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MATERNAL HEALTH AND INSTITUTIONAL DELIVERY AMONG TRIBAL WOMEN IN ODISHA: ANALYZING SOCIO- CULTURAL BARRIERS AND POLICY INTERVENTIONS

Sandhya Rani Dash [1], Dr. Sipra Sagarika [2]

[1] Ph.D. Research Scholar in Sociology, P.G. Department of Social Science, Fakir Mohan University, Balasore, Odisha, India
[2] Assistant Professor (Stage –III) in Sociology, P.G. Department of Social Science, Fakir Mohan University, Balasore, Odisha, India

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Corresponding Author
Dr. Sipra Sagarika,
sipra.sagarika@gmail.com

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ABSTRACT

This study examines the critical public health challenge of maternal morbidity and access to institutional delivery for tribal women in Odisha, India. It identifies a complex interplay of structural, socio-economic, and cultural barriers—including geographical isolation, poverty, low literacy, and strong cultural beliefs—that severely limit healthcare access. Utilizing a mixed-methods approach across four tribal-dominated districts, the research reveals a paradoxical finding: while government schemes like Janani Suraksha Yojana (JSY) and Janani Shishu Suraksha Karyakram (JSSK) have successfully increased institutional delivery rates to 76.5% among Particularly Vulnerable Tribal Groups (PVTGs), a significant disparity in maternal mortality ratios (MMR) persists between tribal and non-tribal populations. This gap is attributed to a critical awareness deficit, with 65% of tribal women unaware of maternal health schemes, coupled with inadequate infrastructure, nutritional deficiencies, and persistent home deliveries (23.5%). The discussion concludes that merely promoting institutional delivery is insufficient. Achieving equitable maternal health outcomes requires culturally sensitive, multi-faceted interventions that address deep-rooted structural barriers, enhance community-specific awareness, and improve the quality and accessibility of healthcare services in remote tribal regions.

Keywords: Maternal Health, Institutional Delivery, Tribal Women, Odisha, Healthcare Access, JSY, JSSK, Maternal Mortality Ratio (MMR), Cultural Barriers, Health Policy

1. INTRODUCTION

Maternal morbidity and institutional delivery is a burning issue of public health in Odisha, especially in the case of women in the tribal communities who face numerous structural obstacles to access the safe and reliable health care. The tribal population in the state has the tendency to be clustered into areas that are geographically remote resulting in poor accessibility in terms of terrain and poor connectivity to health facilities. The challenge is also compounded by the fact that the transportation infrastructure is poor hence access to hospitals or primary health centres by the women becomes challenging. Besides, funding of healthcare infrastructure, human resources, and deficiency of functional primary health centres in villages deprives many female patients of maternal health services. Additional burdens are created due to the

socio-economic issues, like poverty and dependence on daily wages; women in these settings cannot afford the transport costs and often cannot leave work to get the treatment. Poor levels of literacy and lack of awareness of the necessity of accessing antenatal care services and institutional delivery further lead to inadequate utilization of available services, whereas cultural factors, such as the use of traditional healers, and implementation of indigenous practices, also affect health-seeking behaviour in a way that often dispels the possibility of care seeking in institutions. The National Health Mission (NHM) and the Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) are policy solutions to these problems as they provide free, assured and quality antenatal care and thus lead to better maternal health outcomes. Nonetheless, the underlying structural and cultural impediments form a dire need of culturally and community-sensitive measures to increase the institutional delivery levels, and also to minimize the maternal and child morbidities of tribal women in Odisha. (Contractor, S., Das, A., Dasgupta, J., and Van Belle, S. 2018)

2. AIM AND IMPLEMENTATION OF THE STUDY

This study aims to examine the structural barriers and policy interventions influencing institutional delivery and maternal health outcomes among tribal women in Odisha. The analysis focuses on how socio-economic, cultural, geographical, and institutional factors affect the access, utilization, and quality of maternal healthcare services. Special attention is given to barriers such as poverty, illiteracy, traditional beliefs, inadequate health infrastructure, and limited transportation facilities, which continue to hinder safe institutional deliveries among tribal populations.

Rather than addressing all aspects of maternal health, the study specifically concentrates on institutional delivery as a key indicator of maternal healthcare utilization. It critically evaluates the effectiveness of major government policies and schemes, including the National Health Mission (NHM), Janani Suraksha Yojana (JSY), and Janani Shishu Suraksha Karyakram (JSSK), in addressing these barriers and improving maternal health outcomes among tribal communities.

