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Level of consumption of nutrients among tribal population in Satpuda Mountain region of Jalgaon district (MS)

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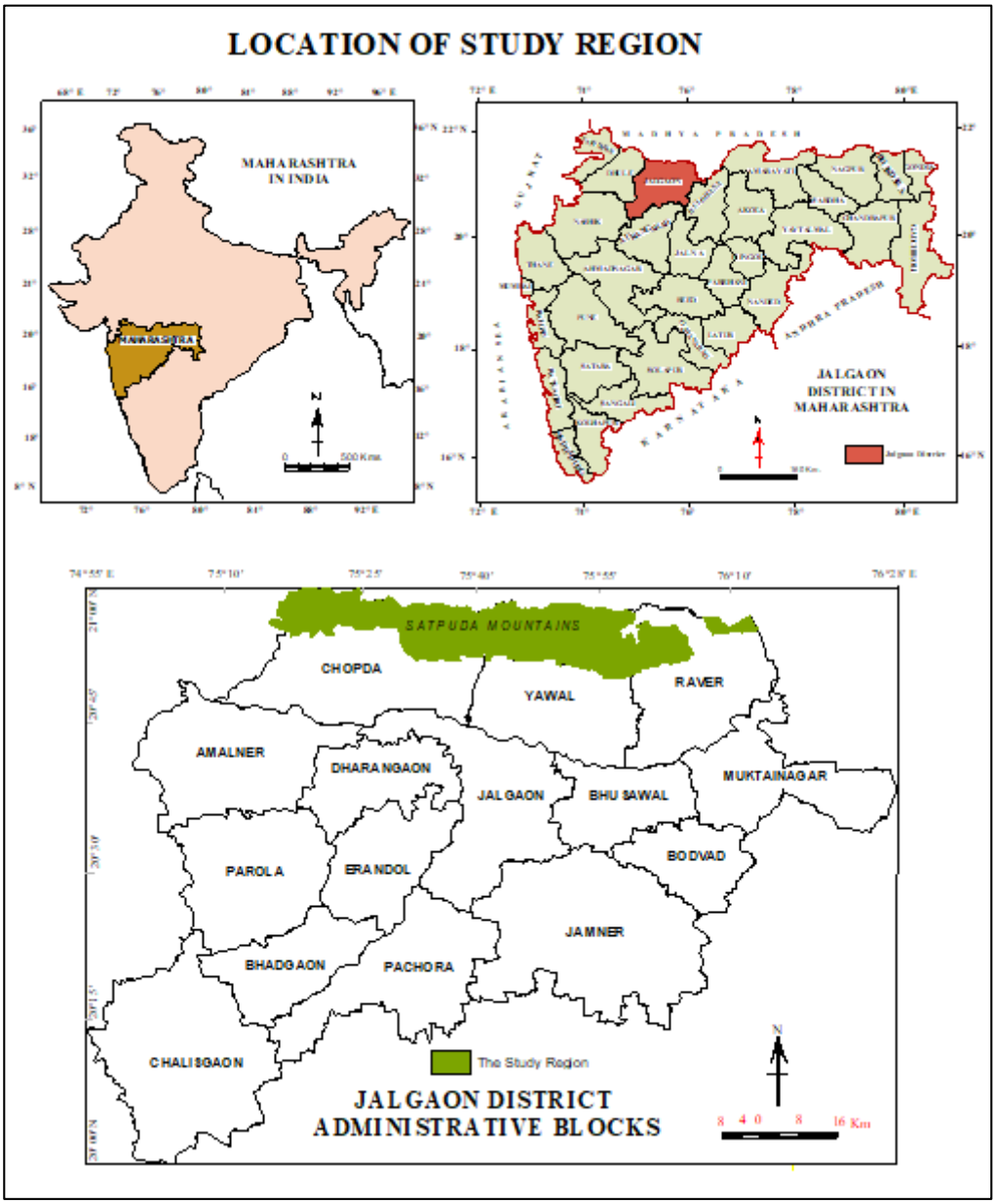
Abstract
Life cannot be sustained without adequate nourishment. Malnutrition is one of India's most serious and persistent problems. While nutrition outcomes across India are poor, they are typically worse in the regions which are known as tribal and backward areas. Tribal communities are isolated from general population and are socially and economically disadvantaged. A general feature of the tribal population of the country is their exclusive geographical habitat. In view of their habitat and dietary habits, they often distinguish themselves from other population groups. The tribal populations are at risk of under nutrition because of their dependence on primitive agricultural practices and uncertainty of food supply. Therefore in the present paper an attempt has been made to evaluate and assess the consumption level of various nutrients and correlate with the RDA recommended by ICMR. To evaluate the consumption level primary data of food habit has been collected through household survey. Collected data has been analyzed and nutritive values have been calculated for the study region. Majority of the population depend on cereals to meet their nutrient requirement. Level of consumption of nutrients among the tribal population found low to the standard requirement of RDA.

