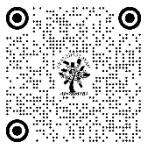


CHALLENGES TO EMPOWERMENT: SOCIO-ECONOMIC AND NUTRITIONAL DISPARITIES AMONG TEA ESTATES' REPRODUCTIVE WOMEN WORKERS OF CACHAR DISTRICT, ASSAM

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ABSTRACT

Women's empowerment highlights the conditions of women regarding their health, social and economic, and decision-making power. Barak Valley is a Bengali-dominated region known as the southernmost administrative division of Assam. The current research focused on women's empowerment among reproductive women workers in tea estates based on their socio-economic conditions and health status (nutritional status). Tea plantation workers belonging to marginalised and migratory groups took part in tea production and made tea famous as a drinking beverage. The British planters brought pride to the people of Barak Valley by introducing tea production in 1855. The study was done on the three tea estates of the Cachar district with 592 reproductive women workers in the tea estates (15 to 49 years) using the multistage sampling method. The researcher used in-depth interviews and a structured questionnaire to collect data, which was then analysed using a socioeconomic status scale and standard statistical methods. The study illustrated that women confront several hurdles, including discrimination, limited educational opportunities, and gender-based violence. The workers' household members indicated that all responsibilities rested on women's shoulders. The majority of the women workers are underweight and suffer from non-communicable illnesses, respiratory issues, skin irritation, and gastrointestinal disorders. Thus, the impoverished socioeconomic conditions and nutritional disparities among women workers in the tea estates have influenced women's empowerment.

Keywords: Women Empowerment, Cachar Tea Estates, Reproductive Women Workers, Socio-Economic Disparities

1. INTRODUCTION

Women's empowerment is a foremost focus of interest of feminist anthropologists. From an anthropological perspective, understanding women's empowerment requires a holistic analysis of the social, cultural, and economic context that shapes women's lives. Anthropologists experience women's lives in different societies by focusing on cultural relativism and ethnography methods. Examining women's socio-economic conditions and health status reveals the underlying cultural norms, values, and practices that influence women's empowerment. Health is a fundamental aspect of well-being, as anthropology is a subject of human science. It focuses on women's health, highlights the cultural beliefs and practices that impact health behaviours, and discusses the disparities and health inequalities, minimal health care services, nutritional status and reproductive rights of women.

Cultural practices and social norms play an essential role in shaping the experiences of women tea plantation workers. Empowerment initiatives must be included in the communities that confront and revolutionise discriminatory practices and bolster gender equality in the cultural context. (Ortner, 1974) Educational qualification is the primary factor that allows people to uplift themselves and strengthen their societal weaknesses. One research reveals that women are behind in education because access to education is a critical factor that enables women to participate in decision-making in communities and workplaces. Educational programs allow women to enhance their capability regarding decision-making or family issues, and vocational training is also provided to develop practical skills and expertise in different fields and increase their confidence level. (Rosaldo & Lamphere, 1974)

Women's empowerment indicates the nutritional status of the reproductive health of women and children under five years. Empowerment plays an invaluable role in society's progress of women worldwide and gives them the power to make decisions regarding their physical health. India has the highest population in the world and the fifth most significant economic contributor. According to the Human Development Report (HDR) 2023-2024, India's rank in the Gender Inequality Index is 108 out of 166 nations, which evaluates the countries based on reproductive health, empowerment, and labour market participation. (Conceição, 2024) However, women's empowerment and the promotion of children's health were set up in the Millennium Development Goals (MDGs) in 2000, which are trying to achieve by 2015 under the United Nations Development Programme. However, these two goals have come to nought/missed the mark. (United Nations, 2000)

1.1. TEA PROFILE IN INDIA

India is the world's most favourable and second-highest tea-producing country, producing 1365.23 million kg of tea. In India's eyes, the tea plantation sector is the most essential part of the global economy. The tea industry of India covers four leading states: Assam, West Bengal, Kerala, and Tamil Nadu, with more than 2.31 lakh tea growers covering 619.77 thousand hectares of land. During colonisation, green tea took first place in beverage in world production, but when China came and produced a non-alcoholic beverage that is tea production from the tea plant popularly known as *Camellia sinensis*, it became more popular and everyone's choice of drinking beverage. The British government anticipated the popularity of tea production and took steps towards tea plantations, giving profits or yields after a long wait. They started their journey with tea plantations in several areas of the world and chose India for the best tea production based on the suitable environment and the soil required for tea planting.