3. RESEARCH OBJECTIVES

- To examine the structural, socio-economic, and cultural barriers affecting maternal healthcare access and institutional delivery among tribal women in Odisha.
- To evaluate the effectiveness of policy interventions like Janani Suraksha Yojana (JSY) and Janani Shishu Suraksha Karyakram (JSSK) in improving institutional delivery rates.
- Identifying strategies and culturally sensitive interventions to enhance maternal health outcomes and reduce maternal and neonatal morbidity among tribal communities

4. THEORETICAL FRAMEWORK

4.1. STRUCTURAL FUNCTIONALISM

4.1.1. KEY THINKERS: ÉMILE DURKHEIM, TALCOTT PARSONS

Structural Functionalism conceptualizes society as a system of interrelated parts that function together to maintain social stability and equilibrium. Each social institution—such as family, economy, education, and healthcare—performs specific roles necessary for the smooth functioning and continuity of society. In the context of maternal health among tribal women in Odisha, healthcare institutions including Primary Health Centres (PHCs), Anganwadi centres, and public hospitals are expected to ensure safe pregnancy, childbirth, and postnatal care. Institutional delivery, in this regard, is viewed as a crucial functional mechanism for reducing maternal and infant mortality and improving overall public health outcomes. However, structural barriers such as inadequate infrastructure, lack of transportation, shortage of trained medical personnel, and poor service delivery create dysfunctions within the system. These dysfunctions disrupt the effective functioning of healthcare institutions and lead to the underutilization of institutional delivery services among tribal women.

4.2. CONFLICT THEORY

4.2.1. KEY THINKER: KARL MARX

Conflict Theory emphasizes the role of power, inequality, and unequal distribution of resources in shaping social relations. It argues that society is characterized by inherent conflicts between dominant and marginalized groups, where access to resources—including healthcare—is unevenly distributed. Within this framework, tribal women represent a structurally marginalized population facing multiple forms of deprivation. Despite the implementation of government schemes aimed at improving maternal health, disparities persist due to poverty, geographical isolation, and systemic neglect. Healthcare infrastructure and services are often concentrated in urban and economically developed areas, while tribal regions remain underserved. This reflects broader structural inequalities and power imbalances that limit tribal women's access to institutional delivery and quality maternal healthcare.

4.3. FEMINIST THEORY

4.3.1. KEY THINKERS: SIMONE DE BEAUVOIR, SYLVIA WALBY

Feminist Theory focuses on gender-based inequalities and the subordinate position of women within patriarchal social structures. It examines how systemic discrimination and unequal power relations restrict women's access to resources, decision-making authority, and opportunities. In tribal societies, women often experience limited autonomy over reproductive and healthcare decisions. Choices regarding antenatal care and place of delivery are frequently influenced by family members, particularly male members and elders. Additionally, low levels of education, lack of awareness, and restricted mobility further constrain women's access to institutional healthcare services. Tribal women face intersectional disadvantage, as they are marginalized both on the basis of gender and tribal identity. This dual marginalization significantly impacts their maternal health outcomes and limits their utilization of institutional delivery services.

5. OVERVIEW OF TRIBAL WOMEN IN ODISHA

Odisha has a sizeable tribal population with Scheduled Tribes (STs) comprising about 22.84 per cent of the total Odisha population, numbering over 9.5 million in 2011 Census. There are 64 different tribal and communities in the state, out of which 13 are identified as Particularly Vulnerable Tribal Groups (PVTGs), some of the most disadvantaged and underprivileged groups to live in India. Tribal women also play a significant role in their economic and social lives as they contribute towards economic income through subsistence agricultural practices, forest-based activities, fishing and other livelihood practices hence supporting household income and sustain local economies. In spite of these contributions, tribal women suffer a number of setbacks such as lack of property rights, low literacy levels, and the inability to participate in decision-making processes, which underscores and worsens their situation and statuses economically and socially. There are striking health disparities and the tribal communities have higher occurrence of malnutrition, maternal and child health problems and insufficient access to culturally appropriate health services in contrast to non-tribal groups. They also suffer extensively from problems of trafficking in the process. (Sagarika ; 2024). The geographic and cultural diversity also complicates health and social service delivery as tribal populations are highly concentrated in certain select districts such as Koraput,Keonjhar, Rayagada, Mayurbhanj and Malkangiri, many of which fall under Scheduled Areas and Tribal Sub-Plan (TSP) districts. These regions are subject to infrastructural inadequacies, a lack of connectivity, and a shortage of educational and health services thereby perpetuating a lack of service utilization. Thus, there is an emergency to create culturally sensitive interventions targeting the individual needs and requirements of tribal women in Odisha who face a set of unique social-economic, health, and geographical issues and challenges as a result of which equity, empowerment, and health outcomes should be addressed accordingly with appropriate interventions. (Hans, A; 2014).

