



A STUDY ON THE SOCIAL DETERMINANTS OF HEALTH AMONG ASSAM'S TEA TRIBES: THE INTERPLAY OF INCOME, EDUCATION, AND LIVING CONDITIONS ON HEALTH DISPARITIES

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Abstract

This paper examines the social determinants of health among Assam's tea tribes, specifically focusing on the interplay of income, education, and living conditions and their contribution to health disparities. Assam's tea tribes, a historically marginalized group, experience significant socioeconomic disadvantages that negatively impact their health outcomes.

Employing a mixed-methods approach, primary data was collected through a questionnaire from a sample of 50 individuals residing in various tea estates across Golaghat, East Block, Assam. This data collection assessed living conditions, healthcare access, literacy levels, and income disparities within the community. Additionally, secondary sources were analysed to provide a historical and contemporary context for the challenges faced by these communities.

The findings reveal a strong correlation between income inequality, limited educational opportunities, inadequate living conditions, and adverse health outcomes among the tea tribes. Low literacy rates, poor housing, and limited access to healthcare facilities emerge as key contributors to the observed health disparities.

This paper concludes by advocating for addressing these social determinants through inclusive policies and targeted interventions, such as improving education and healthcare infrastructure. These measures are essential for enhancing the health and overall well-being of Assam's tea tribes.

Keywords: *Tea Tribes, Social Determinants of Health, Health Disparities, Socioeconomic Factor*

I INTRODUCTION

Background

Assam, one of India's northeastern states, is the world's largest tea-growing region, contributing significantly to the global tea market. However, this economic success contrasts sharply with the conditions faced by the laborers who fuel the industry. The "tea tribes," a group of marginalized communities historically brought to Assam by the British as indentured laborers, remain trapped in a cycle of poverty and deprivation. Despite their crucial role in sustaining Assam's economy, these communities continue to face economic, social, and health-related disadvantages (Bhuyan, 2016; Mahanta, 2019). According to a report by the Planning Commission of India, nearly 80% of tea tribe households live below the poverty line, illustrating the deep socioeconomic inequalities they endure.

The health status of Assam's tea tribes is a matter of growing concern. Multiple studies have shown that these communities face higher rates of malnutrition, maternal mortality, and communicable diseases compared to the general population. For instance, Saikia et al. (2020) found that maternal mortality rates among tea tribe women are nearly double the state average, due largely to insufficient access to healthcare services. A report by the National Family Health Survey (NFHS-5) indicates that malnutrition among children in tea tribe communities is as high as 41%, compared to the state average of 32%. Furthermore, the prevalence of anemia in women and children is significantly higher in tea tribes, with nearly 70% of women aged 15-49 and 65% of children aged 6-59 months affected, according to NFHS data.

Living conditions in the tea estates further exacerbate these health issues. Overcrowded, unsanitary environments, coupled with limited access to clean drinking water, create ideal conditions for the spread of communicable diseases like tuberculosis and malaria. A survey by the Assam Human Development Report (2018) noted that less than 30% of tea tribe households had access to piped drinking water, contributing to the frequent outbreaks of waterborne diseases such as diarrhea and cholera. Similarly, only 25% of tea tribe households have access to proper sanitation facilities, compared to 65% of households in other parts of Assam, further widening the health disparity.

Despite government initiatives aimed at improving their living and health conditions, such as the Ayushman Bharat health insurance scheme and the Swachh Bharat Abhiyan sanitation campaign, the tea tribes remain disproportionately underserved. A lack of awareness and limited access to information about these schemes has hindered their effectiveness. For example, a 2019 study by the Center for Advocacy and Research found that fewer than 40% of eligible families in tea tribe communities had enrolled in the Ayushman Bharat program, citing illiteracy and poor outreach as significant barriers. This disconnect between policy and implementation has left many of the tea tribes unable to benefit from essential healthcare and welfare services.

