



“Assessing Nutritional Status and Cultural Practices: A Study of Adi Tribal Women in East Siang, Arunachal Pradesh”

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Abstract:

This nutritional review examined the nutrition and health of Adi women in East Siang, Arunachal Pradesh, India. The assessment encompassed diet, socioeconomic status, and anthropometric measurements. Utilizing food and health frequency surveys, in-depth interviews, and focus groups, we analyzed the significant impact of education, employment, and family structure on nutritional health. The study involved 40 rural and 40 urban Adi women, focusing on four health and nutrition concerns through meal recalls, anthropometry, focus groups, and key informant interviews. Experienced moderators conducted pre-planned interviews, with diet recollections and focus group interviews transcribed and translated. The study revealed that the typical diet of the Adi people consisted of two high-carbohydrate, low-fat meals per day, deficient in vitamins A, thiamin, riboflavin, niacin, B12, C, as well as calcium and iron. Among the participants, 25% of women aged 18–22 were underweight, while 20% of women aged 22–30 were overweight. Cultural beliefs influenced dietary practices, such as the avoidance of papaya, pineapple, and twin-fruit during pregnancy, and skepticism towards prenatal iron supplements. Colostrum was deemed inferior to milk, and there was uncertainty about when to introduce complementary foods to infants. Chronic disorders like diabetes and hypertension were prevalent among indigenous women aged 35–45. The dietary, physical activity and health patterns suggested that Adi tribal women were in the third stage of nutritional transition: characterized by physically demanding work, a carbohydrate-rich diet with little fat and diversity, poor nutrition, and a lack of obesity. Despite minimal dietary changes, many traditional dietary beliefs and practices were found to be potentially detrimental. Nutrition education is crucial to promote diets rich in micronutrients. Additionally, advising pregnant women on appropriate food types and quantities, emphasizing the importance of colostrum for neonatal health, and advocating for the timely introduction of complementary foods are essential. Encouraging healthy diets and lifestyles is imperative to prevent obesity and non-communicable chronic diseases.

Keywords: Adi Community, Nutrition transition, Social-cultural aspects

1. Introduction:

Malnutrition continues to be a widespread health concern among children and adults in India, as emphasised in prior research. Marginalised individuals in Indian society, specifically Scheduled Tribes (STs) and Scheduled Castes (SCs), have the highest prevalence compared to other groups (Gragnotati et al., 2006). 'Avard's (2012) research article highlights that acute hunger plays a major role in under nutrition, posing substantial implications for the country. The significant occurrence of under nutrition in India was highlighted in the Global Nutrition Report (2015). India ranks 132nd out of 191 countries in the UNDP Human Development Index (2021), and 111th out of 125 in the Global Hunger Index (2023). There is a considerable degree of food insecurity across the country. The rating has dropped from 107th place in the previous year (2022). India's Global Hunger Index (GHI) score is 28.7 on a scale of 0 to 100, with 0 representing no hunger and 100 being the most severe hunger. One country takes a stronger approach than other governments in Sub-Saharan Africa and Asia, such as Bangladesh and Sri Lanka (GHI, 2023). In 2015, Gates emphasised the worry raised by national and international policymakers and social thinkers about the important problem of under nutrition in the country. Dealing with the prevalent under nutrition problem in newborns and children is a significant issue in India, as emphasised by Gates (2015) and CDGI (2023).

To address this problem, the Indian government has implemented a specific and goal-oriented approach. Adult malnutrition is a serious health problem, especially among marginalised groups like Scheduled Tribes and Scheduled Castes, as well as vulnerable populations like mothers and the elderly. Nonetheless, there is a lack of explicit government focus on nutritional intervention initiatives in this area. Individuals from underprivileged origins who experienced under nutrition throughout childhood frequently encounter continued under nutrition in adulthood as a result of their persistently poor socioeconomic status and limited access to contemporary healthcare. (Brown, 1986, 38) and (Bhattacharya et al., 2004, 839–862). The lack of favourable socioeconomic conditions among marginalised persons and households has resulted in widespread undernourishment, particularly affecting women's health the most. This has worsened the cycle of undernourishment and its impacts, which are passed down to future generations in the family. Research has indicated that children who experience severe under nutrition at a young age are more likely to develop non-communicable diseases and related difficulties in adulthood (Bhutta et al., 2004, 328; Morgane et al., 1993, 91–128). This is especially accurate for children from marginalised groups (UNICEF, 2021). Non-tribal Indian populations have observed a significant disparity in childhood under nutrition between girls and boys. A significant proportion of children are experiencing wasting (18.7%) and stunting (35.5%), according to the Global Hunger Index report of 2023.