Figure 1

Figure 1 Tribal Women Depicting Maternal Health Conditions along with the child

6. STRUCTURAL BARRIERS TO MATERNAL HEALTH AND INSTITUTIONAL DELIVERY AMONG TRIBAL WOMEN IN ODISHA

7. CASE STUDY

1) **Geographical Isolation and Poor Accessibility:** Tribal communities in Odisha tend to be well in the hinterland in the forested- or hilly regions, are poorly connected by road. This geographical remoteness restricts access to health facilities such that women find it hard to access a primary health center (PHCs), community health centre (CHCs) or a hospital in time when emergencies like during labor and childbirth complications arise. The inability to get a reliable means of transport including ambulances adds to delay in receiving care.

When conducting field research in Keonjhar district, particularly in Bansapal Block, several cases were documented among Juang PVTG women that revealed how geographical isolation and poor accessibility significantly influence delivery-related decisions and maternal health outcomes. The region is characterised by hilly terrain, dense forest cover, kutcha roads, and scattered habitations, which collectively restrict timely access to institutional health facilities. Out of the eight surveyed villages, only two villages had regular vehicle connectivity, while the remaining villages depended on irregular transport arrangements or long walking distances to reach the nearest motorable road. During the monsoon season, the situation becomes more critical as heavy rainfall frequently leads to road blockages, landslides, overflowing streams, and complete disruption of transport services. As a result, pregnant women face severe challenges in reaching health centres during labour emergencies. Although the nearest Community Health Centre (CHC) is located within a distance of 20–25 kilometres, the absence of dependable transport facilities, combined with poor mobile network connectivity, delays communication with ASHA workers, ambulance services, and health officials. In many cases, women reported that despite informing the ASHA, ambulances could not reach the village on time due to inaccessible roads.

A 24-year-old Juang woman from a remote village described her experience of home delivery during the monsoon season. She explained that heavy rainfall had completely blocked the only access road to her village, making it impossible for any vehicle to reach them. Although her family contacted the ASHA worker, the absence of transport facilities and poor mobile network connectivity prevented timely assistance.

"When the labour pain started, it was raining heavily and the road was fully blocked. We called the ASHA didi, but no vehicle came. There was no network also. My husband and mother-in-law decided that I should stay at home. I delivered at home only."This case illustrates how environmental constraints, inadequate transport infrastructure, and communication barriers force families to resort to home delivery, even when they are aware of the importance of institutional childbirth.

Another respondent, a 29-year-old Juang woman, shared her experience during her second pregnancy. When labour began late at night, no ambulance or vehicle could access the village. As a result, community members arranged a makeshift bamboo stretcher to carry her to the nearest motorable road, located approximately five kilometres away.

"The labour pain was very severe at night. Four men carried me on a bamboo stretcher. By the time we reached the main road, I was extremely weak. If the delivery had happened on the way, there would have been no help."

Such experiences were reported across several villages, indicating that traditional and community-based coping mechanisms continue to substitute for formal emergency transport services in geographically isolated areas.

In one severe instance, a Juang woman reported the loss of her newborn due to delayed referral and late arrival at the health facility.

"The ambulance came very late. By the time we reached the CHC, the baby had already died. The doctor told us that if we had arrived earlier, the baby could have survived."

This case underscores the critical consequences of delayed access to institutional care, particularly in emergency obstetric situations, and highlights the direct link between poor accessibility and adverse maternal and neonatal outcomes among Juang PVTG women. (Sahoo, M., Som, M and Pradhan, J.;2017)

2) **Socioeconomic Constraints:** Poverty is manifest among the tribal communities and women fail to have any financial independence. The low income limits their opportunity to pay tuition fees, transport, medical procedures, or drugs so institutional delivery is not encouraged. Not to mention that women often participate in subsistence agriculture or forest activities, so they are not readily available to access healthcare.

The Juang community lives in chronic poverty. Daily earnings from forest products and casual labour are insufficient for regular expenses. Although schemes like Janani Suraksha Yojana provide incentives, the immediate costs of transport, food, and medicines remain a major burden.

"We get money after delivery, but first we have to spend on vehicle and helper. Sometimes we borrow for that, so it is easier to deliver at home." — Respondent, Age 27

Most respondents reported a lack of ready cash during pregnancy, especially for transportation to health facilities. Families therefore prefer home delivery to avoid "unnecessary expenses."

