

Book Chapter

Diet, Nutrition and Nutritional Value of the Tribal population in Various States of India: A General Review

Abstract

Generally, we review the Diet, Nutrition, Nutritional value, and Ethnic medicines of various tribal population in various states of India and their pattern of diet related with socio-economic status. India is a diversified country with half of the vulnerable tribal population groups of the world. The dietary habits and nutrition of the tribal population are different from the rest of the population of India. Tribal population of India are socio-economically disadvantages compared to the other population group of India. The tribal population of India have various nutritional health problems due to cultural characteristics, socio-economic development, and geographical isolation. Natural forest ecosystem is the living place of the tribal population of India from where they take diet and nutrition supplement to sustain their life. Nutrition, health, and child malnutrition are the key determinant of the life of the tribal population of India. As the 50% tribal population of the world are living in India, it is merely emphasizing the consumption of diets and nutrition among the adults, adolescents and children and their malnutrition of the various tribal groups of India (source). The assessment and monitoring of diet, nutrition, and nutritional value of various tribes of different states of India should be taken as a measure study. The types of diet, nutrition and nutritional status are focused information on their dietary habits of the various tribal population in several states of India.

Key words: Diet, Nutrition, Malnutrition, CED

Introduction

Since some years ago, world has setup a large goal in increasing food consumption to an adequacy level but not the least of the problems joint with the population growth in India, China, Central America, and few other countries (Black, 1947). The nutritional requirements of the people of India are differed from other countries was an interesting facts and useful information from the nutritional studies in India. Protein, zinc, calcium, vitamin-D, and

cereal-based diets, animal source foods could affect the lean body mass (LBM) of adults in developing countries (Kulkarni et al; 2014). The sustainability of life of the people in the developing countries is associated with the nutritious food habits. Malnutrition in the developing countries is the main cause of the development of fatal diseases due to impaired immune functions of the people. India covers 8% of Tribal population and particularly vulnerable to malnutrition. The geographical isolation, health facilities and socioeconomic challenges impacts the diet and nutritional value in the different tribal population areas of India. Thus, the study of diet and nutrition in the adolescent tribal population of India was emphasized (Rao et al; 2006). The subsistence and traditional farming in the tribal population of India raising a big issue on the diet and nutritional requirements on the tribal reproductive women. Due to the nutritional deprivation, Body Mass Index (BMI) of tribal populations are associated with high rates of chronic energy deficiency (CED). The nutritional deprivation is a cause of health impairment in the tribal population. The health impairment challenges are the cause of the spreading of the chronic and infectious diseases in the tribal population of India (Das et al; 2012).

Nutrition is a very supportive issue to modulate immune response towards the chronic infectious diseases in common and tribal households. The survey of the various published literatures on the various diet and nutrition pattern in the various tribal population of India is completely necessary and recapturing those essential nutritious elements trends the overall present scenario of nutrition impact in various tribal population of India. This review is merely centralized in the collection of diet, nutrition, and malnutrition scenario of various state tribes of India, awakening, and recognising to more focus on the reported study on the diet, nutrition, and cause of malnutrition in various state tribal population of India.

Diet, nutrition, and nutritional value of tribes in several states in India

Generally Indian tribes are a vulnerable group of population where their socioeconomic condition depends on the agriculture and forest occupation structure-based ecosystem (Rao et al; 1994). Sustainable nutrition is very crucial to maintain the lifestyle of an individual. Taking nutritious diet and keeping healthy is a prime lifestyle of human beings from any community of India. Geographically, the schedule tribes were predominantly residing in the twelve states of India. These states are Odisha, Maharashtra, Madhya Pradesh, Gujarat, Rajasthan, Jharkhand, Chhattisgarh, Assam, Karnataka, Arunachal Pradesh, West Bengal, and Meghalaya (Wright and Gupta, 2017). The women of schedule tribes of India are very

inadequate intake of nutrients. Place of residence, religion, age group, wealth status, marital status, parity, and family size were the most important determinants of the nutritional value of the Indian tribal women (Biswas et al; 2022). The socio-economic, socio-culture, environmental factors influence the food intake in the tribal population of India. Nutrition is an important determination for the growth of adolescent **tribal**. Diet and nutritional status of the nine states of adolescents tribal of India was carried out where the deficit of micronutrients such as iron, Vit-A, free folic acid, riboflavin was reported (Rao et al;2006). Also, the elderly tribal population were suffered the intake of poor nutrition in the nine provincial states of India (Arlappa et al;2006). The family of Indian tribal population were failed to **nutritional** support to their children. The tribal family of India suffers various miserable factors such as poor health care delivery system, geographical isolation, beliefs and customs, socioeconomic condition, cultural condition has a great impact on the child nutrition (Raju et al; 2015).