Gender disparities, particularly in rural areas, play a crucial role in the prevalence of under nutrition among women. Moreover, studies show that half of the women in India experience anaemia (NFHS6, 2023). India is facing a major public health concern with a high prevalence of anaemia among children, non-pregnant women, and pregnant women, as reported in NFHS-5, 2021. There is a notable difference in the availability of adequate food and dietary options between men and women. Women in India face a substantial chance of being underweight throughout their lives, which is a major concern. Nube (1998) proposed that under nutrition, a symptom of poor health might be used as a significant indicator of the socioeconomic position of people and households.

India has over 50% of its population under 25 years old and over 65% under 35 years old. The average age of an Indian in 2020 will be 29 years. More than a quarter of the young population in India is affected by stunted growth (27.2%), anaemia (28.5%), or being underweight (24.1%). 29.9% of female adolescents and 25.4% of male adolescents are stunted. Anaemia affects 39.6% of girls and 17.7% of men, according to NFHS-6, 2023. Indicates significant discrimination against Indian women in the socioeconomic sphere. Low social status, poverty, lack of education, and marginalisation in obtaining health and social care during the early and later stages of life are the primary reasons for substantial nutritional disparities among them. These

observations emphasise the high-risk factors linked to under nutrition and contrast with the results of different studies (NFHS-6, 2023) that suggest no gender disparity in under nutrition prevalence among Indian tribes in children under 5 years old and adolescents, warranting further investigation.

According to the 2005 National Family Health Survey (International Institute for Population Sciences and Macro International), 35.6% of women have a low BMI and 30% of adults have moderate to severe protein-calorie malnutrition. According to a 2003 National Nutrition Monitoring Bureau assessment, 49% of tribal adult women had chronic energy insufficiency (BMI < 18.5). India, a developing nation, struggles with under- and over-nutrition. Diet changes due to modernization, urbanisation, economic growth, and prosperity are called the “nutrition transition” (Popkin, 2006).

As growing civilizations such as India undergo industrialization and urbanisation, and as the standards of living steadily increase, the issue of weight gain and obesity is becoming an increasingly significant health concern for the population. India has a preschool children obesity incidence of around 1%, according to the worldwide database of the World Health Organisation (WHO, 2000). The use of the often employed measure of malnutrition in pre-school children, namely weight-for-height, may also magnify the issue of obesity in children who are stunted (Popkin, et al., 1996). Episodes of malnutrition that occur repeatedly, followed by the process of nutritional rehabilitation, have been shown to change the composition of the body and raise the likelihood of obesity (Shetty, 2000).

Although nutrition results are generally inadequate across India, they are particularly dire in places that the Government of India (GoI) categorises as 'Tribal and Backward Areas' (TABAs) (WB, 2014). According to the 2011 Census of India, tribal women make up 4.2% of the entire Indian population, which is equivalent to 51 million individuals. Indian tribes, especially tribal girls, are at significant risk of severe malnutrition due to insufficient food and diet. There is a lack of thorough and foundational research assessing the undernourishment levels among tribal populations. Contemporary data on the health, nutrition, and wellbeing of women in Scheduled Tribe groups is lacking. The ST people mostly inhabit the states of Madhya Pradesh, Maharashtra, Odisha, Gujarat, Rajasthan, Jharkhand, Chhattisgarh, Arunachal Pradesh, West Bengal, Karnataka, Assam, and Meghalaya. They are among the most economically disadvantaged individuals in the nation, heavily reliant on the woods and other natural resources of the enclaves where they have been gradually confined. Arunachal Pradesh is a northeastern region of India that has borders with Tibet, Bhutan, China, and Myanmar. It is located on the Great Eastern Himalayan Mountain range and is acknowledged as one of the world's Mega Biodiversity hotspots (Myers et al., 2001). Over 25 distinct tribal groups have inhabited this hill state from ancient times. Each tribe has a distinct legacy of culture and lifestyle, which is exclusive to various geographical places (Solanki, 2000).