The social determinants of health framework provide a valuable lens through which to examine these persistent disparities. Social determinants, such as income, education, housing, and access to healthcare, are key non-medical factors that shape health outcomes (World Health Organization, 2020). For the tea tribes, the intersection of poverty, poor living conditions, and limited access to education creates a vicious cycle that perpetuates poor health outcomes. A study by the Indian Council of Medical Research (ICMR) highlights that tea tribes, with their low literacy rates and deep-rooted cultural practices, often rely on traditional healers, which further delays access to modern medical care, worsening health conditions. Addressing these factors requires a holistic approach that not only tackles material poverty but also empowers these communities socially and culturally.

Objectives of the Paper

This paper seeks to address the following key objectives:

1. To examine the socioeconomic conditions of Assam's tea tribes
2. To identify the key health disparities
3. To explore the interplay between social determinants and health outcomes
4. To suggest policy interventions

Relevance of the Study

This study is significant not only in understanding the specific challenges faced by Assam's tea tribes but also in contributing to the broader discussion of health inequalities among marginalized communities. By adopting a sociological approach, the paper seeks to uncover the systemic barriers that keep these communities in a cycle of poverty and poor health. It also aligns with national and global goals of reducing health disparities and achieving universal health coverage as outlined in the United Nations Sustainable Development Goals (SDGs).

Furthermore, addressing the social determinants of health is crucial for achieving equity in health outcomes. Studies show that social inequalities tend to widen health disparities, especially in regions like Assam, where tea tribes remain largely disconnected from the broader development agenda Boruah & Borah, 2021. By examining these determinants, this paper aims to provide actionable insights for policymakers, NGOs, and researchers who are working towards uplifting marginalized communities.

II LITERATURE REVIEW

Introduction to Social Determinants of Health

The concept of social determinants of health (SDH) has gained increasing attention in academic and policy discourse over the past few decades. According to the World Health Organization WHO, 2020, SDH are the conditions in which people are born, grow, live, work, and age, and these factors significantly influence health outcomes. Researchers have consistently found that factors such as income, education, employment, social support, and living conditions play a central role in determining health status, often more so than biological or genetic factors Marmot & Wilkinson, 2005.

This framework has been widely used to understand health inequalities, particularly among marginalized and vulnerable populations. Studies show that poor socioeconomic conditions are strongly correlated with adverse health outcomes such as higher rates of chronic diseases, shorter life expectancy, and increased susceptibility to infectious diseases (Braveman et al., 2011). While global research has extensively covered these topics, the specific situation of Assam's tea tribes remains underexplored, which this paper aims to address.

Socioeconomic Status and Health

Income levels have long been recognized as a crucial determinant of health. (Wilkinson and Pickett 2010) argue that income inequality within societies leads to heightened health disparities, with those in lower-income brackets experiencing worse health outcomes. In Assam's tea estates, wage disparity has been a persistent issue. Tea tribe workers, employed mainly as plantation laborers, earn significantly lower wages than the state's average income level Sharma, 2016. This wage gap is compounded by seasonal employment patterns, making financial instability a frequent occurrence for these workers. According to (Bora and Baruah 2019), the average income of tea tribe workers is so low that they struggle to meet basic nutritional needs, let alone afford adequate healthcare.

Health-related outcomes are closely tied to economic precarity in marginalized communities. A study conducted by (Das and Sharma 2020) highlights that lower-income groups in Assam's tea tribes face a higher prevalence of malnutrition, anemia, and infectious diseases. These findings align with global studies indicating that poverty correlates strongly with limited access to healthcare, increased exposure to environmental hazards, and higher rates of stress-related illnesses (Farmer, 2005.)

Despite these connections, there is a gap in research that systematically examines the cumulative effects of income inequality on the tea tribe population's health in comparison to other marginalized groups in India. Most studies tend to focus on either income or health disparities in isolation, without exploring how economic and health inequalities reinforce one another over time.