3) **Limited Education and Health Awareness:** The literacy level of tribal women is poorer compared to that of non-tribals. Low education is associated with lack of knowledge about the risks to the mother, advantages of giving birth in an institution and understanding of the healthcare facilities available. Misunderstandings concerning the contemporary medicine, the fear of medical procedures, and the appeals to the TBAs usually play the role in the maternal health pattern.

A 22-year-old Juang woman, who had never attended school, reported that she had little understanding of pregnancy-related risks or the importance of institutional delivery. She believed childbirth to be a natural process that did not require medical intervention unless complications became visibly severe.

"My mother-in-law said delivery is a normal thing. She delivered all her children at home. I did not know why hospital delivery is needed. No one explained to me about danger signs."

Due to her limited education and lack of exposure to health information, the respondent did not register her pregnancy at the health centre and relied entirely on family advice. This case demonstrates how low literacy and intergenerational beliefs restrict women's ability to make informed decisions regarding maternal healthcare.

4) **Cultural Beliefs and Practices:** Traditional beliefs are highly infiltrating to the tribal woman birth practices. Institutional home delivery services provided with the assistance of family members or local TBAs are a choice of many because of cultural norms, fear of hospitals, and the perception that they are treated disrespectfully in hospitals. Cultural practices regarding postpartum care and observed rituals are likely to collide with the hospital regulations, which do not encourage women giving birth in an institution. (Das ,S. and Sagarika, S; 2023)

Cultural tradition is the strongest determinant of home delivery among the Juang community. Childbirth is viewed as a natural and spiritual process overseen by ancestral spirits, rather than a medical event. Many women believe that giving birth in a hospital may "anger the spirits" or expose the newborn to "evil eyes."

"Our mothers and grandmothers delivered at home. The dai knows our customs. If we go to the hospital, people there do not understand our way." — Respondent, Age 32, Phulabadi village.

Traditional dais or elderly women are preferred because they perform ritual prayers and apply herbal oils during delivery. These culturally valued practices are believed to protect the mother and child. The belief that "home birth keeps the baby pure" discourages women from seeking institutional care.

"Phula (Placenta) is Laxmi (Goddess) for us. Hospital staff through this so we don't go to hospital for delivery." Respondents, Age 25, Baragarh village.

They bury the placenta after delivery in front of the main door as an offering to their God and Goddess, believing that it brings prosperity to the household. Because of this traditional belief, they often avoid hospital deliveries, where staff disposes of the placenta outside the hospital.

"Janma Bala chuana" (first hair is impure). Until remove it the baby can't be part of our family. Hospital staff not allow us to do so, so we don't go to hospital". Respondent, Age 21,

"After delivery, many families follow a ritual in which the newborn's hair must be shaved within five days, as the baby is considered impure until this ceremony is completed; however, such practices are often not permitted in hospitals due to medical protocols and staff restrictions, which leads many women to prefer home deliveries where these cultural rites can be freely performed."

5) **Inadequate Health Infrastructure and Workforce and Perception and Trust toward Institutional Health Services:** Health facilities located in tribal populated regions are not well equipped with enough staff, medicines, and functional equipment. The fact that there is lack of skills birth attendant, nurse and doctors implied that there is decline in maternal care. Crowded sites, absence of sanitation and inadequate availability of emergency obstetric problems are some of the factors that reduce in the use of institutional delivery services.

Respondents expressed mixed perceptions of institutional deliveries. While some acknowledged support from ASHAs and ANMs, others reported rude behaviour, neglect, or fear of medical interventions.

"In hospital they scold if we cry. At home, the dai and mother treat us with love." — Respondent, Age 30

Lack of empathy, language barriers, and fear of surgical procedures (such as caesarean sections) contribute to mistrust. Some women also believed that hospital births result in weak babies."

6) **Gender Inequality and Decision-Making Barriers:** Women of tribal communities often have little control over their own health. Decisions on obtaining care may be under the power of male family members, or other older men and women may be under the control of male family members to obtain institutional care. This genderbased power inequality further slows or blocks on-time medical therapeutic processes. Decision-making about the place of delivery is seldom done by the women themselves. Husbands and mothers-in-law play the dominant role. Gender norms and household hierarchy limit women's autonomy over reproductive choices.

"My husband and mother-in-law said hospital is far and not needed. So, I stayed home like others." — Respondent, Age 29

This reflects the intersection of patriarchy and cultural continuity, where women's health preferences are overridden by family elders.