1.2. TEA PROFILE OF ASSAM AND BARAK VALLEY

Blue hills and two river valleys cover Assam, Barak and Brahmaputra and among the two valleys, the Brahmaputra is known by the Sanskrit term 'Lauhatiya', meaning Red River, and it is the largest river in terms of discharge and sediment in the world. Assam is the gateway to the North-Eastern States. The tea industry in Assam has a long back history; during colonisation in the year 1823, it is believed that the Bodo people brought and started a tea plantation in Assam, and gradually, it spread throughout the whole of India. According to Guha, the first Tea Company was the Assam Company, founded in 1839 and solely operated till the 1850s. By 1853, nine different tea gardens were established in Upper Assam, and tea gardens spread to Cachar and Sylhet in Bangladesh. By 1859, the Jorhat Tea Company, several private enterprises, and many tea companies had been formed, and they started their journey in tea production. They gave their full cooperation to promote the Indian economy to the world. (Guha, 1988) (Sharma & Sharma, 2005)

Barak Valley is Assam's southernmost administrative division. It is divided into three districts with mostly Bengali populations: Cachar, Hailakandi, and Karimganj. The British initially consumed tea; nowadays, it is a beverage millions of individuals enjoy throughout India and worldwide. In 1855, a British government officer discovered the first tea plant in the tillahs of Cachar and Hailakandi. Due to the richness of the land, the Tea Culture Committee and the British government officials decided to begin tea production in this area. They proposed introducing enslaved labourers from other Indian states with a low wage rate because they knew if they raised their voices, then their lives would be in danger. The workers faced many challenges for the sake of mere subsistence still now. Women are the first choice for tea production because they are experts in all fields, such as tea plucking, household work, and family care, and they can even withstand various tortures. In recent years, the Indian government has prioritised women's empowerment, yet

women on tea plantations are behind the curve. Empowering women enables them to control their lives and make physical, mental, political, and economic decisions.

1.3. REVIEW OF LITERATURE

Laskar (2023) analysed the women's empowerment among the women working in the Renbeng and Kondoli Tea estates of Nagaon district and said that the production and cultivation of tea in Assam are increasing rapidly. However, women in tea estates are in a backward position. They have not received any attention in the development process. They face severe problems in terms of health, human security, sanitation, and water and electricity disruption. Child marriage and child labour practices are still prevalent among the tea estate. Political behaviour and participation are relatively less noticed in the tea estate. (Laskar, 2023)

In their research, Das and Roy (2019) revealed sustainable women empowerment in tea gardens. They highlighted the socioeconomic backwardness, different government schemes for the benefit of women workers, increasing unemployment, and different issues women workers face in the tea gardens. (Das & Roy, 2019)

Aktar et al. (2020) argued that women workers in tea plantations face working challenges and confront them in education, housing, water, and sanitation. In contrast, paid women workers control their income and make social and political decisions without male family members. They suggested that women's employment fails to ensure absolute empowerment, and other societal issues must be explored. (Aktar et al., 2020)

Ekka et al. (2024) analysed the importance of gender equality and youth interventions through social work in the tea gardens of the Cachar district. Social work interventions help the tea gardens' youth improve their education, healthcare and socio-economic life. They emphasise the need for women's empowerment, create awareness campaigns, and create opportunities and a more favourable environment where youth and women can raise their voices to enhance the well-being and socio-economic status of women workers and youth of tea gardens and contribute to sustainability. (Ekka et al., 2024)

Bhattacharjee (2022) explained the tea tribe's women's status, health, financial issues, employment in the tea gardens and the importance of education in women's empowerment. She revealed that women's empowerment is essential for societal progress, especially for women working in tea gardens and different industries and from marginalised, nomadic, or semi-nomadic groups. Women workers actively participate in various fields, including politics, despite their challenges, which shows progress in empowering women and raising awareness of their rights. (Bhattacharjee, 2022)

2. OBJECTIVES

2.1. GENERAL OBJECTIVE

To assess the relationship between women's empowerment, socio-economic conditions, and nutritional status of the tea plantation's reproductive women workers among the selected tea estates of the Cachar District, Assam.

2.2. SPECIFIC OBJECTIVES

- 1) To understand the socio-economic status of the tea plantation reproductive women workers (15 – 49 years old).
- 2) To determine the nutritional status through BMI and other prevalence of diseases among the tea plantation reproductive women workers.
- 3) To measure the empowerment level of tea plantation reproductive women workers.