Education as a Social Determinant of Health

Education is another pivotal social determinant of health, closely linked to health literacy, employment opportunities, and social mobility (Cutler & Lleras-Muney, 2010). Studies suggest that higher educational attainment leads to better health outcomes due to improved access to information, healthier lifestyle choices, and higher income-earning potential (Ross & Wu, 1995). However, Assam's tea tribes have some of the lowest educational attainment rates in the state. According to the 2011 Census of India, the literacy rate among tea tribes is approximately 48%, significantly lower than the state's average of 72% (Goswami & Borah, 2019).

Research by Mahanta 2017 identifies several barriers to education in the tea tribe community, including inadequate school infrastructure, high dropout rates, and a lack of trained teachers. Early involvement in labor due to financial constraints also significantly limits children's access to education, particularly for girls (Nath, 2019). The relationship between low education levels and poor health outcomes has been confirmed by various studies, which indicate that lower levels of educational attainment correspond to higher risks of disease and mortality, especially in vulnerable populations (Hahn & Truman, 2015).

The literature reveals a strong link between education and health outcomes, but there is a significant gap in understanding how educational inequalities manifest specifically within the tea tribe population. Most studies on education in Assam focus on the general population or other marginalized communities, with insufficient attention paid to the tea tribes' unique challenges. Further research is needed to explore how improving education could serve as an intervention to improve health outcomes for this group.

Living Conditions and Health

Housing and living conditions are also critical components of the social determinants of health framework. Poor housing conditions—such as overcrowding, lack of access to clean water, and inadequate sanitation—are associated with a higher prevalence of communicable diseases and mental health issues (Krieger & Higgins, 2002). The living conditions of Assam's tea tribes are often described as substandard, with many families residing in small, poorly constructed houses lacking basic amenities like clean drinking water and toilets (Saikia et al., 2020). The risk of exposure to vector-borne diseases such as malaria and dengue is particularly high in these environments.

A study by (Roy et al. 2018) found that 70% of the tea tribe households in Assam lacked access to clean drinking water, and 55% did not have proper sanitation facilities. These conditions contribute to high rates of water-borne diseases such as diarrhea, dysentery, and typhoid. The high prevalence of respiratory diseases in tea estates has also been attributed to overcrowded living conditions and poor air quality, with coal and firewood used for cooking, leading to indoor air pollution (Baruah, 2019).

Although some studies highlight the poor living conditions of tea tribes, there remains a gap in the literature regarding how these conditions interact with other social determinants like income and education to compound health risks. Research is often compartmentalized, focusing either on health outcomes or socioeconomic conditions in isolation, with little attention to the interconnectedness of these factors.

Health Inequalities Among Marginalized Communities

Marginalized communities worldwide face disproportionate health challenges due to their social positioning (Farmer, 2005). Assam's tea tribes, much like other indigenous or labor communities, experience these challenges in unique ways due to their historical and socio-economic background. Similar to the Dalits in India or the Roma in Europe, the tea tribes are subjected to systemic exclusion, which translates into poorer health outcomes (Sen & Dreze, 2013). However, research comparing these communities remains sparse.

(Chowdhury and Mishra 2018) note that marginalized groups often experience a double burden of disease: communicable diseases due to poor living conditions and a rising prevalence of non-communicable diseases, such as diabetes and hypertension, due to changing lifestyles and inadequate healthcare access. The literature on Assam's tea tribes aligns with this global pattern but lacks detailed, longitudinal studies that could track the changes in disease prevalence and their correlation with socioeconomic factors over time.

III METHODOLOGY

Research Approach

This study adopts a mixed-methods approach, combining both qualitative and quantitative methods to comprehensively explore the social determinants of health among Assam's tea tribes. The quantitative component focuses on measuring key variables such as income levels, education, living conditions, and health outcomes, while the qualitative component captures subjective experiences related to access to healthcare, quality of life, and perceived barriers to social mobility. The rationale for using a mixed-methods approach lies in its ability to provide a deeper understanding of the complex interplay between social factors and health disparities in marginalized communities (Creswell & Plano Clark, 2011).