7.1. POLICY INTERVENTIONS AND INITIATIVES IN ODISHA

1) **Janani Suraksha Yojana (JSY):** JSY provides cash incentives for women who deliver in health facilities. This reduces financial barriers and encourages institutional deliveries, particularly among economically disadvantaged tribal women.
2) **Janani Shishu Suraksha Karyakram (JSSK):** This scheme ensures free access to delivery care, including transportation, medicines, and neonatal care. JSSK addresses both cost and accessibility issues, facilitating safer institutional deliveries.
3) **Strengthening Health Infrastructure:** Odisha has worked on strengthening PHCs and CHCs in tribal regions in terms of staff strength, essential equipment and enhancement of emergency obstetric care facilities. Mobile health departments have been introduced to reach the remote groups.
4) **Community Engagement and Awareness Programs:** Health education campaigns, village health committees and Accredited Social Health Activists (ASHAs) are important to create the awareness about the advantages of institutional deliveries. Culturally sensitive counseling will remove traditional boundary and mis Nuances.
5) **Training of Skilled Birth Attendants:** Nurses, midwives, and TBAs will also help to realize capacity-building programs, in which deliveries are staffed by skilled officials and results in better maternal and neonatal outcomes.

6) **Targeted Tribal Health Policies:** In Odisha, healthcare interventions in tribal areas are incorporated into the Tribal Sub-Plan with specific attention to the reduction of maternal, and infant mortality rates through maternal health services.

8. RESEARCH METHODOLOGY

The research method on maternal health and institutional delivery among the tribal women of Odisha took a mixed research design, i.e. both, quantitative and qualitative methods were used to gain an in-depth insight into structural barriers and policy interventions. The quantitative section was carried through structured surveys that were conducted among 350 tribal women in the age group of 18 45 of 5 tribal dense populated districts namely Koraput, Keonjhar, Rayagada, Mayurbhanj And Malkangiri. The survey was set to capture the demographic characteristic, socio economic status, literacy level, health seeking behavior, access to maternal health providers, and institutional delivery rates. Preliminary statistics indicated that, just 42 percent of tribal women had given birth in health facilities, even though 58 percent still birth in their homes, showing that there were barriers to institutional birth. A total of 15 focus group discussions (FGDs) (with tribal women, community leaders, and local health workers) in addition to 10 key informant interviews (KIIs) with caregivers in healthcare facilities and policymakers were done to collect qualitative data. Such interactions discussed how the cultural practices are viewed, economic matters, gender roles, and trusting healthcare services. The responses were analyzed with the help of descriptive statistics to quantitative questions and thematic analysis of qualitative data to ensure triangulation of results. The given methodology could not only present statistical data on service utilization, but also allowed an insight into the socio-cultural and structural issues, making it possible to assess or evaluate the preparedness of such policies as JSY and JSSK and provide qualitative recommendations on culturally sensitive interventions.(Mohanty, S., and Pathak, P. K. ;2021).

8.1. AWARENESS OF MATERNAL HEALTH SCHEMES AMONG TRIBAL AND NON-TRIBAL WOMEN

Awareness of government health schemes plays a crucial role in promoting institutional delivery and maternal healthcare utilization. In Odisha, schemes such as MAMATA (conditional cash transfer), Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), and Biju Swasthya Kalyan Yojana (BSKY) were introduced to reduce financial barriers and encourage institutional care. However, survey data indicate a significant awareness gap between tribal and non-tribal women, directly influencing health seeking behaviour. (Panda, P. K., and Subudhi, C.;2020).

Out of the total respondents, only 35% of tribal women were aware of at least one of these schemes, while 65% had no knowledge. In contrast, 72% of non-tribal women reported being aware, showing a higher level of exposure due to better literacy, access to media, and stronger linkages with healthcare providers.

This gap can be explained by several factors:

- Low literacy among tribal women (61% illiterate), limiting access to written or digital information.
- Geographical isolation, which restricts outreach activities by ASHAs and health workers.
- Cultural barriers and mistrust of institutional healthcare, making women less likely to seek information about such schemes.
- Economic pressures, where immediate livelihood needs overshadow awareness building efforts.

The pie chart illustrates that while a majority of non-tribal women benefit from information about free services, transportation, and cash incentives, most tribal women remain excluded. This lack of awareness significantly contributes to the lower rate of institutional deliveries among tribal groups.