Tribal people are one of the most impoverished and socially excluded demographic groups, with severe levels of health deprivation (Willis et al., 2004). Several studies in India have assessed the maternal health and nutritional condition of the general population, but there is a lack of information about the health and nutritional status of small children and mothers within tribal tribes. Given the statistic that one out of every twelve women in India is a member of a tribal tribe, it is critical to prioritize improving their health condition as a key developmental objective. To address health disparities between tribal and non-tribal populations, particularly among women, it is necessary to focus on improving tribal communities' health. Addressing the lack of awareness about the factors contributing to poor health among tribal populations may achieve this.

The objectives of the exploratory research described in this paper were,

To examine Adi Tribal women's dietary patterns and nutritional well-being, assess cultural beliefs about food and their potential influence on nutritional health, and investigate the extent of nutrition transition within the tribal community.

1. Methods:

The research is primarily empirical, drawing on data collected from fieldwork. The research was carried out in a rural and urban area in Pasighat block of the East Sian district Arunachal Pradesh. Specifically, the study took place in Andre, Yapgo, Napit, Gunne, Boing, Sibut villages from October 2022 to January 2023. We chose 40 Adi Tribal women participants from urban area and 40 Adi tribal women participants from rural area. The statistics and data on nutritional practices and healthcare practices among tribal women are utilised to examine the issues raised and included in the study.

2.1 Sampling:

A dietary frequency questionnaire was created at the start of the epidemiological study (Sharma et al., 2008). The questionnaire is divided into three sections, including identity details, family's socio-economic condition, and family's food pattern. In addition to this survey, a health regularity questionnaire specifically designed for people in the age range of 18 to 45 years was also created. In this study, two anthropometric parameters, namely height and weight, were used to compute the Body Mass Index (BMI) of the women participants. Additional factors like as age and environment were also taken into account throughout the procedure. Remarkably, a solitary questionnaire proved to be enough for inquiring about the comprehensive medical state, encompassing diverse factors such as diseases, illnesses, and disorders. This study was carried out with 80 Adi tribal women using the snowball technique. A pre-designed and semi-structured questionnaire was utilised during direct interaction and observation with the participants.

2.2 Research Tools:

We studied population health using different methods. The standard approach of measuring tape and weight balance was used to collect data. The BMI of women was calculated using their height and weight. Weight (in kilogrammes) and height (in metres) squared are correlated by BMI. BMI is strongly linked to adiposity, including overweight and obesity. In a diverse nation like India with many ethnic groups, BMI may be needed to assess nutritional status (Divakar et al., 2012). As demonstrated in Table I, James and his colleagues' categorization method is extensively utilised for adults (Seshadri, 2008).

Table .1 BMI for Adult

BMI Range	
<17.0:	Thinness
<18.5 :	Underweight
18.5 – 24.9 :	Normal weight
_> 25.0 :	Overweight
_> 30.0 :	Obesity

2.3 Data Collection and Analysis:

The research conducted was descriptive and exploratory in character, focusing on Adi tribal women as the target population. The current research investigated the following overarching domains.

Food consumption patterns: Data on food consumption was gathered in three distinct times. The first phase consisted of conducting key informant interviews as an early exploratory activity. During phase two, researchers performed unstructured pilot observations of meals in families. The last stage included doing 24-hour meal recalls with individual participants. The analysis of dietary data was conducted by a proficient registered dietitian using Food Processor, copyrighted in 2014.