By collecting both types of data, the study aims to integrate objective measurements with personal narratives to highlight the lived experiences of tea tribe members. This approach also allows for triangulation, where the use of multiple data sources enhances the validity and reliability of the findings (Denzin, 1978).

Population

The population for this study consists of the tea tribe communities of Assam, specifically those residing in various tea estates across the state. These communities, historically marginalized and economically disadvantaged, are primarily engaged as laborers in the tea industry. According to estimates, Assam's tea tribes make up about 20% of the state's population, with around 6.5 million individuals belonging to this group (Bhuyan, 2016). The majority live in rural areas, often within the confines of tea estates where their living conditions are directly linked to the plantation economy. Despite their significant contribution to the tea industry, the tea tribes are characterized by lower-than-average literacy rates, high poverty levels, and poor access to essential services such as healthcare and education.

Sample

For this study, a sample of 50 individuals was drawn from three specific tea estates: Dakhinhengra Tea Estate, Borjan Tea Estate, and Athabari Tea Estate, all located in the East Block of Golaghat district, Assam. These estates were selected to represent a cross-section of the tea tribe population, reflecting diverse age groups, genders, and family structures within the community. Convenience sampling was employed due to the logistical challenges of accessing the tea estates and the difficulty of formal random sampling in this context. This method, while not random, was deemed appropriate given the constraints and allows for insights into the health and socio-economic conditions prevalent within these specific communities.

The sample includes a balanced mix of men and women, as well as individuals across various age groups, to ensure the findings reflect the experiences and health outcomes of different demographics within the tea tribe population. By focusing on these 50 individuals, the study aims to gather both quantitative and qualitative data on the health disparities faced by the tea tribes and how factors such as income, education, and living conditions shape their health outcomes.

Research Design

The study is cross-sectional in design, focusing on the tea tribes residing in three selected tea estates: *Dakhinhengra Tea Estate*, *Borjan Tea Estate*, and *Athabari Tea Estate*, all located within the East Block of Golaghat, Assam. This geographic focus provides a representative sample of the tea tribe population in the region, enabling the study to capture the specific health disparities experienced by workers in these estates.

The research is using convenience sampling, a non-probability sampling method that involves selecting participants based on their availability and willingness to participate in the study. This approach was chosen due to the logistical constraints of accessing the community and obtaining formal sampling frames. Though convenience sampling has limitations in terms of generalizability, it is well-suited for exploratory studies like this one, where access to a marginalized population is often limited (Etikan et al., 2016).

Data Collection Methods

The study collects data from both primary and secondary sources. The primary data is collected through a questionnaire survey and interview data is being used, while secondary data is drawn from relevant literature, government reports, and historical records concerning the health and socio-economic conditions of Assam's tea tribes.

- *Primary Data Collection*

The primary source of data for this study is a structured questionnaire administered to a sample of 50 participants across the three selected tea estates: *Dakhinhengra*, *Borjan*, and *Athabari*. The sample includes adult tea tribe workers, both male and female, between the ages of 18 and 60. Efforts is being made to include a balanced representation of gender and age groups to ensure diversity within the sample.

Questionnaire Design

The questionnaire consists of both closed-ended and open-ended questions, designed to gather information on the following key areas:

- **Demographic and Socioeconomic Information:** Age, gender, marital status, educational background, and income levels.
- **Living Conditions:** Housing type, access to clean drinking water, sanitation facilities, and household size.
- **Health Status:** Self-reported health conditions, frequency of illness, and access to healthcare services.
- **Healthcare Access:** Distance to the nearest healthcare facility, frequency of visits, and types of healthcare providers used e.g., traditional healers, government hospitals, private clinics.
- **Perceptions of Health:** Open-ended questions about participants' perceptions of the barriers they face in accessing healthcare and maintaining a healthy lifestyle.

The questionnaire was designed based on guidelines from the World Health Organization (WHO) on measuring social determinants of health WHO, 2008 and adapted to the specific socio-cultural context of Assam's tea tribes. Before finalizing the questionnaire, a pilot test was conducted with a small subset of respondents to ensure clarity and relevance. Feedback from the pilot is used to refine the questions and improve the questionnaire's overall effectiveness.

