounced rise in anemia prevalence among pregnant women, increasing from 47.6% in NFHS-4 to 61.8% in NFHS-5. This substantial surge places Odisha among the highest-burden states within the sample, highlighting deep-rooted challenges in nutritional uptake, maternal health service delivery, and socio-economic determinants. The magnitude of this increase underscores the need for targeted, context-specific interventions and calls for a closer examination of the role of resource allocation mechanisms, including corporate social responsibility (CSR) investments, in influencing maternal health outcomes.

The prevalence of anemia among pregnant women aged 15-49 years shows persistent challenges across geographic levels between NFHS-4 (2015-16) and NFHS-5 (2019-21). At the national level, prevalence remained high with only marginal change, from 53.2% to 52.2%, indicating limited progress in maternal nutrition. In contrast, Odisha recorded a substantial increase from 47.6% to 61.8%, reflecting a significant deterioration in maternal health outcomes. Within the state, the KBK (Kalahandi-Balangir-Koraput) region consistently reported the highest burden, with prevalence remaining critically elevated at 65.16% in NFHS-4 and 63.88% in NFHS-5. Despite a slight decline, the persistently high levels underscore deep-rooted regional disparities and the need for targeted interventions.

Table 1: Proportion of amount spent in five states of India FY 2014 to 2024 (CSR INR).

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Delhi	237.44 (2.36)	455.17 (3.14)	460.71 (3.17)	579.37 (3.39)	750.85 (3.71)	830.00 (3.32)	724.59 (2.76)	1,198.50 (4.42)	1,517.07 (4.90)	1,949.95 (5.59)
Gujarat	313.41 (3.11)	547.94 (3.77)	865.81 (5.95)	967.97 (5.66)	1,082.18 (5.35)	984.37 (3.94)	1,461.60 (5.58)	1,613.18 (5.94)	2,060.02 (6.66)	2,707.54 (7.76)
Karnataka	403.47 (4.01)	771.59 (5.32)	876.84 (6.03)	1,145.79 (6.70)	1,257.69 (6.22)	1,448.16 (13.43)	1,277.81 (4.88)	1,849.82 (6.82)	2,058.73 (6.66)	2,254.88 (6.46)
Maharashtra	1,445.92 (14.36)	2,026.91 (13.96)	2,420.35 (16.64)	2,797.53 (16.36)	3,147.72 (15.57)	3,353.24 (13.43)	3,464.81 (13.22)	5,407.40 (19.92)	5,705.54 (18.45)	6,065.95 (17.38)
Odisha	252.18 (2.51)	618.69 (4.26)	355.32 (2.44)	504.22 (2.95)	697.91 (3.45)	717.39 (2.87)	578.16 (2.21)	752.37 (2.77)	994.82 (3.22)	1,389.39 (3.98)
Tamil Nadu	539.64 (5.36)	588.22 (4.05)	548.28 (3.77)	669.65 (3.92)	877.08 (4.34)	1,072.26 (4.29)	1,174.07 (4.48)	1,441.03 (5.31)	1,637.12 (5.29)	1,968.76 (5.64)

Table 1 presents the trend in corporate social responsibility (CSR) expenditure in India alongside its distribution across selected states from FY 2014-15 to FY 2023-24. Over this period, total CSR spending in the country expanded significantly, increasing from ₹10,065.93 crore in FY 2014-15 to ₹14,517.21 crore in FY 2015-16 and ₹14,542.51 crore in FY 2016-17. This upward trajectory continued with ₹17,098.57 crore in FY 2017-18 and ₹20,217.65 crore in FY 2018-19. In the subsequent years, CSR expenditure rose further to ₹24,965.82 crore in FY 2019–20, ₹26,210.95 crore in FY 2020-21, ₹27,141.45 crore in FY 2021-22, ₹30,932.08 crore in FY 2022-23, and reached ₹34,908.75 crore in FY 2023-24, reflecting a steady and sustained growth in corporate contributions.