Nutritional assessment: Using anthropometric measures, women's weight and height were assessed for nutritional health. This computerised scale measured the women's weight to the nearest 100 grammes. A stadiometer measured their height to 0.1 centimetres. The World Health Organisation (WHO) Women Growth Standards (WHO, 2006) were used to assess women's heights and weights using height-for-age z-scores (HAZ and WAZ). HAZ measures height. Hazardous Anthropometric Z-score (HAZ) is more than 2 standard deviations below the WHO Women Growth Standards median. Thinness accurately indicates women's long-term nutrition. WAZ evaluates weight. A Weight-for-Age Z-score (WAZ) higher than -2 SD from the WHO Women Growth Standards median indicates underweight. Anthropological assessments using WHO AnthroPlus. The age was precisely calculated by subtracting the birth date from the exam date. The WHO AnthroPlus programme (WHO, 2006) calculated height, weight, and BMI z-scores related to the WHO 2007 reference.

Sociocultural values: Focus groups and interviews with key leaders were used to understand cultural diets. Since the focus group participants were from a different cultural group than the researchers, they used a semi-structured interview schedule. Both authors reviewed and discussed the larger notes to identify themes. Open-ended questions were asked throughout the recorded and transcribed interviews.

Nutritional Transition: Dietary consumption, exercise habits, urbanisation, and illness trends were compared to Popkin's nutrition transition patterns (Popkin, 2006). Popkin categorises dietary transition into five categories. In Pattern 1, Hunter Gatherer, humans have active lives and search for food. Diets often include iberous vegetables and wild animal protein. Pattern 2, Early Agriculture, has widespread starvation, reduced growth, and body fat. Pattern 3, End of Famine, sees famine decrease as wealth and nutrition increase. Overeating, Obesity Diseases. Increased wealth, availability to high-calorie meals, and decreased physical activity contribute to obesity and obesity-related chronic disorders. Pattern 5, Behaviour Change, involves people and groups altering behaviours to combat rising obesity and obesity-related chronic disorders.

2. Results:

3.1 Socioeconomic factors influencing the health of Adi women:

Research has shown that individuals with lower socioeconomic position tend to prioritise receiving nutritious food and medical care in a hospital setting rather than opting for home therapy and consuming nutritious meals. Our research reveals a significant correlation between the financial status of person and their overall inclination towards 'Nutritious food' and hospital care or traditional healing. Countless studies demonstrate that individuals hailing from impoverished backgrounds, particularly women, are consistently deprived of nourishing sustenance, rendering them vulnerable to a multitude of both non-communicable and communicable ailments. Furthermore, those with a lower socioeconomic status have a greater prevalence of sickness, disability, and physical activity limits as a result of inadequate access to nutritious food and health-related problems, in comparison to those with a higher social standing. Moreover, they have limited access to various healthcare facilities and get worse quality of treatment in several aspects. There is a clear correlation between socio-economic position and the use of medical services provided by physicians. Undoubtedly, as prosperity has grown, there has been a convergence of sickness rates among different socioeconomic levels.

However, there are other kinds of illnesses that exhibit varying rates of occurrence across different demographic groups. Chronic illnesses are more prevalent among those from poorer socio-economic backgrounds. The higher prevalence of chronic diseases in the lowest income group may be partially explained by a mechanism in which sickness and incapacity lead to a decrease in income. However, it is also probable that some of the differences can be related to an increased susceptibility resulting from less suitable living circumstances. Reduced socio-economic position likely impacts the capacity to get medical treatment

and other beneficial environmental elements. Limited access may also lead to avoidable impairment and premature mortality (Mechanic, 1978; p. 194).