The questionnaire is administered face-to-face by trained field researchers. Given the literacy challenges within the tea tribe population, the questions were read aloud, and responses were recorded by the researchers. This method ensures that participants who may not be literate can still engage with the survey.

The interview takes place within the participants' homes or in a common area of the tea estate to ensure convenience and comfort.

Informed consent is obtained from each participant prior to the interview. Participants is assured that their responses remain confidential, and the data is being used solely for academic purposes. Additionally, ethical considerations such as voluntary participation and the right to withdraw from the study at any time is being emphasized.

- *Secondary Data Collection*

Secondary data is be obtained from several sources, including:

- ❖ **Government Reports and Census Data:** Information from the Indian Census of 2011 and subsequent government surveys has been used to contextualize the socioeconomic conditions of Assam's tea tribes.
- ❖ **Health Surveys:** Data from national and regional health surveys, such as the National Family Health Survey NFHS-5, provide a broader perspective on health indicators in Assam, particularly among marginalized communities.
- ❖ **Academic Research and Literature:** Published research articles, books, and policy papers concerning social determinants of health, tea tribe communities, and health disparities in Assam is reviewed and cited. These sources provide background information and support the analysis of primary data.

The combination of primary and secondary data enables a comprehensive analysis of the social determinants of health among Assam's tea tribes, allowing for both localized and broader insights.

Sampling Process

As mentioned, the study uses a convenience sampling technique. This sampling method allows for ease of data collection in a setting where obtaining a formal list of tea tribe members would be challenging. Convenience sampling is often employed in research involving marginalized or hard-to-reach populations (Marshall, 1996.)

Participants was selected based on their availability and willingness to participate in the study. Field researchers approached potential respondents in their living areas within the tea estates, explain the study's purpose, and seek their consent to participate. Although this method limits the ability to generalize the findings to the entire population of Assam's tea tribes, it is appropriate for exploratory research that seeks to provide insights into specific social and health-related issues.

Efforts is being made to ensure that the sample is as representative as possible by including participants of varying ages, genders, and socioeconomic backgrounds from the three selected tea estates. However, it is acknowledged that the results are influenced by selection bias inherent in convenience sampling.

Data Analysis

After data collection, the quantitative data from the questionnaire is coded and entered into a statistical software program e.g., MS EXCEL for descriptive analysis. It summarizes the socioeconomic conditions and health status of the participants. Cross-tabulations will be used to examine relationships between key variables, such as income, education, and health outcomes.

The qualitative data from the open-ended questions is analyzed thematically. Key themes are being identified regarding participants' perceptions of healthcare access, barriers to better health, and the social determinants affecting their well-being. This thematic analysis provides insights into the subjective experiences of the tea tribe workers and complement the quantitative findings.

IV ANALYSIS AND RESULTS

This chapter presents the findings from the survey conducted among 50 individuals residing in various tea estates across Golaghat, East Block, Assam. The analysis focuses on exploring the interplay of income, education, and living conditions as social determinants of health, and their contribution to health disparities within this community.

● *Primary Data Analysis*

Demographic Profile of the Respondents

- ❖ **Age and Gender:** The majority of respondents 78% fall within the 31-45 age group, followed by 12% in the 46 and above category. The sample is fairly balanced in terms of gender, with 52% female and 48% male participants.
- ❖ **Marital Status and Education:** Most respondents are married 96%, reflecting the social structure of the community. The predominant education level is secondary 6th-10th grade at 82%, while 8% have no formal education, indicating a need for improved educational opportunities.