3. METHODOLOGY

3.1. UNIVERSE OF THE STUDY

The current research was conducted in the Cachar district of Assam state of North-East India, with the total area under tea cultivation being 32312 hectares. Silchar is the district headquarters. As per the 2011 census, more than 15% of the district's total population is covered by the tea and ex-tea garden communities. This research is focused on the tea plantation reproductive women workers of the three different tea estates in the Cachar district, where the tea population

consists of Ghatwar, Rikiasan, Bhumij, Teli, Kharia, Tanti, Urang, Hazam, Mal, Naik, Mura, Tantubai, Santal, Ree, Kalindi, Dusad, Kurmi, Nunia and Bagti community. The three tea estates are under the three blocks of the Cachar district from different directions based on their availability and geographical area (Table 1).

3.2. SOURCES OF DATA COLLECTION

This study is rooted in both primary and secondary sources in terms of methodology. Most primary data were collected through direct contact with the tea plantation reproductive women workers from selected Tea Estates in the Cachar District, Assam. Secondary information was sourced from various publications, including magazines, newspapers, journals, books, theses, and government publications in India and Assam.

3.3. DATA COLLECTION PROCEDURE

The data covered significant aspects such as age, education, marital status, occupation, living conditions, food habits, and health status using questionnaires and interview schedules to conduct the investigation. An anthropometric measurement tool is used to analyse the height and weight to get data on the nutritional status of the tea plantation's reproductive women workers.

3.4. SAMPLING

Multistage sampling has been used to obtain a representative sample of 592 tea plantation reproductive women workers. The sampling process began using a purposive sampling method. The entire Assam state was divided into four cardinal directions and the South direction, where the three districts, Cachar, Hailakandi and Karimganj, were covered. Using a stratified sampling method in the second stage, the researcher selected the Cachar district from the three districts based on the population size and the number of tea estates. The third stage involves cluster sampling to select three blocks within the selected district. In the fourth stage, the researcher again uses cluster sampling to select one tea estate from each of the three blocks, resulting in the three tea estates. Finally, within each tea estate, simple random sampling is employed to select reproductive women until the desired sample size is reached.

Table 1: Distribution of the Reproductive Women Tea Plantation Workers from the Three Tea Estates under the three Division Blocks of Cachar District

Sl. No.	Name of Block	Name of the Tea Estates	No. of women workers
1.	Borkhola Dev. Block	Mainagarh Tea Estate	185 (31.3%)
	Palonghat Dev. Block	Rukni Tea Estate	205 (34.6%)
	Borjalenga Dev. Block	Iringmara Tea Estate	202 (34.1%)
Total =			592 (100%)

Source Primary Data

Table 1 shows the distribution of the reproductive women tea plantation workers with the selected three tea estates under the three Division Blocks of the Cachar district. Out of the 592 reproductive women tea plantation workers from the tea estates, the highest proportion of 205 (34.6%) participants were from the Rukni Tea Estates, followed by 185 (31.3%) and 202 (34.1%) from Mainagarh and Iringmara Tea Estates respectively.

3.5. DATA ANALYSIS

The researcher used the modified Kuppuswamy (2023) and Udai Pareek socio-economic status scale (2021), the World Health Organization's recommended nutritional status table and the coding used to develop the Women's Empowerment Index. The standard statistical tools have been used for data analysis.

4. RESULTS AND DISCUSSION

The status of women in the North Eastern region is markedly divergent from the rest of the regions, with specific social maladies, such as the purdah system, dowry, and violence, being less rampant in the state of Assam to a certain extent. The Assam Human Development Report (2003) identifies poverty, violence, and lack of participation and cognisance as the primary concerns for the state. The Act of Assam State Commission for Women was ratified in January 1994, which endeavours to attain equity and justice for socially, physically, and politically exploited women. This body furnishes a platform for actualising the anticipations of millions of women in the state and allows them to collaborate with men in the state's development scheme. (Das, 2019) Although the women working in the tea plantations are pivotal to the industry, they face numerous economic and social disparities that are often overlooked and marginalised. These women experience a range of issues in various aspects of their lives, including an identity crisis. Furthermore, their representation in the legislative assembly is reportedly low, and they lack land rights. Additionally, there is a growing demand for ST status for all the tribes. With a significant portion of the tea plantation community comprising women, the development of the community is heavily reliant on the empowerment and development of these women. (Laskar, 2023)