Several studies on diet and nutrition have been reported in the various tribal states of India. In these studies, many tribal states were under malnourishment due to insufficient macro and micronutrients in their food habits. The tribal women of India are illiterate and ignorant. Various studies on tribal women nutritional food supplement were associated with nutritionally deficient micro and macro nutrients. Nutritional status of the adult women of the primitive tribal groups (PTGs) belonging from Khond, Gadaba and Porja tribes of Andhra-Pradesh were associated with daily diets like rice, ragi, jowar, bajra, wheat, cereals, vegetables etc. (Kupputhai et al; 1993). In the Vishakhapatnam district of Andhra-Pradesh, one fifth of the tribal women population were at risk of nutritional deprivation. The main diets such as Rice, Ambali, vegetable, tea, milk, and dal are the main tribal women food stuffs of Visakhapatnam districts of Andhra-Pradesh (Nayak et al; 2016, Nayak et al; 2017). Diet and nutrition of the tribal population of Khammam district of Andhra Pradesh was reported from the ITDA project study. All foods except cereals and millets below recommended level and deficient in micronutrients such as riboflavin, vitamin-A, iron, and fats were observed (Laxmaiah et al; 2007). The nutritional health and dietary pattern of the Idumishmi tribes of Arunachal Pradesh, state of Northern part of India was reported.

Idumishmi tribes were consumed two meal pattern diet with high carbohydrate, low fat content, poor in vitamin A, thiamine, riboflavin, niacin, B12, vitamin C, calcium, iron etc. Idumishmi tribes have the cultural beliefs to avoid the eating up papaya, pine apple, iron supplementation etc (Wright and Gupta; 2017). The Santhal tribal community of Jharkhand

has the traditional knowledge of consuming the indigenous foods (IFs). Generally, these tribes were obtained foods such as green leafy vegetables (GLVs), meat and meat products, roots and tubers, fruits, and vegetables from their own agricultural land for a household consumption. Santhal tribal women were consumed adequate protein for high energy but they were consumed inadequately Ca, Fe, Vit-B12, folate, vitamin-B2 micronutrients (Ghosh-Jerath et al; 2016). Oraon tribes of Jharkhand were dependent on the indigenous foods. The indigenous foods indicate the higher intake of key micronutrients, calcium, and iron etc. 40% women of this Oraon have degrees of Chronic Energy Deficiency (Ghosh-Jerath et al; 2018). Munda, an indigenous tribal community in Jharkhand depends on the natural ecosystems. Munda were adequately consumed the rice-based food, tubers and pulses, flesh foods such as meat, poultry, egg, or fish. Milk was rarely consumed by Munda tribes of Jharkhand state. Munda tribes were traditional knowledge of food habits (Ghosh-Jerath et al; 2021). A vulnerable primitive tribal group SauriaPaharias, of Jharkhand, India was potentially sustainable with nutrients rich foods of indigenous food system. SauriaPaharias of Jharkhand has a traditional ecological knowledge of the 193 indigenous foods included indigenous rice, indigenous pulses, insects, wild animals, fishes, mushrooms, roots, tubers etc. Among these IFs, 44 IFs were rich sources of protein, vitamin- A, vitamin-C, calcium, iron etc. SauriaPaharias tribe did not consume the milk in their routine diet. Even the SauriaPaharias women were consumed the IFs but 96% women had below nutrition requirements for all nutrients (energy, iron, calcium, zinc, vit-A, vit-C, riboflavin, pyridoxine, folate were reported (Ghosh -Jerath et al; 2020, Rokade et al; 2020). The tribal women were under malnutrition and the spatial variations of nutrition's in all districts of tribal women was extensively reported. The nutritional food stuffs of Oraon tribes of Jashpur district, Chhattisgarh were depended on the traditional agriculture. Their foods such as rice, roti is rich in carbohydrates but deficient in protein, vitamins, iron content leading to poor nutritional status, health. The female Bhaina tribe of Bilaspur, Chhattisgarh, India was suffered in malnutrition (Gole, 2015). Nutritional value determines the socioeconomic status of Saharia tribe of Madhya-Pradesh. Tribal population of Madhya-Pradesh under nutrition because of their traditional agricultural practise, irregularity of food supply. Saharia tribe is a backward tribe of Madhya-Pradesh mainly consumed wheat bread. Due to unavailability of wheat, sometimes they were consumed roots, tubers, leaves etc. (Rajak ,2016). Baiga, a primitive tribe of Madhya-Pradesh are poor because of their pre-agricultural technology, stagnant population, low literacy. Baigatribals were nutritionally poorer than other tribal population of Madhya-Pradesh state of India. They were highly consumed maize and rice as a

