

Disability among Tribal Communities in Odisha: A Biocultural Review of Health, Marginalization, and Social Inclusion

Kamalakanta Satapathy¹, Soumyashree Panda², Lipsamayee Pradhan³

¹Research Scholar, Anthropology, Utkal University
ORDCI: 0009-0004-0425-0215

²Researcher, Anthropology, Utkal University
ORCID: 0009-0002-4054-4208

Abstract

Disability among tribal communities in India remains an underexplored area within anthropology, disability studies, and public health research. This review examines disability among tribal populations in Odisha through a biocultural framework that integrates biological, socio-cultural, environmental, and structural dimensions. Drawing on interdisciplinary literature from anthropology, sociology, public health, and disability studies, the paper explores how poverty, malnutrition, disease burden, limited healthcare access, social stigma, and geographical isolation shape disability experiences among tribal groups. Odisha, home to one of India's largest tribal populations, provides a significant context for understanding the intersection of disability and social exclusion. The review identifies major research gaps, including limited ethnographic evidence, inadequate district-level documentation, and insufficient interdisciplinary studies. It argues that disability must be understood as a product of interconnected ecological, social, and political factors rather than solely as a medical condition, emphasizing the need for inclusive and culturally sensitive interventions.

Keywords: Disability, Tribal Communities, Odisha, Biocultural Anthropology, Social Exclusion, Indigenous Health, Disability Studies

1. Introduction

Disability is increasingly recognized as a multidimensional phenomenon shaped not only by biological impairments but also by social, cultural, economic, and environmental conditions (Oliver, 1990). Earlier understandings of disability were largely rooted in medical interpretations that viewed disability as an individual pathology requiring treatment or rehabilitation. Such perspectives primarily focused on bodily limitations while neglecting broader social and structural barriers that contribute significantly to exclusion and marginalization.

The emergence of the social model of disability during the late twentieth century challenged these medicalized assumptions by emphasizing that disability is produced through inaccessible environments, discriminatory institutions, and unequal power relations (Barnes & Mercer, 2010). Contemporary

disability studies therefore highlight the importance of examining how social structures shape the experiences of persons with disabilities.

Within India, disability intersects with multiple forms of inequality including caste, class, gender, ethnicity, and regional marginalization. Tribal communities, constitutionally recognized as Scheduled Tribes, represent one of the most socio-economically disadvantaged populations in the country. According to the Census of India (2011), tribal communities constitute approximately 8.6 percent of the national population. Many tribal populations reside in geographically isolated and ecologically fragile regions characterized by poor healthcare infrastructure, educational deprivation, chronic poverty, food insecurity, and inadequate access to welfare services.

Persons with disabilities within indigenous and tribal communities often experience what is conceptualized in intersectional disability studies as "**double marginalization**" (Saikia et al., 2016). This phenomenon arises simultaneously from the structural vulnerabilities of a marginalized tribal identity and the socio-spatial barriers associated with physical or cognitive impairments (Roy, n.d.). Within these ecosystemic structures, disability does not function merely as a static biomedical deficit; rather, it is exacerbated by historical disenfranchisement, systemic discrimination, and severe geographic isolation (Sumirtha Gandhi et al., 2017). Despite growing scholarly interest in critical disability studies globally, tribal disability remains significantly under-researched and insufficiently explored within mainstream Indian academic and public health discourses (Ravindran, 2018). Consequently, research focusing specifically on the epidemiological patterns and lived experiences of disability among tribal populations in Odisha remains exceptionally limited (Rehman, 2025).

[Systemic Tribal Disadvantage]

(Poverty, Remote Topography, Illiteracy)

+

[Structural Disability Barriers]

(Stigma, Lack of Rehab, Exclusion)

=

DOUBLE MARGINALIZATION IN PVTGs

The Geopolitical Context of Odisha

The state of Odisha occupies a uniquely critical position within global indigenous and tribal studies. It is home to 62 distinct Scheduled Tribe communities, which account for nearly 23% of the state's total population, and includes 13 officially designated Particularly Vulnerable Tribal Groups (PVTGs) (Siva, 2025). Peripheral and tribal-dominated districts—such as Koraput, Malkangiri, Rayagada, Kandhamal, Mayurbhanj, and Keonjhar—continue to face compounding socioeconomic challenges (Rehman, 2025). These regions experience persistent pockets of:

- Absolute poverty and severe infrastructural deficits (Sumirtha Gandhi et al., 2017).