Despite this overall increase, the distribution of CSR funds remains uneven across states. Maharashtra consistently accounted for the highest share of CSR expenditure throughout the study period, with a peak

observed in FY 2021-22. Karnataka emerged as the second-largest recipient, with its highest allocation in FY 2019-20. In contrast, Odisha consistently received a relatively small proportion of total CSR funds, generally ranging between 2-3% over the years. Tamil Nadu performed moderately better, with its share typically ranging between 3-5%.

Overall, the analysis highlights a persistent geographic concentration of CSR investments in economically advanced and industrialized states such as Maharashtra and Karnataka, while states like Odisha continue to receive comparatively limited funding. This pattern indicates structural disparities in CSR allocation, raising important concerns regarding the equitable distribution of corporate resources for addressing regional development and public health challenges.

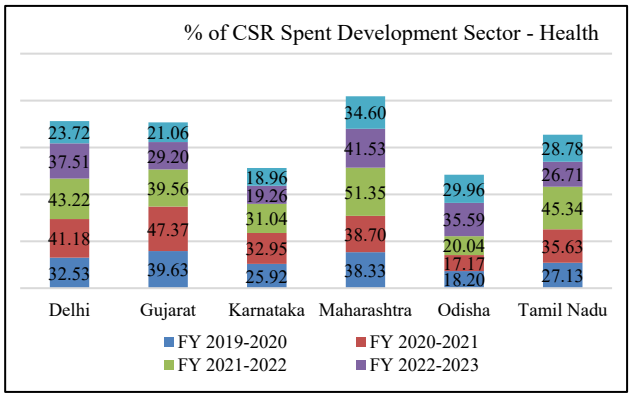


Figure 5: Proportion of CSR spent development sector- health: (health, eradicating hunger, poverty, and malnutrition; safe drinking water, sanitation).

Figure 5 presents the proportion of CSR expenditure allocated to key social sectors- health, eradication of hunger, poverty and malnutrition, and access to safe drinking water and sanitation- relative to the total CSR spending across selected states. The analysis indicates that states such as Maharashtra and Tamil Nadu consistently allocated a relatively higher share of their CSR budgets toward these priority sectors, reflecting stronger alignment with public health and basic welfare needs.

In contrast, Odisha exhibited notable fluctuations in sectoral CSR allocation over the study period, with comparatively lower proportions in recent years. Although the state recorded its highest allocation in FY 2022-23, the share declined subsequently from 35.59% in FY 2022-23 to 29.96% in FY 2023-24, following a significantly lower level of approximately 17.17% in FY 2020-21.

These trends highlight inconsistencies in CSR prioritization within Odisha, particularly in critical sectors directly linked to health and nutrition outcomes. The observed variability underscores the need for more sustained and strategically aligned CSR investments to address persistent public health challenges.

DISCUSSION

The present study highlights critical intersections between anemia burden and disparities in corporate social responsibility (CSR) financing across India, with particular attention to Odisha and the KBK (Kalahandi-Balangir-Koraput) region. The findings reveal persistent and multidimensional inequities, both in public health outcomes and in the allocation of corporate resources.

Anemia prevalence among children aged 6-59 months in the KBK region remains alarmingly high across 2014 to 2021, reflecting entrenched sub-regional disparities within Odisha. Similarly, comparative state-level analysis indicates that women aged 15-49 years in Odisha and Gujarat consistently experience elevated levels of anemia, suggesting systemic gaps in nutrition, healthcare access, and socio-economic determinants. These disparities are further reinforced by NFHS-5 findings, which show a nationwide increase in anemia among pregnant women, with particularly sharp rises in Odisha and Gujarat, while states such as Karnataka and Delhi demonstrate relatively stable or improving trends. A qualitative study in Odisha, using the Dixon-Woods Candidacy Model, demonstrated that obtaining essential health and nutrition services is significantly affected by structural disparities, administrative hurdles, and multi-tiered gatekeeping.[20]

The situation is especially concerning in Odisha, where anemia prevalence among pregnant women- and more markedly within the KBK region- continues to exceed the national average. Despite a significant increase in CSR expenditure in the state, from ₹130.58 crore in 2019 to ₹416.27 crore in 2024, anemia among women of reproductive age has risen by approximately 13.3% between NFHS-4 and NFHS-5. This divergence suggests that increased financial inputs alone are insufficient without strategic targeting, effective implementation, and alignment with public health priorities.[21]