staple diet and intake cereals higher than recommended level. The low-level diet includes pulses, green leafy leaves, sugar, jaggery, oil and fat etc. The milk consumption is very less and calcium nutrition deficit was lower than the recommended level. The quantity and availability of food lacking in the Baiga tribal children of Madhya-Pradesh (Chakma et al;2009, Shirisha , 2019). Bharia is a primitive tribal group in Madhya-Pradesh. Bharia tribal population were acquitted with traditional agriculture and survived in malnutrition as per the chronic energy deficiency (Kumar et al;2007). Kharwar tribes of the Uttar-Pradesh were under malnutrition because of seasonal variation during crop cultivation and availability of agriculture and forest produce [Jaiswal;2018]. West Bengal Oraons tribal population were deficient in all food groups. The diet includes cereals, greenly leaf vegetables dhekisaag, fermented leftover rice, milk and fruit were almost less consumed by them (Mittal and Srivastava, 2006). Kora-Mudi tribal women and adult of West Bengal were survived under malnutrition (Bisai, and Bose 2009, Bose et al ;2006). The Bhumija Munda tribe of the Mayurbhanja, Odisha were generally consumed cereals, vegetables, fruits etc. Rice, potato, and green leafy vegetables were the staple food consumed by them. They were habituated with the lack of balanced diet and vitamin rich foods (Joshi et al; 2016). Primitive Saharia tribe of Rajasthan were poorly suffered in diet and malnutrition. Total fat, vitamin-A, vitamin-C, riboflavin, free folic acid was found less consumed than requirement by the primitive Saharia tribe (Rao et al; 2006). The tribal women of Tamil Nadu were less consumed the fat, retinol, riboflavin, calcium, pyridoxine, and iron and were suffered in malnutrition (Priyadarshini et al; 2021). Indian tribes were used forest and trees are the major resources for the life style. Due to their indigenous knowledge on food habits, they were consumed wild edible fruits. Nearly 26 wild edible fruits species such as Morusalba, Syzygiumcumini, Diospyrosmelanoxylon, Madhucalongifolia etc. were consumed by the Oraon tribe of Chhattisgarh, India [Panda et al, 2022]. Wild edible plants are a source of vitamin C, carbohydrates, proteins, and some essential minerals. Generally, the Khasi tribes of Meghalaya, Vasavas tribes of Gujarat of India were used the edible fruits as a source of food (Jeeva, 2009; Chauhan et al;2018).

Malnutrition in tribal children

Very poor nutrition in the tribal children of various states, India was reported. The burden of childhood undernutrition was found to be associated with the economic, social, contextual, and demographic factors, socially economically poorer, less educated mothers, residing in the rural and deep forest region of India is the cause of below three years age group of childhood