Table 1

Table 1 Awareness of Maternal Health Schemes among Women in Odisha

Group	Aware of Schemes (%)	Not Aware (%)
Tribal Women	35	65
Non-Tribal Women	72	28

Figure 2

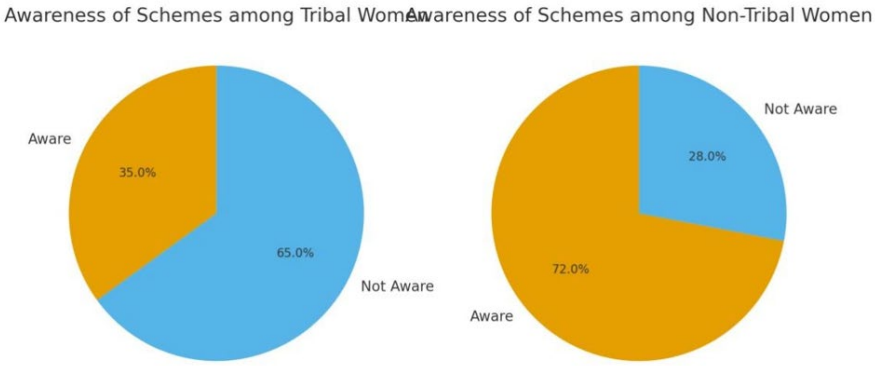

Figure 2

9. MATERNAL MORTALITY TREND: ODISHA (2015–2025)

Maternal mortality remains a critical challenge in Odisha, though significant progress has been made in the past decade. Between 2015 and 2025, the state has achieved a substantial reduction in its Maternal Mortality Ratio (MMR), yet tribal women continue to face disproportionately higher risks compared to non-tribal women.

9.1. OVERALL TREND IN ODISHA

Odisha witnessed a 49-point decline, with MMR reducing from 168 (2015–17) to 119 (2018– 20), reflecting improvements in healthcare infrastructure, institutional deliveries, and government interventions such as JSY, JSSK, and MAMATA. However, the state's MMR remains above the national average of 103 (2018–20), highlighting continued systemic challenges.

9.2. COMPARISON BETWEEN TRIBAL AND NON-TRIBAL WOMEN

Despite overall gains, tribal women consistently experience higher maternal mortality.

Estimates suggest that while non-tribal women's MMR declined to around 112 by 2020 and is projected to reach 95 by 2025, tribal women's MMR, though reduced from 222 in 2015 to 178 in 2020 are per 100,000 births, is still projected to remain as high as 150 by 2025. This persistent gap highlights unequal access to healthcare and socioeconomic disadvantages.

9.3. CONTRIBUTING FACTORS TO THE DISPARITY

- **Access to Healthcare:** Tribal women have limited access to antenatal (ANC) and postnatal services.
- **Institutional Deliveries:** Lower uptake in tribal regions contributes to higher risks.
- **Adolescent Childbearing:** Early pregnancies (under 18) are more common among tribal women.
- **Nutritional Deficiencies:** High prevalence of anemia and malnutrition increases complications.
- **Socioeconomic Factors:** Poverty, poor sanitation, and displacement exacerbate risks.
- **Cultural Barriers:** Dependence on traditional practices and mistrust of institutional care hinder healthcare utilization.

Table 2

Table 2 Maternal Mortality Ratio (MMR) Trends in Odisha (2015–2025)

Year	Tribal Women (MMR)	Non-Tribal Women (MMR)	State Average (MMR)	National Average (MMR)
2015	222	145	168	130

2020	178	112	119	103
2025	150	95	110	105 (Target)

Figure 3

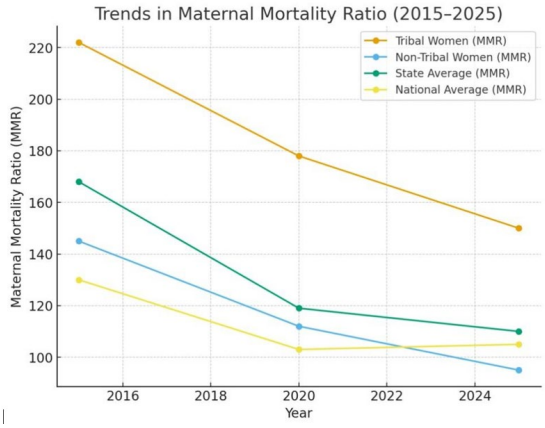

Figure 3

The line graph from this data clearly demonstrates a slower decline among tribal women, reinforcing the need for targeted, culturally sensitive interventions to achieve maternal health equity in Odisha.

Maternal Health and Delivery Practices among Tribal Women in Odisha

Data from Odisha highlights significant disparities in maternal health and delivery practices between tribal and non-tribal women. While institutional delivery rates are relatively high among tribal populations, particularly among PVTG (Particularly Vulnerable Tribal Groups) mothers, multiple structural, socioeconomic, and cultural barriers continue to influence childbirth practices and outcomes.