Existing literature reinforces the structural nature of these challenges. Evidence from the north-east region indicates that CSR investments are often driven by industrial concentration, with limited reach in geographically disadvantaged areas due to weak institutional linkages, inadequate local partnerships, and poor information flow.[22] Similarly, studies from western Odisha districts-including Kalahandi, Kandhamal, and Nuapada-underscore the importance of multi-stakeholder collaboration in developing scalable and inclusive CSR models that can effectively address deficits in healthcare access, education, livelihoods, and infrastructure.[9] In response to malnutrition, the Government of Odisha has adopted a comprehensive, multi-sectoral approach grounded in the social determinants of health framework. Key initiatives such as the Odisha Millet Mission and Anemia Mukta Lakshya Abhiyan (AMLAN). Notably,

the state's nutrition allocation increased significantly in FY 2024-25, with a 19.62% rise over the previous year.

The uneven distribution of CSR expenditure across India poses a critical challenge. CSR investments remain geographically concentrated in an industrially advanced states such as Maharashtra and Karnataka.[23] Although states like Gujarat, Delhi, and Tamil Nadu have shown gradual increases in CSR inflows, Odisha's allocation remains both limited and volatile. Sectoral analysis further reveals fluctuations in CSR spending within critical domains such as health, nutrition, water, and sanitation. While Odisha recorded a peak allocation in FY 2022-23, this declined in FY 2023-24, indicating inconsistencies in prioritization. CSR should be aligned with sustainable development goal and it depends on strategic planning and implementation.[24,25]

The findings suggest that geographic disparities in CSR allocation significantly influence both the availability and effectiveness of resources targeting health and nutrition outcomes. The persistent burden of anemia in Odisha- despite increases in CSR funding- points to systemic issues related to allocation efficiency, regional targeting, and programmatic alignment.[9,26] Addressing these gaps requires a more equitable, data-driven, and outcome-oriented CSR framework that ensures resources reach high-burden regions such as the KBK area. Strengthened coordination between government initiatives and corporate investments will be essential to achieving meaningful improvements in public health outcomes and reducing long-standing regional inequalities.

This study is subject to several limitations inherent to the use of secondary data. These include potential reporting lags, inconsistencies in data availability, and limited access to disaggregated variables. Variations in CSR reporting across companies and financial years further constrain the scope for granular, district-level analysis.

Additionally, the study adopts a correlational approach and does not establish causal relationships between CSR expenditure and anemia outcomes. Therefore, the findings should be interpreted with caution, acknowledging that multiple socio-economic and programmatic factors influence health outcomes beyond CSR investments alone.

CONCLUSION

This study underscores the persistent burden of anemia in high-prevalence regions such as Odisha, particularly within the KBK region, alongside significant disparities in the distribution and utilisation of CSR funding. The findings highlight that increased financial allocation alone does not translate into improved health outcomes without strategic targeting and effective convergence with public systems.

Strengthening collaboration between corporate social responsibility (CSR) initiatives and local governance can serve as a critical pathway to address these gaps. Aligning CSR investments with the state's nutrition budget and development priorities offers an opportunity to enhance equity, efficiency, and sustainability in public health interventions.

Priority actions should include reinforcing ICDS and nutrition-sensitive programmes, expanding community-based awareness initiatives, improving iron and folic acid supplementation coverage and adherence, and ensuring coordinated implementation at the grassroots level. Such integrated efforts are essential to reduce anemia prevalence and achieve more inclusive and resilient health outcomes in vulnerable regions.

ACKNOWLEDGEMENTS

The author gratefully acknowledges the contributions of all institutions and data sources, particularly the National Family Health Survey (NFHS), Ministry of Corporate Affairs, and Government of Odisha, for providing access to secondary data used in this study. Appreciation is also extended to development practitioners, researchers, and field stakeholders whose insights and existing work have informed this analysis. The support from academic peers and well-wishers in refining this study is sincerely acknowledged.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Mukherjee S, Mondal M. Corporate social responsibility inequality and persistent anemia burden: insights from KBK region of Odisha, India. Int J Community Med Public Health 2026;13:6473-80.