- Chronic malnutrition, high infant/under-five mortality rates, and endemic micronutrient deficiencies (Siva, 2025).
- Low institutional literacy and highly inadequate access to primary, secondary, and rehabilitative healthcare services (Siva, 2025).

These structural and environmental conditions act as decisive health determinants, significantly increasing disability prevalence while shaping the daily lived experiences of disabled tribal individuals (Saikia et al., 2016).

Theoretical Framework: A Biocultural Approach

To bridge these gaps, this review article critically examines the dynamics of disability among tribal communities in Odisha through an integrated **biocultural framework**. By synthesizing perspectives from biological anthropology, critical disability studies, medical sociology, and public health epidemiology, this approach avoids treating disability through a reductionist, purely medical model (Shattuck, 2019).

Instead, a biocultural framework demonstrates how localized ecological conditions, deep-seated cultural beliefs, patterns of social exclusion, and structural inequalities interact dialectically to shape human biology and impairment experiences (Shattuck, 2019; Swiderska et al., 2022). This comprehensive approach allows researchers to analyze how macro-level social inequities alter micro-level biological vulnerabilities, laying a solid theoretical foundation for culturally sensitive public health interventions and inclusive policy frameworks (Finn et al., 2017; Sharma et al., 2022).

2. Conceptual Framework and Theoretical Perspectives

2.1 Medical Model of Disability

The medical model has historically dominated institutional approaches to disability. According to this perspective, disability is conceptualized as an impairment or abnormality located within the individual body. Medical intervention, rehabilitation, and corrective treatment therefore become central responses to disability.

Although the medical model contributed substantially to clinical rehabilitation services, scholars have criticized it for reducing disability to a biological defect while ignoring social realities (Shakespeare, 2013). Persons with disabilities frequently encounter barriers not solely because of impairment itself but because of inaccessible institutions and discriminatory social attitudes.

2.2 Social Model of Disability

The social model emerged as a critical response to medicalized understandings of disability. Oliver (1990) argued that disability is socially constructed through exclusionary environments and unequal social structures rather than merely through bodily impairments.

This perspective shifted attention toward accessibility, rights, inclusion, and social participation. The social model significantly influenced disability activism and policy reforms across the world. However,

some scholars argue that the social model pays insufficient attention to bodily pain, illness, and biological vulnerability.

2.3 Biocultural Approach

The biocultural perspective offers a more comprehensive framework by integrating biological and socio-cultural dimensions of human health. Within anthropology, biocultural approaches examine how ecological conditions, nutrition, disease exposure, poverty, and cultural practices interact in shaping human well-being (Goodman & Leatherman, 1998).

In tribal contexts, disability may emerge from malnutrition, infectious diseases, maternal health complications, occupational risks, and inadequate healthcare access. Simultaneously, social stigma, cultural beliefs, gender inequality, and economic exclusion shape how disability is experienced within communities.

The biocultural perspective is particularly relevant for understanding disability among tribal populations because it recognizes the interconnected relationship between biology, culture, and structural inequality.

3. Tribal Communities in Odisha: Social and Health Context

Odisha possesses one of the largest tribal populations in India and represents a significant region for anthropological and public health research. Tribal communities in Odisha inhabit ecologically diverse regions including hills, forests, and remote rural settlements. Many communities remain economically dependent on subsistence agriculture, forest-based livelihoods, wage labour, and small-scale resource extraction.

Scholars such as Xaxa (2008) and Mohanty (2011) have demonstrated that tribal populations continue to experience developmental exclusion despite constitutional protections and welfare interventions. Land alienation, displacement due to mining and industrialization, food insecurity, educational deprivation, and inadequate healthcare infrastructure remain widespread in tribal-dominated districts.