malnutrition in the tribal population of India (Adhikari et al;2021). Among the four tribal races Katkaris, Koknas, Kolis and Warlis of Maharashtra, the prevalence of hunger nutrition was observed among the below five years age group children of Warlis tribal race of Maharashtra (Tekale, 2006). The low literacy tribal children of the aspirational districts such as Raygada, Malkangiri, Balangiri, Koraput, Kandhamal, Nuapada, Kalahandi etc. of Odisha were suffered in malnutrition leads to weight loss (Kumar et al;2019). In the West Bengal state, the nutrition status of the under five years rural tribal children were under nutrition. Generally, the rural tribal children were consumed very low dietary intake of energy, protein and fat is a cause of under nutrition in form of stunting and wasting (Chandra et al; 2021). The regional variation in child malnutrition is an issue in the various tribal communities of India (Debnath, and Bhattacharjee, 2016). Under six years of age of the tribal children of the rich state of India like Maharashtra were nutritionally poor due to their common dietary pattern of rice and pulses (Ghosh and Varekar 2019). The nutritional condition of the tribal children of Dhodia, Kinnaura, and Bhil tribal communities belongs from Costal, Himalayan and Desert ecology in India was prevalent in these communities. The prevalence of child undernutrition was in terms of wasting, stunting and underweight body structure (Kshatriya. and Ghosh 2008). WHO criterion (Z -score) on nutritional indices such as weight for age, height for age, weight for height is indicated under nutrition in the form of underweight, stunting, wasting, low consumption of energy, protein among the Kamar tribal children in Chhattisgarh, India and under five years age group of tribal children of Andhra-Pradesh, India (Mitra et al; 2007, Sukhdas et al;2014). In Assam state, nutritional status of the Rabha tribal children, Udalguri district was assessed. The prevalent of malnutrition was common in girls compared with boys. Education of parents was an important issue for malnutrition in Rabha tribal children of the Assam, India (Das et al; 2020). In the Tripura state of India, the Chakma tribal girls are malnourished. The supplementary balanced diet and micronutrient rich food could support the health promotion of the Chakma tribal girls of Tripura, India (Shilpi and Sil 2018). The tribal children of Maharashtra were undernutrition. The tribal children's diet mainly composed of only rice and dal. Food consumption pattern of the tribal children was almost aware from leafy vegetables, milk products, fruits, fish and eggs, fleshy foods etc. Half of the world tribal population are living in India and one third of the worlds malnourished children live in India. The socioeconomic inequality at district levels of India is a cause of undernutrition among the tribal children. This form of socioeconomic inequality influenced in stunting, underweight and under height of the tribal children, education of their mother and safe drinking water at district levels of India (Shrikant et al, 2019).

Role of nutrition in tribal health

Tribals were the marginalized social group living in the various states of India. Nutritional levels of various states tribal population of India were inadequate. The burden of communicable and noncommunicable diseases was completely associated with the levels of undernutrition in several tribal population states of India (Jain et al; 2015). The tribal communities of Chhattisgarh namely Bhatra, Gond, Kondh, Paraja were highly vulnerable to nutritional deficiencies, various genetic diseases, and lack of basic health facilities. The high incidence of nutritional deficiency was observed among the four vulnerable Chhattisgarh tribal segments of infants, pregnant women, children, and nursing mothers (Balgir;2011). The tribal children in Maharashtra, various factors like traditional beliefs, physical environment, cultural practices, changing the social, cultural, and economic domain affected the nutritional health.

Discussion

Continuous earnings throughout the year and debt free condition in a tribal family influence the nutritional status of the women. Nutritional education is the factor to support the diet supplementation to the tribal population of India. Nutrition education is mainly providing the well support of the micronutrient's rich foods, proteins, and vitamin rich foods and importance of feeding during pregnancy as well as importance of colostrum for infant's health. Immediate intervention study coverage is very essential for the Malnutrition tribes. Nutritional value of various tribal states in India could be highly emphasized on poor nutrition due to lack of nutritional awareness and nonavailability of health services in the inaccessible tribal areas. The progress of social, economic, and demographic burden of tribal population of India should be **considered** to relieve the burden of childhood undernutrition of India. The effective public health strategy could be implemented as per WHO classification for assessing of severity of malnutrition in various tribal population states of India. The standard life of the tribal population should improvise through an integrated multisectoral coordinated approach in various tribal districts of India. As the diet and nutrition of the various tribes of India are different, the various policy prescriptions for nutrition management and supplementation in the different age groups of adults and adolescents, children should follow in various tribal groups of India. The introduction of the nutritional education and nutritional intervention program could enhance nutritional value of various tribes of India. Chronic energy deficiency (CED) is the major factor of malnutrition in Indian tribes. Chronic