After interacting with the women workers, the researcher found the current socio-economic status, health problems and other numerous empowerment issues, which are discussed below:

4.1. SOCIO-ECONOMIC STATUS

The indication of the socio-economic status of the reproductive women workers of the three tea estates is portrayed in Table 2. After analysing the table, young adulthood (20-35 years) and middle adulthood (36-49 years) are comparatively more than adolescence (15-19 years) (51.05% > 33.95% > 15.01%). Regarding marital status, most of the respondents are married because, after the age of 18 years, whatever the education is, the girls are given in marriage in rural as well as in tea estates. Moreover, that is why out of the 592 workers, the level of education is shallow among the tea estates: 270 (45.61%) women respondents have primary education, 140 (23.65%) are illiterate, 97 (16.39%) and 59 (9.97%) respondents are from the middle (class 6 to 8) and high school (class 9 to 10) respectively and only 26 (4.39%) have above the high school to graduation. The occupation status of the respondents from the study area shows that 394 (66.55%) respondents daily or casually work in tea gardens. They are engaged in plucking, spraying, pruning, and sometimes fertilising tea plants because of expertise in all fields. The 109 (18.41%) women are unemployed and students, and 85 (14.36%) respondents have independent professions. Regarding the houses of the workers, it shows that 432 (72.97%) women workers have kutcha houses; they have even faced sanitation problems; there is no bathroom, and they make temporary latrines and bathrooms with bamboo slits and polythene. Only 30 to 40% of workers get sanitation through the Swachh Bharat Mission – Grameen PHASE I scheme. Regarding land, they do not have enough money or income to buy land for agriculture or other purposes. The findings show that approximately 80.24% of workers have not owned land since the British period. The family size of the workers indicates that there are more than five members in every family, i.e., a large family size has been found in 90.03% of the workers' families. After introducing the social community groups, mainly Self Help Groups (SHGs), which give some support to the women workers of the tea estates, but not to everyone. The current research reveals that only 15.71% of the reproductive women workers engaged with SHGs, and the rest of the workers, 499 (84.29%) out of 592 respondents, do not engage with any social community groups. The farm power among the workers shows. That 75.68% have domesticated animals, and the remaining 24.32% do not rear any animals.

Table 2: Distribution of the Reproductive Women Tea Plantation Workers based on their Socio-economic Status (N = 592)

Characteristics	Possible score range*	Categories	Respondents		Mean	SD*
			Number	Percentage		
Age	15 – 49 years	Adolescence (15 – 19 years)	89	15.03%	30.7	9.3
		Young Adulthood (20 – 35 years)	302	51.01%		
		Middle Adulthood	201	33.95%		

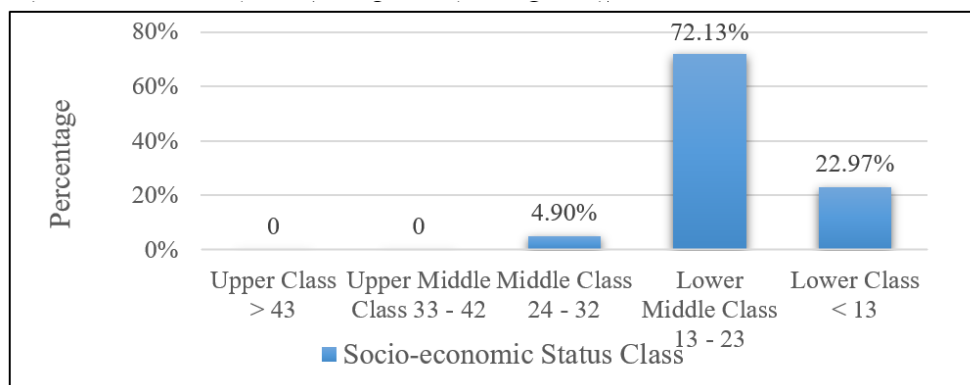
		(36 – 49 years)					
Marital Status	(1 – 4)	Unmarried	95	16.05%	1.9	0.5	
		Married	478	80.74%			
		Widow	14	2.36%			
		Separated	5	0.84%			
Level of Education	(0 – 6)	Illiterate	140	23.65%	2.8	1.7	
		Primary (1-5)	270	45.61%			
		Middle (6-8)	97	16.39%			
		High School (8-10)	59	9.97%			
		Graduate and above (>10)	26	4.39%			
Occupation	(0 – 6)	None (Student, Unemployed)	109	18.41%	1.3	1.2	
		Labourer (Plucking et al., etc.)	394	66.55%			
		Business	4	0.68%			
		Independent Profession	85	14.36%			
House	(0 – 5)	Kutcha house	432	72.97%	2.4	0.7	
		Mixed house	75	12.67%			
		Pucca house	85	14.36%			
Land	(0 – 5)	No land	475	80.24%	0.3	0.5	
		Less than 1 acre	113	19.09%			
		1 – 5 acre	4	0.68%			
Family Size (Number of Family Members)	(1 – 2)	Small (2 – 5)	59	9.97%	1.1	0.3	
		Large (> 5)	533	90.03%			
Social Participation	(0 – 4)	None	499	84.29%	0.01	0.08	
		Member of Social Organisation	93	15.71%			
		Public leader	0	0.00%			
Farm Power	(1 – 6)	No draft animals	144	24.32%	2.0	0.9	
		1-2 draft animals	389	65.71%			
		3-4 draft animals	46	7.77%			
		5-6 draft animals	13	2.20%			