Epidemiological Determinants and Vulnerabilities

Health indicators among indigenous tribal communities in India are frequently lower than state and national averages, creating deep-seated health inequities. As demonstrated in the empirical research conducted by **Bhoi and Acharya (2024)**, remote, tribal-dominated districts such as Koraput and Malkangiri show a severe, intersecting burden of disease. According to **Balgir (2009)**, this systemic vulnerability includes a remarkably high prevalence of childhood malnutrition—marked by severe wasting and chronic energy deficiencies—alongside widespread maternal anemia and iron deficiency disorders.

Furthermore, **Saroha et al. (2023)** highlight that these populations face an ongoing burden of endemic infectious diseases, most notably *Plasmodium falciparum* malaria, which frequently coexists with and exacerbates existing nutritional deficits. As observed by **Barik (2026)**, these biological vulnerabilities are systematically worsened by structural environmental deficits, including poor sanitation infrastructure

and a lack of access to safe drinking water. Within a biocultural framework, **Bhoi and Acharya (2024)** conclude that these compounding conditions do not merely elevate morbidity; they function as primary upstream determinants that significantly increase long-term vulnerability to both temporary and permanent physical and cognitive impairments.

The inaccessibility of healthcare facilities further intensifies health inequalities. Many tribal villages remain geographically isolated with poor road connectivity and limited institutional healthcare services. Consequently, early diagnosis, rehabilitation, and disability-related support services remain inadequate.

4. Biological Dimensions of Disability

4.1 Malnutrition and Developmental Disabilities

Malnutrition remains one of the most critical upstream contributors to physical and cognitive disabilities among indigenous tribal populations. As structurally analyzed by **Balgir (2009)**, chronic nutritional deficiencies during pregnancy and early childhood function as severe biological stressors that can result in permanent developmental delays, cognitive impairment, neuromuscular weakness, and musculoskeletal growth abnormalities.

Long-term epidemiological research conducted across the tribal regions of Odisha demonstrates a persistent, generational pattern of undernutrition among women and children. According to **Bhoi and Acharya (2024)**, poor dietary diversity, severe household food insecurity, and maternal iron-deficiency anemia continue to directly impair the neurological and physical development of children. This chronic deprivation is further compounded by a lack of access to timely nutritional safety nets. As a result, **Saroha et al. (2023)** highlight that these unaddressed nutritional shortfalls frequently transition from manageable health conditions into permanent structural and functional impairments, trapping families in a cycle of socioeconomic vulnerability.

4.2 Infectious Diseases

Infectious diseases continue to disproportionately affect tribal populations due to inadequate sanitation, poor healthcare access, and profound ecological vulnerability. As structurally analyzed by Bhoi and Acharya (2024), endemic conditions such as malaria, tuberculosis, meningitis, and untreated bacterial infections do not merely cause transient illness; they frequently result in long-term impairments, including permanent neurological disorders, visual disability, and severe mobility limitations.

Furthermore, Saroha et al. (2023) highlight that repeated malaria outbreaks—predominantly driven by *Plasmodium falciparum*—remain a severe public health challenge in remote tribal districts such as Malkangiri. According to Barik (2026), the intersection of limited healthcare infrastructure, geographic isolation, and delayed clinical treatment frequently worsens health outcomes. Within this structural framework, Balgir (2009) concludes that what begins as a treatable infectious episode often transitions into a permanent functional disability due to the systematic absence of timely secondary and tertiary medical interventions.

4.3 Maternal and Child Health

Maternal health conditions significantly influence disability prevalence and long-term health outcomes among children. As critically evaluated by Siva (2025), inadequate antenatal care, severe nutritional deficiencies, unsafe childbirth practices, and a lack of access to institutional delivery services drastically increase the risk of birth-related physical and cognitive disabilities within remote tribal communities.