Socio-economic Conditions and Health

- ❖ **Income and Job Security:** The primary source of income for most respondents is tea plantation work, with a majority 78% earning between ₹5000-₹10000 per month. While 82% feel their jobs are secure, a significant minority 18% do not, suggesting potential income instability. The respondents have 100% negative responses towards other sources of income, relying they were primarily demands on one and only mode of earning, resulting in 96% people not satisfied with their current living conditions.
- ❖ **Living Conditions and Access to Basic Amenities:** The living conditions are predominantly characterized by 'Kuccha' houses 94%, and while most have access to a private toilet 96%, access to clean drinking water is 'Sometimes' for 92%. The respondents used mostly LPG provided by government yet faces difficulty in repurchasing., along with access to electricity. Other important parameters of analysis are depicted visually below
- ❖ **Education and Health Awareness:** While 82% have completed secondary education, only 40% strongly agree that education influences their health choices and access to healthcare, suggesting a potential gap in health literacy despite educational attainment.
- ❖ **Healthcare Access and Utilization:** Although 62% live within 5 km of a healthcare facility, 54% rarely visit a healthcare professional when sick, indicating potential barriers to healthcare utilization beyond physical proximity

Health Status and Chronic Conditions

- ❖ **Self-Reported Health:** The majority 92% report their health as 'Fair,' indicating a less-than-optimal health status.
- ❖ **Healthcare Expenditure and Insurance:** A significant portion 78% spent less than ₹1000 on healthcare in the past year, and none reported having health insurance, highlighting financial constraints in accessing healthcare.

Additional Factors Influencing Health

- ❖ **Substance Use:** A concerning 94% of respondents reported that they or their family members use tobacco, alcohol, or other substances regularly, indicating a high prevalence of substance use within the community.
- ❖ **Mental Health:** The majority 92% reported experiencing stress, anxiety, or other mental health issues occasionally, highlighting the need for mental health support services.

Community Support and Health Programs

- ❖ **Social Support:** Most respondents 92% receive support from their social network sometimes, while only 4% receive it always, suggesting room for strengthening community support systems.
- ❖ **Health Programs:** All respondents 100% indicated the absence of health-related community programs or initiatives in their area, emphasizing a critical gap in healthcare infrastructure and outreach.

Qualitative Analysis

The qualitative insights gleaned from the study provide a deeper understanding of the complexities underlying these health disparities. The negative attitude towards educating girls perpetuates gender inequality and limits opportunities for women to improve their health literacy and access healthcare resources. The lack of knowledge and awareness about proper sanitation practices contributes to the spread of communicable diseases and undermines overall well-being. The lack of awareness of government funds/benefits/schemes further marginalizes the community, hindering their ability to access essential resources and services. The reliance on superstitious remedies and beliefs instead of seeking scientific medical care can delay appropriate treatment and exacerbate health conditions. The poor knowledge regarding family planning can lead to unintended pregnancies and associated health risks for both mothers and children. The lack of interest in higher studies or formal education perpetuates the cycle of poverty and limits opportunities for upward social mobility, which in turn impacts health outcomes. The difficulty in learning and adopting new skills/vocational training further restricts livelihood options and economic empowerment, contributing to the overall vulnerability of the community.

- **Secondary Data Analysis**

Incorporating secondary data provides a broader context that aligns with the findings of the primary research conducted among Assam's tea tribes. Data from the National Family Health Survey (NFHS) highlights persistent health disparities in rural Assam, particularly among marginalized communities. According to the NFHS-5 (2019-2021), Assam ranks below the national average in several health indicators, including maternal health, infant mortality, and access to healthcare facilities. This supports the primary finding that poor health outcomes in the tea tribes are largely driven by limited access to healthcare services, exacerbated by gender inequality and low health literacy.

Further analysis of reports from the District Health Information System (DHIS) reveals that communicable diseases, such as malaria and tuberculosis, are more prevalent in regions with poor sanitation and inadequate housing, which aligns with the qualitative data showing a lack of awareness about proper sanitation practices and the predominance of 'Kuccha' houses. These secondary sources reinforce the correlation between poor living conditions and the spread of illness, as observed in the primary data.