(Source Primary Data)

*Total Participant = 592, *SD (Standard deviation)

*Possible score range = Based on Revised Udai Pareek Socio-economic Status Scale

After interpreting all the codes in the socio-economic categories, the revised Udai Pareek socioeconomic status scale indicated that the highest percentage of 72.13% of reproductive women tea plantation workers are involved in the lower middle-class category, followed by the lower class (22.97%) and middle class (4.90%) categories. (See Figure 1)



Source Revised Udai Pareek Socio-economic Status Scale (2021)

Figure 1 Distribution of socio-economic status (SES) class of Reproductive Women Tea Plantation Workers in selected Tea Estates of Cachar

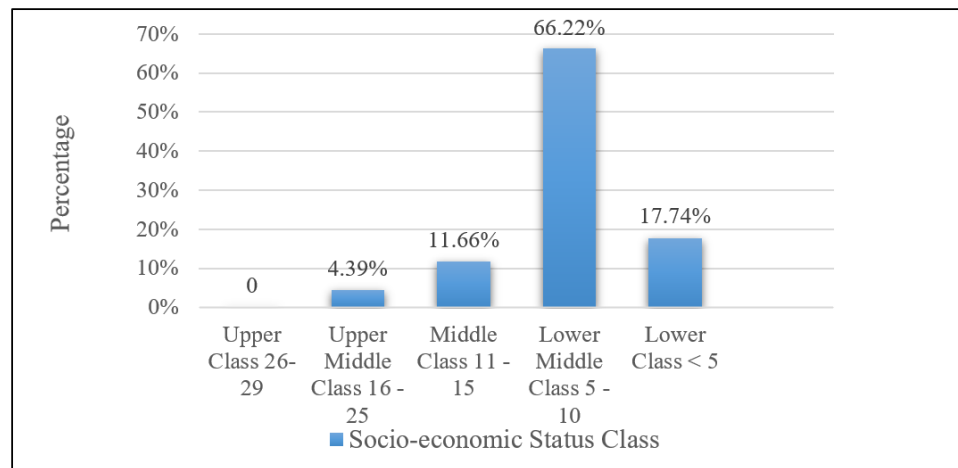
Kuppuswamy created the socio-economic status scale based on three index factors: the education level and occupation of the family head and monthly family income. Each parameter has been divided into subcategories, assigning points to each category. Based on the cumulative points, the SES status has been determined. Table 3 shows that most of the heads of the families of reproductive women tea plantation workers are illiterate, i.e., 293 (49.49%) and 210 (35.47%) have primary education. Moreover, 77 (13.01%), 10 (1.69%), and 2 (0.34%) workers have middle, high and intermediate or post-high school diplomas, respectively. When it is the occupation of the family head, out of the 592 respondents, the highest proportions (60.14%) are involved in skilled plantation works, followed by 137 (23.14%) unemployed, and 63 (10.64%) are semi-professional, i.e., they are involved in as a mason, carpentry, etc. because of the low wages and family burden. 4.56% (27) of them are found to be skilled workers and shop owners, and another 1.52% (9) are clerks, respectively.