The provision of medical care is contingent upon the requirements and contentment of those seeking the service. The proficiency and facilities linked to the occupation and the qualifications of the recipients are consistently significant in medical care. Human health issues may stem from several factors, and often, in the case of illnesses, particularly contemporary ones, they may occur regardless of individual causes. The advancements in medical treatment in recent times have raised several inquiries and uncertainties. These concerns have more significance when they are applied to the state of affairs in our society. Typically, women's reliance on a certain healthcare system is believed to differ based on their financial level. Individuals with lesser income tend to use government medical centres more often than those with higher incomes. Younger respondents often prefer accessing private medical care from hospitals when they need it (Sumaraj, 1991; pp.48-78).

3.2 The Influence of Cultural Beliefs on Food and its Effects on Nutritional Well-being:

Three focus groups were held in order to ascertain cultural beliefs. 1) Healthcare practitioners, 2) Traditional healers of the Adi tribe additionally, interviews were carried out with a total of 10 pregnant women. The results obtained from the theme analysis of the focus group and interview notes are categorised into two primary domains:

1) Cultural attitudes on the role of food at different stages of life; 2) Social-cultural beliefs and Sanitation Practices. Emergent themes are provided for both domains.

1) Cultural attitudes on the role of food at different stages of life:

Pregnancy: Pregnant women must adhere to certain dietary guidelines. During pregnancy, it is recommended to avoid consuming certain foods such as aubergine and papaya. Maternal figures often advise expectant moms to refrain from consuming these certain foods because to their perceived association with pregnancy loss. Additionally, they hold the belief that papaya may induce early lactation. Therefore, pregnant individuals are advised against consuming papaya, but are encouraged to consume more of it during breastfeeding. There is a belief among many women that consuming pineapple while pregnant might lead to a miscarriage. It is believed that consuming a banana with twin fruit inside will increase the likelihood of women having twins. Therefore, women are advised to avoid eating bananas before and during pregnancy. There is a widely held concept that women should refrain from selling fruits and eggs when they are pregnant. The rationale behind this superstition remains unknown; yet, because to its widespread acceptance, women refrain from selling them when pregnant. In general, pregnant women refrain from taking the prenatal iron supplement due to the belief that it leads to the birth of bigger kids. Women are permitted to drink low-alcohol beer during pregnancy due to its perceived therapeutic properties. Nevertheless, in the event that a kid who is being nursed has diarrhoea, it is recommended that the mother refrains from consuming rice beer.

Infants: It is a common habit in the society to refrain from giving colostrum to the newborn and instead dispose of it. Colostrum is sometimes referred to as 'poor milk' or 'dirty milk' and is thus not considered beneficial for the newborn. Matriarchs advise moms to start supplementary meals no earlier than the child reaches the age of one year. We have discovered that a significant number of women are defying this societal assumption and starting solid foods at an early stage.

The children. Through conducting interviews and focus groups, it was determined that there were no discernible disparities in feeding behaviours based on gender. Children were provided with more nourishment, including milk and meat, to encourage their growth.

Adults: Men are permitted to capture, process, and consume game meat, whereas women are prohibited from consuming game meat or flesh from quadrupedal animals. The meat restrictions cease for women after menopause. Following the consumption of game meat, males are required to abstain from contact with women for a period of 5 days.

2. Social-Cultural beliefs and Sanitation practices:

Households lacked a refrigeration method to securely preserve uneaten food. Smoking is a frequently used technique to preserve raw meats; however, it generally involves leaving the meat at room temperature for an extended time before smoking. Raw meat is openly displayed at the market throughout the day. Many households feature a decentralised sanitation system. Water is kept in uncovered plastic buckets for extended durations and is used without undergoing any kind of treatment. Water is only boiled for the purpose of being consumed by infants. All the houses are elevated on stilts, with animals such as pigs and chickens residing below. Excess food and body waste are discarded and consumed by animals.