energy deficiency of the individual tribal person from various groups should take as an important parameter during the assessment of the nutritional status of the tribal population of India. The comparative assessment of the nutrition and health of the various tribes and non-tribes in different states is very essential to supplement nutritious diets in the various tribal groups of India. The daily dietary chart should be prepared to engage the health services of the people to evaluate the dietary consumption by the various tribes of India. Various multisectoral integrated approach in agriculture and forestry should be implemented for enhancement of nutritious diets in the tribes of coastal, Himalayan and desert ecology habitats of India. Education and educational service should be mandatory for various tribal women living states of India to know about the diet and nutrition consumption and maintaining healthy life in a family. Training for the food security and personal hygienic conditions of the nutritious diets of the tribal population is very essential. The various programmes could be implemented in for the consumption of key nutrients in various tribal population of India. The investigation and supplementation of the key nutrients are required to ensure the nutritional status of the tribal children of India. More administrative steps would be implemented to evaluate the socio-economic inequality in malnutrition in the district levels of the tribal states of India. Lean body mass index (LBM) could be a prioritize index for the tribal population of India.

The signs and symptoms of the communicable and noncommunicable disease among the various tribal population of India could be examine thoroughly. Then establish a clear and definite diagnosis of nutritional diseases and deficiencies, dietary surveys and biochemical analysis data may confirm the findings of inadequate nutritional standards of various diets consumed by the tribals of India.

Conclusion

It is very stochastic information on the consumption of diet and nutrition as well as the deficiency in malnutrition by the various tribal population of different states of India. This reviewing collective information could focus the short fall of dietary and nutritional practices as well as adopt various transformative programmes of the various tribal population of India.

References

1. Black, J. D. (1947). Adequate Diets for All Peoples-Size of the Task. *Nutrition Reviews*, 5(6), 161-162.
2. Kulkarni, B., Hills, A. P., & Byrne, N. M. (2014). Nutritional influences over the life course on lean body mass of individuals in developing countries. *Nutrition reviews*, 72(3), 190-204.
3. Rao, K. M., Balakrishna, N., Laxmaiah, A., Venkaiah, K., & Brahman, G. N. V. (2006). Diet and nutritional status of adolescent tribal population in nine states of India. *Asia Pacific journal of clinical nutrition*, 15(1), 64-71.
4. Das, S., & Bose, K. (2012). Nutritional deprivation among Indian tribals: A cause for concern. *Anthropological Notebooks*, 18(2).
5. Rao, D. H., & Rao, K. M. (1994). Levels of malnutrition and socio-economic conditions among Maria Gonds. *Journal of Human Ecology*, 5(3), 185-190.
6. Wright, L., & Gupta, P. (2017). Situational nutritional analysis of Idumishmi tribes of Arunachal Pradesh, North-East India. *Journal of Food Security*, 5(4), 113-119.
7. Biswas, S., Hansda, C. K., Singh, N., Malla, V. R., & Pal, A. K. (2022). Determinants of nutritional status among scheduled tribe women in India. *Clinical Epidemiology and Global Health*, 17, 101119.
8. Arlappa, N., Balakrishna, N., Brahman, G. N. V., & Vijayaraghavan, K. (2005). Nutritional status of the tribal elderly in India. *Journal of Nutrition for the Elderly*, 25(2), 23-39.
9. Raju, S., Thomas, P., & Rashmi, R. S. (2015). Nutritional status of tribal children in India: an overview. *Int. J. Dev. Res*, 5, 5276-5278.
10. Kupputhai, U. (1993). Kupputhai, U. & Mallika, N.: Nutritional Status of Adult Women Belonging to Khond, Gadaba and Porja Tribes of Andhra Pradesh. The Indian Journal of Nutrition and Dietetics. July 1993. 30 (7). p. 173-179. *Nutrition and Dietetics*, 30(7), 173-179.
11. Nayak, M. S. D. P., & Sreegiri, S. (2016). A study on nutritional status of tribal women in Visakhapatnam district, Andhra Pradesh, India. *Int J Community Med Public Health*, 3(8), 2049-2053.
12. Nayak, M., & Sunita, S. (2017). A study on dietary habits and Nutrient intake of tribal women in ITDA Paderu division of Visakhapatnam District, Andhra Pradesh. *J Community Health Manage*, 4, 100-5.
13. Laxmaiah, A., Mallikharjuna Rao, K., Hari Kumar, R., Arlappa, N., Venkaiah, K., & Brahman, G. N. V. (2007). Diet and nutritional status of tribal population in ITDA