Table 3 Distribution of the Families Head of the Reproductive Women Tea Plantation Workers based on their Socio-economic Status

Characteristics	Possible score range*	Categories	Respondents		Mean	SD*
			Number	Percentage		
Level of Education (Head of the Family)	(1 – 7)	Illiterate	293	49.49%	1.7	0.8
		Primary (1-5)	210	35.47%		
		Middle (6-8)	77	13.01%		
		High School (8-10)	10	1.69%		
		Intermediate or Post-high school diploma	2	0.34%		
Occupation (Head of the Family)	(1 – 10)	Unemployed	137	23.14%	4.5	2.1
		Skilled Plantation workers	356	60.14%		
		Skilled worker, Shop owner	27	4.56%		
		Clerk	9	1.52%		
		Semi Professional (Mason, Carpentry, etc.)	63	10.64%		
Monthly Income of the Family	(1 – 12)	≤ 7,315	186	31.42%	1.9	0.7
		7,316 - 21,913	315	53.21%		
		21,914 - 36,526	78	13.17%		
		≥ 36,527	13	2.19%		

(Source: Primary Data)

(*Total Participant = 592, *SD (Standard deviation) *Possible score range = Based on Revised Kuppuswamy (2023) Socio-economic Status Scale)



Source Revised Kuppuswamy Socio-economic Status Scale (2023)

Figure 2 Distribution of Socio-Economic Status (SES) Class of the Family's Head of the Reproductive Women Tea Plantation Workers in selected Tea Estates of Cachar

Figure 2 shows the socio-economic status class of the family's head of the reproductive women tea plantation workers according to the Kuppuswamy SES Scale. From the figure, it is found that 66.22% were found in the lower middle class, followed by the lower class (17.74%) category. 11.66% were observed in the middle class, while only 4.39% were found in the upper-middle-class category of the socio-economic status.

4.2. NUTRITIONAL STATUS OF THE REPRODUCTIVE WOMEN TEA PLANTATION WORKERS

The nutritional status has been classified based on the BMI classification given by the World Health Organisation (WHO) for reproductive women tea plantation workers in selected tea estates. The chi-square (χ^2) test gives the result that there is a significant difference has been found in the nutritional status among the reproductive women workers of the tea estates because the calculated value is 13.24 at the p-value of 0.04, which is greater than the tabular value of 12.59 at the 0.05 level of significance ($p < 0.05$). Hence, the table shows that the prevalence of being underweight is significantly higher than the overweight and normal. Out of 592 reproductive women tea plantation workers from the selected three tea estates of the Cachar district, a higher proportion (54.7%) of them are underweight, followed by overweight (13.2%) and obese (10.1%). It was observed that underweight is higher concerning all three tea estates: Mainagarh (55.1%), Rukni (52.2%), and Iringmara Tea Estate (56.9%). However, obesity has been found among the age group of 15 – 19 years of youth girls, and those who are not doing work as well go to higher education in all the tea estates. (See Table 4)

Table 4 Distribution of Nutritional Status Based on BMI Classification among Reproductive Women Tea Plantation Workers in Selected Tea Estates (N = 592)

BMI Classification	Mainagarh Tea Estate n (%)	Rukni Tea Estate n (%)	Iringmara Tea Estate n (%)	Total Respondents N (%)
Underweight	102 (55.1)	107 (52.2)	115 (56.9)	324 (54.7)
Overweight	18 (9.7)	28 (13.7)	32 (15.8)	78 (13.2)
Obese	20 (10.8)	15 (7.3)	25 (12.4)	60 (10.1)
Normal	45 (24.3)	55 (26.8)	30 (14.9)	130 (22.0)
Total	185 (100)	205 (100)	202 (100)	592 (100)

Source Primary data) ($\chi^2 = 13.24$, $df = 6$, $p = 0.04$)

Diseases are abnormal conditions broadly classified into infectious and non-infectious categories that affect the structure or function of an organism, often disrupting its physical or mental well-being. The research found that out of 592 respondents with a higher prevalence of skin disease, 45.6% and 31.1% have respiratory problems, and 14.4% have common issues like ear, eye, respiratory and skin diseases. Among the three tea estates, 49.7% of women tea plantation workers from the Mainagarh Tea Estate, 39.5% from the Rukni Tea Estate and 48% from the Iringmara Tea Estate are faced with skin diseases/ problems because, during tea plucking, innumerable poisonous insects bite their bodies and use of polluted water causes different skin problems along with some water-borne diseases. The second-highest disease is respiratory problems found among the three tea estates, with a percentage of 31.9% from the Mainagarh, 33.7% from the Rukni, and 27.7% from the Iringmara Tea Estate. The respiratory problems are due to smoking and an abundance of drinking alcohol. Only 4.9% and 4.1% of the reproductive women tea plantation workers have ear and eye problems. (See Table 5)