Furthermore, Rehman (2025) emphasizes that systemic healthcare disparities and structural barriers heavily restrict maternal healthcare utilization in peripheral regions. According to Bhoi and Acharya (2024), the systemic absence of early screening facilities and secondary rehabilitation services in tribal regions often delays diagnosis and critical early intervention. Within this framework, Siva (2025) points out that structural gaps in maternal health management turn preventable birth complications into lifelong functional

5. Socio-Cultural Dimensions of Disability

5.1 Cultural Beliefs and Disability

Anthropological research demonstrates that disability is interpreted differently across distinct cultural settings. In several tribal communities, disability is often associated with supernatural beliefs, ancestral displeasure, spiritual imbalance, or fate. As critically observed by **Swiderska et al. (2022)**, these localized cultural frameworks directly guide health-seeking behaviors and shape the social responses directed toward persons with disabilities. Consequently, traditional healers and spiritual practitioners continue to play an important, deeply embedded role within tribal healthcare systems, often serving as the primary point of care before formal clinical intervention is sought (**Sharma et al., 2022**).

5.2 Social Exclusion and Stigma

Persons with disabilities within tribal communities frequently encounter severe discrimination and exclusion from educational, economic, and social opportunities. Structural stigma often limits their active participation in community rituals and drastically reduces opportunities for marriage and sustainable employment (**Saikia et al., 2016**).

Furthermore, women with disabilities experience compounding forms of exclusion due to intersectional gender-based inequalities. As argued by **Ghai (2015)**, disabled women face unique burdens of restricted mobility, economic dependency, and systematic educational deprivation. This dynamic reinforces the "double marginalization" described by **Saikia et al. (2016)**, where the intersection of gender, disability, and indigenous identity leaves women exceptionally vulnerable to structural neglect.

[Intersectional Vulnerability Framework]

|-- Indigenous Identity (Marginalized Status)

Disabled |

Woman |-- Gender Disparity (Economic Dependency)

|-- Physical/Cognitive Impairment (Social Stigma)

5.3 Education and Accessibility

Educational exclusion remains a profound structural challenge among tribal children with disabilities. Inaccessible school infrastructure, a critical shortage of trained special educators, linguistic barriers—particularly for communities speaking non-scheduled languages like Remo—and absolute poverty collectively contribute to low enrollment and high dropout rates (**Siva, 2025**). Although inclusive education policies exist at the national level, their structural implementation remains exceptionally weak and underfunded in remote, peripheral tribal areas (**Sumirtha Gandhi et al., 2017**).

6. Disability Policies and Welfare Access

India has introduced several comprehensive policy frameworks aimed at protecting and promoting the rights of persons with disabilities. A major legislative milestone, the Rights of Persons with Disabilities (RPwD) Act (2016), significantly expanded the number of recognized disability categories and placed a strong statutory emphasis on equality, non-discrimination, and universal accessibility (**Saikia et al., 2016**).

However, translation from policy to practice faces severe roadblocks in tribal regions. As documented by **Roy (n.d.)**, a vast majority of tribal persons with disabilities face immense structural difficulties in obtaining official disability certificates, which serves as the mandatory gateway for accessing welfare schemes, monthly pensions, and assistive devices. According to **Rehman (2025)**, language barriers, bureaucratic complexity, low community awareness, and geographical isolation continue to restrict effective policy implementation, leaving the most vulnerable segments of the indigenous population disconnected from state-sponsored rehabilitation and social safety nets.

7. Research Gaps

The review identifies several important research gaps:

1. Limited ethnographic studies focusing specifically on tribal persons with disabilities in Odisha.
2. Inadequate integration of biological anthropology and disability studies.
3. Scarcity of gender-focused disability research among tribal populations.
4. Limited district-level disability data.

5. Minimal participatory and community-based research methodologies.
6. Inadequate documentation of indigenous understandings of disability.

These gaps highlight the need for interdisciplinary and culturally grounded research frameworks.

8. Discussion

Disability among tribal communities in Odisha cannot be understood solely through biomedical explanations. Instead, as synthesized by Bhoi and Acharya (2024), disability emerges through the complex interaction of ecological conditions, absolute poverty, chronic nutritional deprivation, endemic disease burdens, social exclusion, and structural institutional barriers.

The biocultural framework validated by Shattuck (2019) provides an essential academic paradigm for integrating the biological and socio-cultural dimensions of impairment. Such an approach explicitly recognizes that health outcomes and physiological vulnerabilities are shaped by broader socio-political structures, historical disenfranchisement, and geographic inequities rather than individual medical deficits alone.