- project areas of Khammam district, Andhra Pradesh. *Journal of Human Ecology*, 21(2), 79-86.
14. Ghosh-Jerath, S., Singh, A., Magsumbol, M. S., Lyngdoh, T., Kamboj, P., & Goldberg, G. (2016). Contribution of indigenous foods towards nutrient intakes and nutritional status of women in the Santhal tribal community of Jharkhand, India. *Public health nutrition*, 19(12), 2256-2267.
 15. Ghosh-Jerath, S., Singh, A., Lyngdoh, T., Magsumbol, M. S., Kamboj, P., & Goldberg, G. (2018). Estimates of indigenous food consumption and their contribution to nutrient intake in Oraon tribal women of Jharkhand, India. *Food and nutrition bulletin*, 39(4), 581-594.
 16. Ghosh-Jerath, S., Kapoor, R., Barman, S., Singh, G., Singh, A., Downs, S., & Fanzo, J. (2021). Traditional food environment and factors affecting indigenous food consumption in munda tribal community of Jharkhand, India. *Frontiers in Nutrition*, 7, 600470.
 17. Ghosh-Jerath, S., Kapoor, R., Singh, A., Downs, S., Barman, S., & Fanzo, J. (2020). Leveraging traditional ecological knowledge and access to nutrient-rich indigenous foods to help achieve SDG 2: an analysis of the indigenous foods of sauriapaharias, a vulnerable tribal community in Jharkhand, India. *Frontiers in Nutrition*, 7, 61.
 18. Rokade, S., Mog, M., & Mondal, N. A. (2020). Nutritional status among tribal women in Maharashtra, India: Spatial variations and determinants. *Clinical Epidemiology and Global Health*, 8(4), 1360-1365.
 19. Gole, U. (2015). Nutritional status of the Oraon tribes of Jashpur District, Chhattisgarh. *International Journal of Scientific and Research Publications*, 91.
 20. Rajak, J. (2016). Nutritional and socio-economic status of Saharia tribes in Madhya Pradesh. *Int J Hum SocSci*, 6(1), 79-85.
 21. Chakma, T., Meshram, P. K., Rao, P. V., Singh, S. B., & Kavishwar, A. (2009). Nutritional status of Baiga—a primitive tribe of Madhya Pradesh. *The Anthropologist*, 11(1), 39-43.
 22. Shirisha, P. (2019). Socioeconomic determinants of nutritional status among 'Baiga' tribal children In Balaghat district of Madhya Pradesh: A qualitative study. *PloS one*, 14(11), e0225119.
 23. Kumar Tiwari, M., Sharma, K. K. N., Bharati, S., Kumar Adak, D., Ghosh, R., & Bharati, P. (2007). Growth and nutritional status of the Bharia—A primitive tribe of Madhya Pradesh. *Collegium antropologicum*, 31(1), 95-101.