Table 5: Distribution of Diseases among Reproductive Women Tea Plantation Workers in Selected Tea Estates (N = 592)

Diseases	Mainagarh Tea Estate n (%)	Rukni Tea Estate n (%)	Iringmara Tea Estate n (%)	Total Respondents N (%)
Ear Problem	9 (4.9%)	13 (6.3%)	7 (3.5%)	29 (4.9%)
Eye problem	4 (2.2%)	7 (3.4%)	13 (6.4%)	24 (4.1%)
Respiratory Problem	59 (31.9%)	69 (33.7%)	56 (27.7%)	184 (31.1%)
Skin Disease	92 (49.7%)	81 (39.5%)	97 (48.0%)	270 (45.6%)
Common to all	21 (11.4%)	35 (17.1%)	29 (14.4%)	85 (14.4%)
Total	185 (100%)	205 (100%)	202 (100%)	592 (100%)

Source Primary Dat**4.3. WOMEN'S EMPOWERMENT**

Women's empowerment is based on different dimensions, identifying women's progress and societal decision-making power. The dimensions are as follows: (Ibrahim & Alkire, 2007; Kabeer, 1999)

- 1) Economic Empowerment,
- 2) Social Empowerment,
- 3) Political Empowerment,
- 4) Educational empowerment,
- 5) Health and Well-being,
- 6) Decision-Making Autonomy.

4.3.1. SCORE CALCULATION & WEIGHTING

The index of women's empowerment is developed by analysing the codes assigned based on their relative dimensions through statistical methods like Principal Component Analysis (PCA). (Narayan, 2005) (See Table 6)

Table 6: Distribution of the Dimensions and Indicators with Possible Score Ranges Based on the Coding Used in the Development of the Women's Empowerment Index

Dimensions	Indicators (Possible Score Range)	Coding
Economic	Women's earnings (Income) (0 – 3)	No income = 0,
		1500 – 3500 = 1,
		3500 – 5500 = 2,
		5500 & more = 3
	Ownership of property and savings (0 – 1)	No = 0,
		Yes = 1
Social	Participation in any community group (mother's group, women's group, self-help group) (0 – 1)	Not involve = 0, Involve = 1
Political	Holding positions in political groups (0 – 1)	No = 0, Yes = 1
Educational	Level of education (0 – 2)	No education = 0,
		Primary level = 1,
		Above secondary level = 2
Health & Well-Being	Access to healthcare services (0 – 1)	No = 0, Yes = 1
	Use of contraception (0 – 1)	No = 0, Yes = 1
Decision-Making	Decision about household purchases (0 – 2)	Wife (Own) = 0,
		Husband = 1,
		Both or Others = 2
	Family planning decisions (0 – 2)	Wife (Own) = 0,
		Husband = 1,
		Both = 2

The weighting percentages are also distributed in different dimensions as follows:

- 1) Economic Empowerment: 30%
- 2) Social Empowerment: 20%
- 3) Educational Empowerment: 20%
- 4) Health Empowerment: 15%

5) Decision-Making Autonomy: 10%

6) Political Empowerment: 5%

Each dimension has a different weighted score, which creates the Women Empowerment Index (WEI). Based on the WEI distribution among each participant, three levels of empowerment, such as less, moderate, and high, have been measured. These three levels of empowerment have been identified by calculating the mean and standard deviation of the WEI score, and for getting the result of less empowerment level, the 25th percentile and for high empowerment level, the 75th percentile have been calculated. (Kabeer, 1999) (Alkire & Foster, 2011) Based on these calculations,

- Less Empowered: $WEI < 0.73$,
- Moderate Empowered: $0.73 \leq WEI \leq 1.13$,
- Highly Empowered: $WEI > 1.13$.

Table 7: Distribution of Empowerment Levels of the Surveyed Reproductive Women Tea Plantation Workers Based on Their Women Empowerment Index Scores

Empowerment Level	Number of Women	Percentage (%)
Less Empowerment	315	53.21
Moderate Empowerment	166	28.04
High Empowerment	111	18.75
Total	592	100

Source Primary Data

Table 7 indicates that the highest percentage of reproductive women tea plantation workers, 53.21%, are less empowered, followed by 166 (28.04%) and 111 (18.75%) who are moderately and highly empowered. The result shows that the empowerment level is increasing among the women workers in the tea estates.