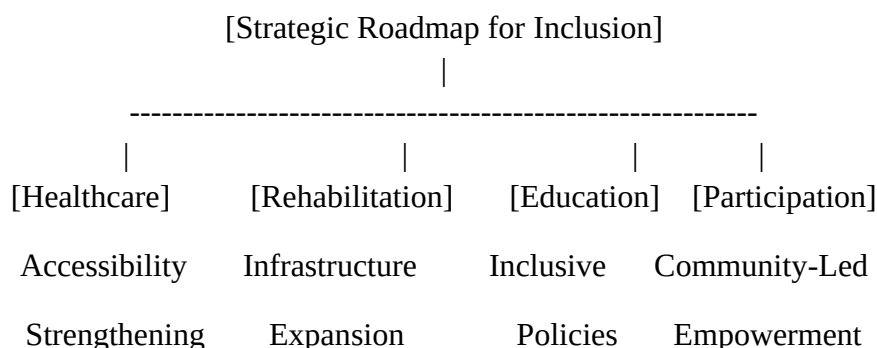
This review also demonstrates that tribal persons with disabilities experience compounding forms of "double marginalization" linked simultaneously with ethnicity, socio-economic poverty, geographical isolation, and inadequate healthcare infrastructure, a phenomenon heavily documented by Saikia et al. (2016). Addressing disability within peripheral tribal regions therefore requires a shift away from top-down, generalized medical approaches. As concluded by Balgir (2009), it demands the implementation of inclusive, decentralized, and context-sensitive policy frameworks that respect and account for local cultural realities, linguistic diversity, and the unique ecological landscapes of Odisha's indigenous populations.

9. Conclusion

Disability among tribal communities in Odisha represents a complex intersection of biological vulnerability, socio-cultural exclusion, economic deprivation, and structural inequality. As comprehensively synthesized by Bhoi and Acharya (2024), existing literature demonstrates that tribal persons with disabilities remain highly underrepresented within academic research, formal healthcare systems, and targeted policy implementations. This severe gap in data and care deepens the isolation of already vulnerable populations, leaving their specific physical and rehabilitative needs largely invisible to mainstream health networks.

The biocultural framework validated by Shattuck (2019) and adopted in this review highlights the critical importance of integrating biological anthropology, critical disability studies, medical sociology, and public health perspectives to understand human impairment within unique tribal contexts. To build on these insights, future research must move away from clinical, top-down models. As argued by Swiderska et al. (2022), priority should be given to long-term ethnographic fieldwork, participatory

methodologies, and region-specific studies that involve indigenous communities directly, ensuring the development of inclusive and culturally sensitive interventions.



Ultimately, transforming the lived realities of these populations requires a well-rounded, structural approach. According to Siva (2025), improving healthcare accessibility, strengthening local rehabilitation services, expanding inclusive education, and promoting active community participation are essential steps for enhancing the overall quality of life for tribal persons with disabilities in Odisha. Implementing these integrated measures will allow policy frameworks to transition from passive guidelines into active tools of social justice.

References

1. Balgir, R. S. 2009. "Tribal Health Problems, Disease Burden and Ameliorative Challenges in Tribal Communities with Special Emphasis on Tribes of Orissa." National Symposium on Tribal Health, 161–176.
2. Barik, L. 2026. "Malaria in Tribal Communities of Odisha: A Narrative Review of Prevalence, Risk Factors, and Public Health Implications." International Journal of Social Science Research 3, no. 2: 112–125.
3. Barnes, C., and G. Mercer. 2010. Exploring Disability. 2nd ed. Cambridge: Polity Press.
4. Bhoi, N., and S. K. Acharya. 2024. "Health Status of Particularly Vulnerable Tribal Groups (PVTGs) of Odisha: A Narrative Review." Journal of Health, Population and Nutrition 43, no. 1: 1–15. <https://doi.org/10.1186/s41043-024-00671-8>.
5. Census of India. 2011. Data on Disability in India. New Delhi: Office of the Registrar General and Census Commissioner.
6. Finn, S., M. Herne, and D. Castille. 2017. "The Value of Traditional Ecological Knowledge for the Environmental Health Sciences and Biomedical Research." Environmental Health Perspectives 125, no. 8: 085006. <https://doi.org/10.1289/ehp858>.
7. Ghai, A. 2015. Rethinking Disability in India. London: Routledge. <https://doi.org/10.4324/9781315775038>.
8. Goodman, A. H., and T. L. Leatherman. 1998. Building a New Biocultural Synthesis: Political-Economic Perspectives on Human Biology. Ann Arbor: University of Michigan Press.
9. Mohanty, B. B. 2011. "Agriculture, Social Exclusion and Tribal Development in India." Social Change 41, no. 2: 193–208. <https://doi.org/10.1177/004908571104100203>.
10. Oliver, M. 1990. The Politics of Disablement. London: Macmillan.