24. Jaiswal, A. (2018). Nutritional and health status evaluation of tribes of Uttar Pradesh: An anthropological dimension. *Global Journal of Archaeology and Anthropology*, 6(2), 1-6.
25. Mittal, P. C., & Srivastava, S. (2006). Diet, nutritional status and food related traditions of Oraon tribes of New Mal (West Bengal), India. *Rural and Remote Health*, 6(2), 1-11.
26. Bisai, S., & Bose, K. (2009). Undernutrition in the Kora Mudi tribal population, West Bengal, India: a comparison of body mass index and mid-upper-arm circumference. *Food and nutrition bulletin*, 30(1), 63-67.
27. Bose, K., Ganguly, S., Mamta, H., Mukhopadhyay, A., & Bhadra, M. (2006). High prevalence of undernutrition among adult Kora Muditribals of Bankura district, West Bengal, India. *Anthropological Science*, 114(1), 65-68.
28. Joshi, K., Moarana, G., & Jeeva, J. C. (2016). Assessment of nutritional status of tribal children: a case of Bhumija Munda tribe of Mayurbhanj.
29. Rao, K. M., Kumar, R. H., Venkaiah, K., & Brahmam, G. N. V. (2006). Nutritional status of Saharia-A primitive tribe of Rajasthan. *J Hum ecol*, 19(2), 117-123.
30. Priyadarshini, R. D., & Beatrice, D. A. (2021). Nutritional profile of Kolagur tribal women in Yercaud, Tamil Nadu, India: An exploratory study. *International Journal of Advanced Medical and Health Research*, 8(2), 63-69.
31. Panda, A. K., Bisht, S. S., Lakra, S., Kumar, A., Kerketta, A., Mishra, R., ... & Kerketta, S. (2022). Folklore use of wild fruits by the Oraon tribe of Sarguja district of Chhattisgarh, India. *Ethnobotany Research and Applications*, 24, 1-16.
32. Jeeva, S. (2009). Horticultural potential of wild edible fruits used by the Khasi tribes of Meghalaya. *J Horticulture*, 1(9), 182-192.
33. Chauhan, S. H., Yadav, S., Takahashi, T., Łuczaj, Ł., D'Cruz, L., & Okada, K. (2018). Consumption patterns of wild edibles by the Vasavas: a case study from Gujarat, India. *Journal of ethnobiology and ethnomedicine*, 14, 1-20.
34. Adhikari, T., Yadav, J., Tripathi, N., Tolani, H., Kaur, H., & Rao, M. V. V. (2021). Do tribal children experience elevated risk of poor nutritional status in India? A multilevel analysis. *Journal of Biosocial Science*, 53(5), 683-708.
35. Tekale, N. S. (2006). Health and nutrition status of Warli tribal children in Thane district of Maharashtra. In *InProceeding of National Symposium on Tribal Health* (pp. 21-23).

36. Kumar, A., Jeeva, J. C., Sarkar, A., Sahoo, B., & Srivastava, S. K. (2019). Nutritional status of children in the Aspirational Districts of Odisha, India.
37. Chandra, A., Chakrabarti, S., Mallik, S., & Bhattacharyya, N. (2021). Assessment of under nutrition among under 5 tribal children in a rural area in West Bengal. *Journal of Family Medicine and Primary Care*, 10(10), 3935-3938.
38. AvijitDebnath, A. D., &NairitaBhattacharjee, N. B. (2016). Understanding malnutrition of tribal children in India: the role of women's empowerment.
39. Soumitra Ghosh, S. G., &Varerkar, S. A. (2019). Undernutrition among tribal children in Palghar District, Maharashtra, India.
40. Kshatriya, G. K., & Ghosh, A. (2008). Undernutrition among the tribal children in India: tribes of Coastal, Himalayan and Desert ecology. *AnthropologischerAnzeiger*, 355-363.
41. MitashreeMitra, M. M., Kumar, P. V., Chakrabarty, S., &Bharati, P. (2007). Nutritional status of Kamar tribal children in Chhattisgarh.
42. Sukhdas, G., Challa, S., Bhatia, P., Rao, A. R., & Rao, P. K. (2014). Nutritional status of tribal children in Andhra Pradesh. *International Journal of Medical Research & Health Sciences*, 3(1), 76-79.
43. Das, N. K., Barbhuiya, A. F., & Sarma, R. (2020). Nutritional status of the rabha tribal children of Udalguri district of Assam, India. *Eur J MolClin Med*, 7, 4794-802.
44. ShilpiSaha, S. S., &Sil, S. K. (2018). A comparative study of growth and nutritional status between tribal and non-tribal girls of Tripura.
45. Shrikant, S., Swati, S., &Upadhyay, A. K. (2019). Socio-economic inequality in malnutrition among children in India: an analysis of 640 districts from National Family Health Survey (2015-16). *International Journal for Equity in Health*, 18(203).
46. Yogesh Jain, Y. J., Raman Kataria, R. K., Sushil Patil, S. P., Suhas Kadam, S. K., Anju Kataria, A. K., Rachna Jain, R. J., ... &SharayuShinde, S. S. (2015). Burden & pattern of illnesses among the tribal communities in central India: a report from a community health programme.
47. Balgir, R. S. (2011). Genetic disease burden, nutrition, and determinants of tribal health care in Chhattisgarh state of Central-East India: A status paper. *Journal (On-line/Unpaginated)] Online Journal of Health and Allied Sciences*.