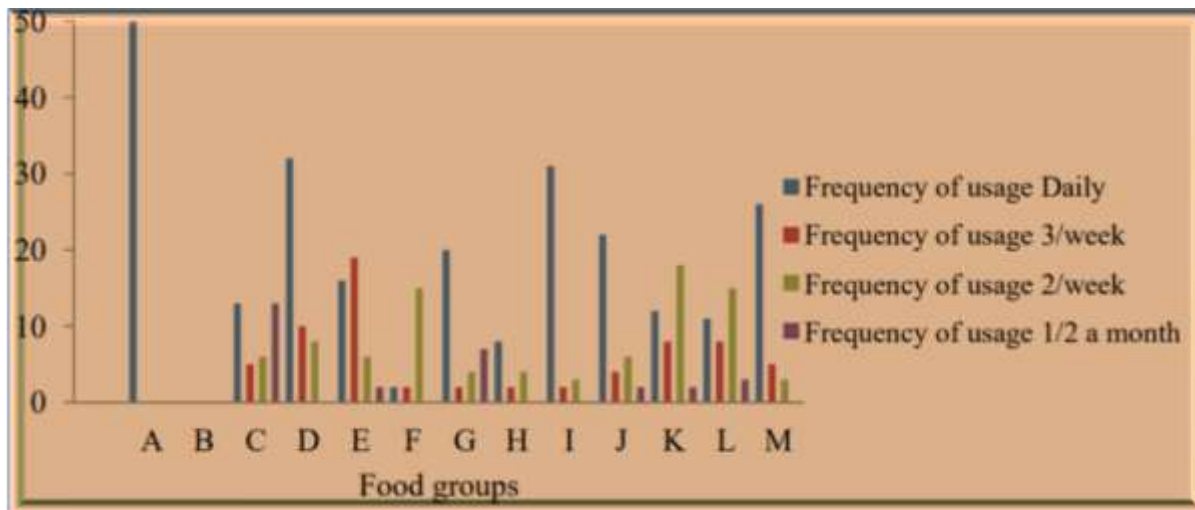
3.3 Nutritional Practices and Nutritional Sufficiency among Adi Women:

Native and regional diets affect the health of many indigenous cultures worldwide. A nutritional evaluation of a tribe or community collects vital data on their diet and health. Mandal et al. (2002) said each tribe has unique eating preferences. Arunachal Pradesh, in northeastern India, has a large Adi community (Kumar, 2020, p. 2). Many believe that all "Adi" ethnic groupings are Abutani/Abotani. The Assamese word "Abor," means autonomy. Nyori (1988) describes "adi" as a "hill" or "mountain top" (vol. 9, p. 95). Several factors affect nutritional health. Work, money, education, cultural influences, lifestyle, gender and genetic differences, isolation, age, disability, housing circumstances, and services and amenities all impact diet, health, and nutritional well-being. Additionally, food patterns might vary even within tribal members depending on their rural or urban location.

Assessing both areas' nutritional health is crucial. A complete nutritional assessment considers body measurements, biochemical indicators, clinical observations, eating habits, socioeconomic considerations, and drug-nutrient interactions (Mahan et al., 2000). An individual's nutritional status is determined by their food intake and body utilisation, which affects their health. Malnutrition affects a big portion of the population in developing countries like India. This disorder produces macronutrient and micronutrient deficits. Vital signs are the body's key physiological functions that indicate health.