11. Ravindran, T. K. 2018. Health Among Tribal Communities in India: A Synthesis of Three Studies. Health Action by People.
12. Rehman, T. 2025. "Socioeconomic and Sex Disparities in Hypertension and Diabetes Mellitus Care Cascade Among Tribal Populations in Odisha, India: Findings from the Odisha Tribal Family Health Survey (OTFHS), 2022–23." BMC Public Health 25, no. 1: 1234–1245.
13. Roy, B. n.d. Assessment and Mapping of Disability Prevalence in India: A District-Level Analysis. Indian Association for the Study of Population (IASP).
14. Saikia, N., J. K. Bora, D. Jasilionis, and V. M. Shkolnikov. 2016. "Disability Divides in India: Evidence from the 2011 Census." PLOS ONE 11, no. 8: e0159809. <https://doi.org/10.1371/journal.pone.0159809>.
15. Saroha, P., S. K. Gupta, C. P. Yadav, J. Gill, P. Sahoo, H. Singh, H. C. Vani, S. Pati, M. Rahi, and A. Sharma. 2023. "Socioecological Risk Factors Associated with Malaria in Pregnancy in an Endemic State of India: A Retrospective Study." BMJ Public Health 1, no. 1: e000004. <https://doi.org/10.1136/bmjph-2023-000004>.
16. Shakespeare, T. 2013. Disability Rights and Wrongs Revisited. 2nd ed. London: Routledge. <https://doi.org/10.4324/9780203107920>.
17. Sharma, P. K., A. Singh, and N. K. Sharma. 2022. "A Socio-Ecological Critique on India's Local Health Traditions Amidst Rising Incidence of Global Pandemics." Journal of Herbal Medicine 34: 100578. <https://doi.org/10.1016/j.hermed.2022.100578>.
18. Shattuck, E. C. 2019. "A Biocultural Approach to Psychiatric Illnesses." Psychopharmacology 236, no. 10: 2923–2936. <https://doi.org/10.1007/s00213-019-5178-7>.
19. Siva, N. 2025. "A Systematic Scoping Review of Health-Seeking Behavior and Healthcare Utilization in Tribal Communities of Odisha, India: Concentration on Maternal and Child Health." Journal of Global Health Reports 9: e2025009.
20. Sumirtha Gandhi, S., R. V. Veenapani, and D. Umakant. 2017. "Health Seeking Behaviour Among Particularly Vulnerable Tribal Groups: A Case Study of Nilgiris." Journal of Public Health and Epidemiology 9, no. 4: 74–83. <https://doi.org/10.5897/jphe2017.0911>.
21. Swiderska, K., A. Argumedo, C. Wekesa, L. Ndalilo, Y. Song, A. Rastogi, and P. Ryan. 2022. "Indigenous Peoples' Food Systems and Biocultural Heritage: Addressing Indigenous Priorities Using Decolonial and Interdisciplinary Research Approaches." Sustainability 14, no. 18: 11311. <https://doi.org/10.3390/su141811311>.
22. WHO (World Health Organization). 2011. World Report on Disability. Geneva: World Health Organization.
23. Xaxa, V. 1999. "Tribes as Indigenous People of India." Economic and Political Weekly 34, no. 51: 3589–3595.
24. Xaxa, V. 2008. State, Society, and Tribes: Issues in Post-Colonial India. New Delhi: Pearson Education.