4.4. ANALYSIS

To analyse the relationship between three variables: income from socio-economic status, nutritional status (based on BMI), and women's empowerment level among the 592 reproductive women tea plantation workers. Using SPSS, descriptive statistics, correlation, and regression were implemented for calculation. Descriptive statistics (table 8) shows that among the 592 respondent women, the mean and standard deviation of the empowerment scores are 0.81 and 0.29, followed by the Income and BMI, which have a mean and standard deviation of - 4806.65, 702.35 mean and SD for Income and 20.51, 5.07 mean and SD for BMI respectively.

Table 8 Distribution of Three Variables Based on Descriptive Statistics

Variables	Respondents (N)	Range		Mean	Standard Deviation
		Min ^m	Max ^m		
Empowerment Scores	592	0.13	1.6	0.81	0.29
Income	592	2000	6000	4806.65	702.35
BMI	592	13.35	33.09	20.51	5.07

Source Primary Data

Examining the correlation between these three variables: a) Empowerment score: Continuous variable (e.g. ranging from 0 – 3), b) Socio-economic status: Continuous variable (e.g. Income level of each respondent) and c) Nutritional status: Continuous variable {e.g. Body Mass Index (BMI)}, the Pearson's Correlation Coefficient 'r' is 0.638 (Empowerment Score and BMI), 0.477 (Empowerment Score and Income) and 0.353 (BMI and Income) respectively, which indicates the positive relationship at the significance level of 0.05. The critical t-value is approximately ± 1.96 , smaller than the calculated t-values (26.12, 13.18, and 9.17). The summary of this calculation is shown in Table 9.

Table 9 Distribution of the Variables based on Correlation Coefficient 'r' with t-value and Significance level

Variables	Correlation Coefficient 'r'	t-Value	Significance
Empowerment Score and BMI	0.638	26.12	Significant (p < 0.05)
Empowerment Score and Income	0.477	13.18	Significant (p < 0.05)
BMI and Income	0.353	9.17	Significant (p < 0.05)

(df = 590, p-value = 0.001)

After interpreting Pearson's Correlation Coefficient, the empowerment score and BMI indicate a positive relationship between these variables: as the empowerment level increases, the BMI also tends to increase. Similarly, the correlation between empowerment level/ score and income indicates a moderate positive relation, as the empowerment level depends on the individual's income level. Regarding BMI and income, there is a weak positive correlation with a slight tendency for BMI to increase with income, but the relation that forms is not so strong.

5. CONCLUSION

Women's empowerment in India has been a vital issue for many years. In recent decades, some progress has been made regarding women's empowerment. However, when it comes to women's equality with men, it has been found that women face equality challenges on most of the ground. Women's empowerment is a crucial component of feminist anthropology, which deals with social and cultural practices related to gender, power dynamics, and the status of women in every society. This research paper has explored the multifaceted dimensions of women's empowerment among the reproductive women tea plantation workers in the Cachar district from an anthropological perspective. It analysed the socio-economic and cultural aspects and their health status by measuring their nutritional status. This study has highlighted the importance of comprehending empowerment as a nuanced and context-specific phenomenon.

This current study has discovered that women are not able to advance in society due to gender disparities and other social and economic diversities. They do not have the right to decide about their health and families. The tea estate society is male-dominated. The man in the household makes decisions for the family, but the village's leader, the Panchayat, also a male, makes all the decisions. The researcher found that workers' households had a higher dependency ratio since only one or two individuals worked. Each family has 4 to 6 children, and it is clear that all responsibilities rest on women's shoulders. Women confront several hurdles, including discrimination, limited educational opportunities, and gender-based violence. When it comes to health, the majority of reproductive women tea plantation workers are underweight; they suffer from non-communicable illnesses, respiratory issues, skin irritation, gastrointestinal disorders, and anaemia. Regarding the empowerment issues, the research highlighted that women tea plantation workers are less empowered, and in statistics, the empowerment score is highly correlated with the income and nutritional status of the reproductive women tea plantation workers. Thus, the impoverished socioeconomic conditions of women tea plantation workers have influenced women's empowerment. Women could overcome this situation if the government solved these problems by introducing women's education, proper sanitation, well-maintained medical facilities and hospitals with appropriate doctors and nurses, and gender equality in tea gardens through various awareness programs.

CONFLICT OF INTERESTS

None.

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