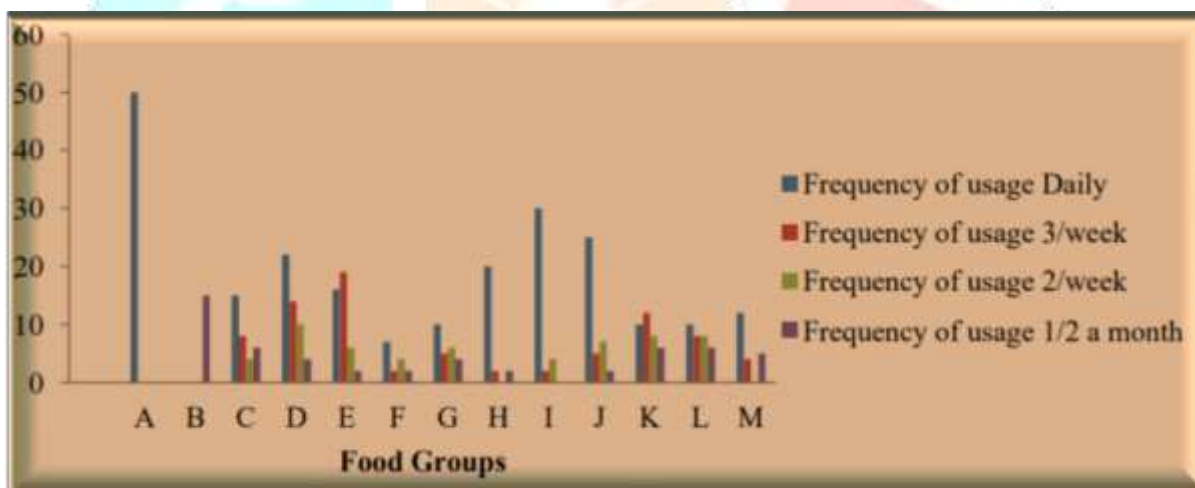
- i. **Nutritional Practices:** The common eating pattern was identified via interviews with 10 key informants, observation of five home meals, and 24-hour food recalls with 20 participants. The nutritional regimen included two daily meals. Each meal consisted of unenriched white rice, lentils, potatoes, and green leafy vegetables. On average, meat was ingested 2-3 times a week in 3-4 ounce amounts. Tribal members consumed full milk and sugar-flavored tea twice daily. We found that women between the ages of 18 and 25 consumed more flour-rich diets and more spices from other states, which led to gastrointestinal diseases. Every day, adults (men and women) drink traditional rice beer. However, as a result of liver disease, there has been an increase in the usage of more alcohols (known as 'Nipak' or non-traditional alcohol).

Food consumption frequency of Adi women in rural areas



(A: Rice, B: Wheat, C: Pulses/legumes, D: Green leafy vegetables, E: Roots & tubers, F: Other vegetables, G: Fruits, H: Milk & milk products, I: Sugar & jiggery, J: Oils & fats, K: Flesh foods, L: Carbonated beverages, M: Tobacco/alcohol)

Food Consumption frequency of Adi women in urban areas



(A: Rice, B: Wheat, C: Pulses/legumes, D: Green leafy vegetables, E: Roots & tubers, F: Other vegetables, G: Fruits, H: Milk & milk products, I: Sugar & jiggery, J: Oils & fats, K: Flesh foods, L: Carbonated beverages, M: Tobacco/alcohol)

Factors such as an individual's socio-economic level, cultural background, and place of living greatly influence their daily food intake. When examining the food pattern of the Adi community, we may see that the indigenous food system in Arunachal Pradesh lacks dal, wheat, potato, oil, and spice. The distinct characteristics of this location make it a fascinating subject for study (Paylum et al., 2015).

100% of women in rural areas rely on rice as their primary food source, with only a minimal proportion of families using wheat. The inhabitants of these regions consume a significant amount of green, leafy vegetables. Indigenous communities have used a multitude of plants as sustenance and medicinal remedies since ancient times. Researchers have linked a decreased incidence of several types of cancer to consuming 250 to 500 grams of vegetables per person per day. Furthermore, diets rich in plant-based foods are associated with a decreased risk of heart disease and other age-related chronic illnesses. Vegetables have phytochemicals that exhibit anti-cancer and anti-inflammatory characteristics, hence bestowing several

health advantages. Developing a healthy dietary habit for oneself and one's kid is of paramount importance for every family member. This is because good eating habits are not only beneficial for current health but also for long-term overall well-being (Pandy et al., 2014).

Nutritional Transition:

The assessment of nutrition transition was conducted by analysing changes in food consumption, exercise habits, urbanisation, and illness patterns.

The dietary consumption habits aligned with the customary staple foods of the Adi tribe. There was a lack of globally accessible food and no indication of any changes in eating habits. While women living in rural areas may not be affected by globalisation, urban women in the age group of 18 to 25 show a noticeable impact on their diets. Specifically, these young women tend to consume a diet that is heavily influenced by Korean culture. It is worth noting that this dietary change is also observed among women of the same age group residing in rural areas. An examination of these data reveals that the age and location of residence of the responder are the primary factors influencing the incidence of nutritional transition. Furthermore, the diet lacks diversity and is susceptible to shortage during the monsoon season.