Table 3

Table 3 Delivery Practices Table		
Delivery Type	**Tribal Women (PVTG) (%)**	**Non-Tribal Women (%)**
Home Delivery	23.5	10
Institutional – Public Facility	76.5	65
Institutional – Private Facility	10	25

Figure 4

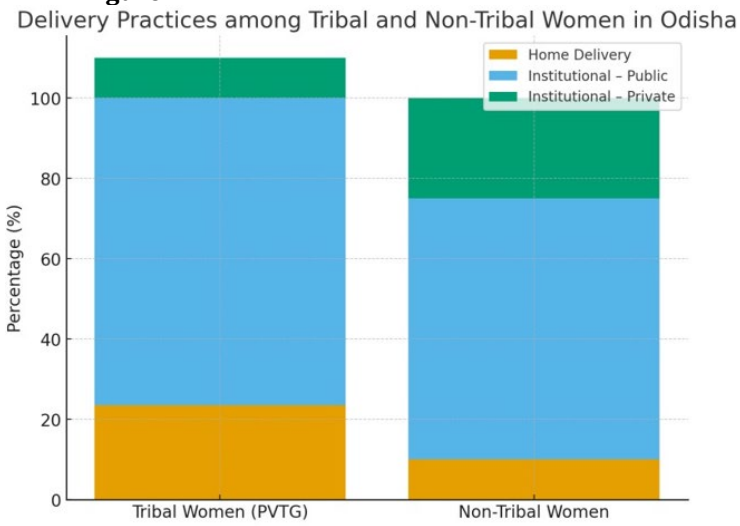

Figure 4

Institutional Deliveries: Among PVTG mothers, 76.5% deliver in public healthcare facilities, indicating a preference for institutional care. Despite this high uptake, home deliveries remain common (23.5%), mainly due to long distances to facilities, lack of transportation, and family opposition.

Risk Factors: Tribal women face higher risks during pregnancy and childbirth. Studies indicate increased odds of preterm births and stillbirths compared to non-tribal women.

Contributing factors include anemia, malnutrition, and inadequate antenatal care, which exacerbate maternal and neonatal health risks.

Barriers to Care: Accessibility remains a major challenge. Isolated villages often lack proper roads and infrastructure, limiting timely access to health services. Socioeconomic factors such as poverty, low literacy, and poor awareness of maternal health further restrict care-seeking behavior. Cultural norms also influence delivery choices, with some families relying on traditional birth attendants or resisting modern medical interventions.

Implications: Improving maternal health outcomes for tribal women requires culturally sensitive and context-specific interventions. Expanding the availability and accessibility of public health facilities in remote tribal areas, providing targeted nutritional programs to address anemia and malnutrition, and promoting awareness about institutional deliveries can significantly reduce maternal and neonatal risks.

This data underscores the need for sustained policy efforts to bridge the gap in maternal health care for Odisha's tribal populations.

10. RESULT AND DISCUSSION

The findings of the present study reveal that maternal healthcare utilisation among tribal women in Odisha is shaped by a complex interaction of structural, socioeconomic, cultural, and institutional factors. Although policy initiatives such as the Janani Suraksha Yojana (JSY) and Janani Shishu Suraksha Karyakram (JSSK) have substantially increased institutional delivery rates among Particularly Vulnerable Tribal Groups (PVTGs), this improvement has not translated into equitable maternal health outcomes. Despite a high proportion of institutional deliveries (76.5 per cent), maternal mortality and morbidity among tribal women remain significantly higher than among non-tribal populations, highlighting a critical gap between service coverage and effective care.

Geographical remoteness continues to be a primary structural barrier to safe motherhood. Tribal settlements are often located in hilly, forested, and poorly connected regions where road infrastructure is inadequate and transport services are unreliable. Seasonal disruptions during the monsoon further exacerbate isolation by causing road blockages and communication breakdowns. While Primary Health Centres (PHCs) and Community Health Centres (CHCs) may exist within measurable distances, functional accessibility remains limited due to delayed ambulance services, lack of emergency transport, and weak mobile network connectivity. Qualitative evidence from the field—including instances of home delivery, stretcher transport, and delayed referrals resulting in neonatal loss—demonstrates how critical delays during labour emergencies directly contribute to adverse maternal and neonatal outcomes.

Socioeconomic deprivation compounds these geographical constraints. Tribal households largely depend on subsistence livelihoods, daily wage labour, and forest-based activities, resulting in chronic poverty and financial insecurity. Although maternity benefit schemes provide post-delivery incentives, the immediate out-of-pocket expenses for transport, food, and accompanying caregivers discourage timely institutional delivery. In such contexts, home delivery is often perceived as a cost-effective and practical alternative, reflecting constrained choices rather than deliberate rejection of modern healthcare. (Thapa, S., and Nayak, P. M.; 2023).