Government publications, such as the Assam Human Development Report, emphasize the role of income inequality and education in perpetuating health disparities, particularly in rural areas. This ties in with the primary findings, which highlight the low levels of educational attainment and the community's reluctance

to pursue higher education or vocational training, further limiting their upward mobility and access to better healthcare.

Additionally, secondary sources reveal a gap in awareness and utilization of government schemes, such as the Janani Suraksha Yojana (JSY) and Ayushman Bharat, designed to improve healthcare access for marginalized populations. The limited uptake of these schemes among the tea tribes, as indicated in the secondary data, supports the primary findings that a lack of awareness further marginalizes the community, restricting their ability to access essential resources.

V DISCUSSION

This chapter will critically evaluate the results obtained from the study, comparing them with existing literature, and exploring the implications of these findings for theory, practice, and policy concerning the social determinants of health among Assam's tea tribes.

Critical Evaluation of the Results

The study findings paint a portrait of a community grappling with significant health disparities. The predominance of low-income levels, limited educational attainment, and substandard living conditions among the tea tribes in Golaghat, East Block, Assam, aligns with the broader understanding of social determinants of health. The high prevalence of chronic illnesses, coupled with barriers to healthcare access and utilization, further underscores the vulnerability of this population.

The study's mixed-methods approach, combining quantitative data with these qualitative insights, provides a comprehensive understanding of the challenges faced by the tea tribe communities. However, the limitations of the study, including the relatively small sample size and the use of convenience sampling, warrant caution in generalizing the findings to the entire tea tribe population in Assam. Future research with larger, more representative samples is needed to confirm and expand upon these findings.

Comparison with Literature

The study's findings resonate with existing literature on the social determinants of health and health inequalities, particularly among marginalized communities. The qualitative insights highlight the cultural and social barriers that can impede access to healthcare and health information, even when physical proximity to healthcare facilities is not a major constraint. The reliance on traditional remedies and beliefs, the low prioritization of female education, and the lack of awareness of government schemes are all factors that have been observed in other marginalized communities in India and globally. The study's findings contribute to this body of knowledge by providing specific examples from the context of Assam's tea tribes, emphasizing the need for culturally sensitive and contextually relevant interventions.

Implications

The implications of these findings are multifaceted and extend to theory, practice, and policy.

- Theoretical Implications:

This study reinforces the theoretical frameworks that emphasize how social, economic, environmental, and cultural factors shape health outcomes. For example, Bronfenbrenner's ecological systems theory suggests that individual health is influenced by interactions across multiple levels, from the individual to the broader social context. Our findings align with this theory, showing how income disparities, limited education, and cultural practices directly affect the health of Assam's tea tribes. Understanding the specific cultural and social context is vital for developing interventions that will actually work for marginalized communities. A study by Jaiswal et al. (2020) on tribal health in India also highlights that community-specific factors, such as traditional beliefs and gender norms, must be considered when designing healthcare interventions to ensure their effectiveness.

- **Practical Implications:**

The findings highlight the urgent need for culturally tailored interventions that address both material poverty and the social and cultural barriers to health. For instance, culturally sensitive health education programs can help dismantle deeply ingrained gender biases, which restrict women's access to healthcare and education in the tea tribe community. A notable example of this approach is seen in Kerala's Kudumbashree program, which successfully empowered women through economic self-sufficiency and health awareness campaigns, leading to improved family health outcomes. Similar initiatives in Assam's tea tribes, emphasizing education and economic empowerment for women, could result in improved health literacy, better healthcare utilization, and a healthier community overall. Additionally, promoting modern healthcare and increasing awareness of government schemes like Ayushman Bharat can significantly increase healthcare utilization. The success of healthcare awareness drives in Bihar, which resulted in increased enrollment in health insurance schemes, illustrates the practical benefits of targeted, community-specific efforts.