The tribal people's economic foundation remains mostly centred on agriculture and hunting. However Globalisation has led to a shift in traditional agricultural techniques among tribal tribes, with a move towards modern agriculture. Consequently, there has been an increase in the usage of pesticides, resulting in a decline in the quality of crops. The current generation is experiencing several health issues as a result of consuming grains in their diet. One example is the reduction in the age of menstruation in girls, with menstruation now occurring between the ages of 8 and 10 owing to hormonal changes. Additionally, girls born between 1995 and 2000 are more prone to developing polycystic ovaries.(Das, et al., 2023) Therefore, the levels of physical activity are classified as moderate to vigorous. Mainly malnutrition and communicable illnesses. The prevalence of obesity and diet-related, non-communicable illnesses was minimal. According to Popkin's phases of the nutrition transition, the Adi tribe is now at stage 3. This stage is characterised by physically demanding work, a diet that is high in starchy foods but low in variety and fat, nutritional deficiencies, and a lack of obesity.

The research focused on the adult age group and collected anthropometric measurements such as height and weight in order to determine BMI. Studies have shown that different tribal people have elevated levels of chronic energy deficit (CED) as determined by their body mass index (BMI) values (FAO, 2023).



The results indicated that 60% of rural persons had a normal BMI, compared to 52% of urban adults. This suggests that around 50% of the adult population in metropolitan areas have a BMI that is either below or over the normal range. The primary public health concerns, particularly among poor individuals in rural areas of developing nations, are low Body Mass Index (BMI) and elevated levels of under nutrition as determined by BMI. The study findings indicate that the urbanisation process is significantly altering the lifestyle of tribal women, leading to reproductive health issues such as polycystic ovary syndrome (PCOS) among women in tribal areas.

Conclusion:

This research aimed to examine the food and nutrition of Adi tribal women in East Siang, Arunachal Pradesh. Although the diet was abundant in carbs, it was lacking in thiamin, niacin, and riboflavin. The lack of B-vitamins in rice after milling is the reason behind this. Consuming green leafy vegetables provided folate and moderate fibre consumption. Vitamin A was scarce in the diet. This observation was supported by xerophthalmia detected during physical examination of the youngsters. Physicians interviewed in the focus group reported anaemia as a medical condition.

Average iron intake was 55% of permissible levels, according to nutritional analysis. The diet contains plant-based or non-heme iron. Despite its propensity to boost non-heme iron absorption, Adi tribal women consumed little vitamin C. Diets were deficient in calcium. Elderly ladies with bent spines, often associated with osteoporosis, were observed and discussed with tribe leaders. To address micronutrient shortages, nutrition education should stress locally available foods or cooking methods that boost nutrition. Rice includes iron, thiamin, niacin, and riboflavin, hence tribal women should avoid processing it.

Overall, the nutritional health condition of rural women was better than that of urban women. The concept was formulated after successfully analysing and comparing dietary health data from both targeted areas. However, there are significant disparities in socio-economic status, food habits, and health conditions between rural and urban populations. There is a correlation between a low socio-economic position and harmful eating habits. People with less education and a low income tend to consume more energy-dense food, whereas those with a better socio-economic status consume more fruits and vegetables.

The accessibility of goods may sometimes impact an individual's food habits, which in turn affects their overall health pattern. Conversely, inadequate sanitation and hygiene consistently contribute to the prevalence of several illnesses such as diarrhoea, malaria, typhoid, and dysentery. Inadequate understanding of basic sanitary habits, such as hand washing before eating, water purification methods (such as boiling or filtering with sand or water filters), and proper cleaning and sun drying of utensils, might contribute to the occurrence of many illnesses or health anomalies. Habit plays a crucial role in shaping an individual's good eating habits and hygiene practices, as it acts as a guardian in this process.

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