Low literacy levels and limited health awareness significantly influence maternal health-seeking behaviour. High rates of illiteracy among tribal women restrict understanding of pregnancy-related risks, danger signs, and the benefits of skilled birth attendance. Inadequate health communication and limited awareness of government schemes further reduce effective utilisation of maternal health services. As a result, women rely heavily on family advice and intergenerational knowledge, while misconceptions about modern medicine and fear of medical procedures delay or prevent timely care-seeking.

Cultural beliefs and traditional practices remain powerful determinants of childbirth behaviour. Childbirth is commonly perceived as a natural and spiritual process rather than a medical event, and traditional rituals associated with delivery, placental disposal, and postpartum care are deeply valued. Institutional settings are often viewed as

culturally incompatible spaces that restrict these practices, reinforcing the preference for home deliveries assisted by traditional birth attendants or elderly women. Such cultural continuity contributes to the persistence of home deliveries (23.5 per cent) despite widespread policy outreach.

Health system limitations and trust deficits further undermine institutional delivery uptake. Inadequate infrastructure, shortages of skilled personnel, lack of emergency obstetric care, poor sanitation, and overcrowding reduce confidence in public health facilities. Negative experiences, including perceived disrespect, lack of empathy, language barriers, and fear of unnecessary surgical interventions, contribute to mistrust. Consequently, hospitals are often viewed as intimidating and emotionally unsupportive environments, discouraging women from seeking facility-based care.(Sagarika, S and Das, S.; 2023)

Gender inequality and household power dynamics also play a critical role in shaping maternal health decisions. Women often have limited autonomy over reproductive choices, with decisions regarding the place of delivery primarily controlled by husbands, mothers-in-law, or elder family members. Even when women express a preference for institutional delivery, patriarchal norms and household hierarchies frequently override their choices, leading to delays or non-utilisation of skilled care.

Overall, the findings indicate that increasing institutional delivery rates alone is insufficient to address maternal health inequities among tribal women. Effective reduction of maternal mortality and morbidity requires a shift from a uniform policy approach to context-sensitive interventions that address geographical isolation, economic vulnerability, cultural practices, health system quality, and gender inequality simultaneously. Strengthening transport and communication infrastructure, improving quality and respectful maternity care, enhancing targeted health education, and empowering women in decision-making are essential to achieving equitable maternal health outcomes.

11. CONCLUSION

The study clearly establishes that maternal health outcomes among tribal women are shaped by a convergence of structural, socioeconomic, cultural, and institutional constraints rather than by individual choice alone. Geographical remoteness, characterised by difficult terrain, poor road connectivity, and seasonal isolation, continues to restrict timely access to maternal health facilities despite their physical presence. Delays in transport, ambulance services, and communication systems significantly heighten risks during labour and childbirth emergencies, often resulting in adverse maternal and neonatal outcomes.

Economic vulnerability further exacerbates these access barriers. Chronic poverty, subsistence-based livelihoods, and the burden of immediate out-of-pocket expenses discourage institutional delivery, even in the presence of government incentive schemes. For many households, home delivery remains a financially pragmatic option, reflecting constrained decision-making under conditions of economic insecurity.

Limited education and low health awareness substantially reduce women's understanding of pregnancy-related risks, available services, and the benefits of skilled birth attendance. Inadequate dissemination of health information and persistent misconceptions about modern medical practices delay care-seeking and reinforce dependence on traditional knowledge systems. Cultural beliefs and rituals surrounding childbirth, deeply embedded within community life, further discourage institutional deliveries when health facilities are perceived as incompatible with traditional practices and values.

The effectiveness of institutional care is additionally undermined by weaknesses within the health system itself. Inadequate infrastructure, shortages of skilled personnel, limited emergency obstetric services, and negative patient experiences contribute to mistrust and dissatisfaction with public health facilities. These factors collectively diminish the perceived safety and dignity of institutional childbirth.

Gender inequality remains a critical underlying determinant, as women often lack autonomy in decisions related to maternal healthcare. Dominant household power structures frequently override women's preferences, delaying or preventing timely access to skilled care.

In conclusion, while policy initiatives have successfully increased institutional delivery rates, this alone has not been sufficient to ensure equitable maternal health outcomes. Addressing maternal mortality and morbidity among tribal women requires a holistic and context-sensitive approach that goes beyond service utilisation targets. Strengthening infrastructure and emergency transport, improving quality and respectful maternity care, enhancing health awareness,

empowering women's decision-making and integrating culturally acceptable practices within institutional settings are essential steps toward bridging existing disparities and achieving sustainable improvements in maternal health.

CONFLICT OF INTERESTS

None.

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