- **Policy Implications:**

The study's findings have far-reaching policy implications, highlighting the need for comprehensive, holistic policies that address the root causes of health inequalities in Assam's tea tribes. Policies should focus on eradicating poverty, enhancing education, and overcoming cultural barriers. For instance, the successful implementation of "Mission Indradhanush" for improving immunization coverage among rural populations shows how targeted government initiatives can yield measurable health improvements. Applying similar focused strategies to tea tribes—such as community-based health programs or gender-responsive healthcare services—could significantly reduce preventable diseases and improve overall health outcomes. Furthermore, increased investment in culturally appropriate health promotion, mental health support, and disease prevention services, as seen in Tamil Nadu's rural health initiative, could transform healthcare delivery for Assam's marginalized tea tribes, ensuring better access to essential services and resources.

VI CONCLUSION

This study has cast a revealing light on the intricate relationship between social determinants and health disparities among Assam's tea tribes. The findings underscore the urgent need for a multi-faceted and culturally sensitive approach to address the deep-rooted issues that perpetuate health inequities within this population.

- **Socioeconomic Challenges:**

The tea tribes in Golaghat face significant socioeconomic challenges, including low income, limited education, and substandard living conditions. The majority rely on tea plantation work, with most earning between ₹5000-₹10000 per month. Educational attainment is primarily at the secondary level, with a concerning percentage having no formal education. Housing conditions are predominantly characterized by 'Kuccha' mud/thatched houses, and access to clean water and sanitation remains a challenge.

- **Health Disparities:**

The community experiences significant health disparities, with a majority reporting 'Fair' health status and a high prevalence of chronic illnesses within families. Barriers to healthcare access and utilization persist despite the relative proximity of healthcare facilities for many. Financial constraints, including low income and lack of health insurance, further exacerbate these challenges.

- **Cultural and Social Barriers:**

Qualitative insights revealed deeply ingrained cultural and social norms that hinder health-seeking behaviour and perpetuate health inequalities. These include negative attitudes towards female education, lack of awareness about sanitation and government schemes, reliance on traditional remedies, and limited social support.

- **Interplay of Determinants:**

The study underscores the complex interplay of socioeconomic factors, cultural beliefs, and social norms in shaping the health outcomes of the tea tribes. Low income, limited education, and poor living conditions interact with cultural barriers and social norms to create a cycle of disadvantage that perpetuates health disparities.

Significance of the Findings

This study transcends mere statistics; it provides a voice to the marginalized tea tribe community in Assam, highlighting their lived experiences and the systemic challenges they face in attaining optimal health. By shedding light on the complex interplay of socioeconomic factors, cultural beliefs, and social norms, this research contributes significantly to the broader understanding of health inequalities in India and beyond.

The findings challenge the notion that health is solely an individual responsibility, emphasizing the critical role of social, economic, and environmental factors in shaping health outcomes. The study's focus on a specific marginalized community underscores the need for targeted interventions that address the unique challenges faced by such populations. The insights generated from this research can inform policy-makers, NGOs, and healthcare providers in developing culturally sensitive and contextually relevant strategies to improve the health and well-being of the tea tribes and other marginalized communities.

Furthermore, this study aligns with national and global goals of reducing health disparities and achieving universal health coverage, as outlined in the United Nations Sustainable Development Goals SDGs. By identifying the key social determinants of health and their impact on the tea tribes, this research provides actionable insights for promoting health equity and social justice. It serves as a reminder that addressing health inequalities requires a multi-faceted approach that tackles not only the provision of healthcare services but also the underlying social, economic, and cultural factors that perpetuate disparities.

In essence, this study's significance lies not only in its empirical findings but also in its potential to catalyse positive change. By amplifying the voices of the marginalized and highlighting the systemic barriers they face, this research can contribute to a more equitable and just society where all individuals have the opportunity to achieve optimal health and well-being.

Limitations

The study acknowledges certain limitations that may influence the generalizability of the findings. The relatively small sample size and the use of convenience sampling may not fully capture the diversity and complexity of the tea tribe population in Assam. Further research with larger, more representative samples is warranted to confirm and expand upon these findings. Additionally, the study focused on a specific geographical area, and the findings may not be directly applicable to other tea-growing regions in Assam or other parts of India.

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