Keywords: Nutrients, consumption, tribal, food habit, cereals

1. Introduction
The availability of food and nutrition is more unevenly distributed in the world. In fact, there is significant nutritional gap between developed and developing nations. According to the United Nations Food and Agriculture Organization (FAO), some 3100 calories per head per day on the average were available in the developed countries. Contrary to this, in the developing countries, per head per day availability of calories was 2200. A much bigger problem in India is malnutrition i.e. non-availability of nutritionally adequate diet in quantity or quality, it is often referred to as 'hidden hunger'. While nutrition outcomes across India are poor, they are typically worse in the regions which are known as tribal and backward areas. Tribal communities are isolated from general population and are socially and economically disadvantaged. A general feature of the tribal population of the country is their exclusive geographical habitat.
The third round of national nutritional monitoring bureau (NNMB) survey completed in 2008-09 found that the mean intake of most foodstuffs and nutrients by tribal people continued to be below the Recommended Daily Allowances (RDA) by the Indian Council of Medical Research and had in fact reduced over the years, across all age groups and for both genders. This is worrisome and maybe indicative of rising food insecurity or a change in dietary habits. There are huge disparities between the nutritional status of tribal children and those belonging to non tribals.

2. Study Area
The tribal area of Jalgaon district is a peculiar region with distinct physical setting and socio-economic conditions. It is a region flanked by Narmada valley to the north and Tapi valley to the south. Satpuda hills are rise abruptly above the plain from 200 to 700mts. The entire study region is therefore, mountainous one. The study region lies along the northern boundary of Maharashtra State. The study region occupied major parts of Chopda, Yawal and Raver tehsil of Jalgaon district (Map 1).

There are about 35 tribal villages or *padas* (micro settlement) are spread in the study region. This region is mainly inhabited by '*Bhil-pawra'* tribal community. The study region lies between 20^0 50' North and 21^0 North latitudes and 75^0 15' East and 76^0 15' East longitudes.



Map 1: Location of study region

3. Objectives

The present study has been carried out with the specific objectives mentioned below.

1. To examine the nutrients available to the population from different food groups.
2. To assess the current status of food and nutrient intake among the tribal population.
3. To assess the real nutritional value of the diets of scheduled tribe communities.

4. Data Base and Methodology

The study is based both primary and secondary data. The details of the data and their sources are as under…

i. There are 35 villages located in the Satpuda mountain having more than 85 percent tribal population. In which 10 percent random sampling has been collected from all the 35 tribal villages for the study.

ii. For the purposes of this study, primary data were collected from a household survey of 638 tribal households across three tehsils namely Chopda, Yawal and Raver from the study region.

iii. Nutritional requirement of the population has been recorded from the manual on 'Dietary Guideline for Indians 2010' published by ICMR, New Delhi and National Institute of Nutrition, Hyderabad.

iv. Food habits of the inhabitants has been studied with the help of structured questionnaire and door to door survey in the study area to assess the food habit, nutritional status etc.

5. Discussion

On the basis dietary data collected during the field survey, food factors per head per day for Satpuda region of Jalgaon district is prepared (Table 1) and actual intake of various nutrients is calculated (Table 2).

During the field visit it is observed that the actual consumption of wheat, jowar, corn, bajara and pulses in the satpuda region is 46.01, 87.28, 83.68, 61.23 and 44.87 gm respectively. Each consumed foodstuff is converted into various nutrients based on nutritive values of common foods consumed in diet.

Table 2 is showing per head per day consumption of nutrients and standard requirement is prepared on the basis of consumed foodstuff by the villagers. The total deficiency of calories is calculated as -39.46 percent for the Satpuda region. Inadequate intake of calories in children leads to marasmus. In which underweight and shriveled pinched face are common symptoms found in tribal area. Protein is deficient in the diet of the tribal people by 6.85 percent.

Table 1: Food Factors Per head per day in Satpuda Region Jalgaon district (gm)

Food Stuff	Per head per day (gm)	Calories (KCL)	Protein (gms)	Fats (gms)	Carbohydrate (gm)	Calcium (mg)	Phosphorus (mg)	Iron (mg)	Thiamine (mg)	Riboflavin (mg)	Niacin (mg)	Vitamin C (gm)
Wheat	46.01	156.88	5.56	0.78	31.93	22.08	194.61	5.29	0.23	0.13	1.97	0.00
Jowar	87.28	314.23	9.07	1.66	63.36	21.82	258.36	5.06	0.26	0.18	2.44	0.00
Corn	83.68	286.20	9.29	3.01	55.40	8.37	291.22	1.67	0.35	0.08	1.17	0.00
Bajra	61.23	220.45	6.36	1.16	44.45	15.31	181.25	3.55	0.18	0.13	1.71	0.00
Rice	26.70	92.12	1.82	0.14	20.88	2.67	42.72	0.83	0.02	0.02	0.50	0.00
Moong	13.40	46.63	3.29	0.16	8.03	10.05	54.27	1.15	0.10	0.02	0.32	0.00
Tur	14.13	47.38	3.15	0.24	8.14	10.32	42.96	0.83	0.06	0.07	0.37	0.00
Urd	4.17	14.46	1.00	0.06	2.48	6.42	16.04	0.37	0.02	0.02	0.08	0.00
Chana	13.17	47.40	2.25	0.70	8.02	26.60	41.08	1.35	0.04	0.06	0.27	0.39
Mutton	17.12	33.21	3.16	2.27	0.00	25.67	25.67	0.43	0.03	0.04	1.16	0.00
Fish	10.16	36.70	8.49	0.11	0.00	6.17	35.17	1.43	0.01	0.01	0.49	0.00
Eggs	3.83	6.63	0.51	0.51	0.00	2.31	8.45	0.08	0.01	0.00	0.01	0.04
Milk	28.10	32.88	1.21	2.47	1.43	59.00	36.52	0.06	0.01	0.02	0.03	0.28
Oil	3.77	33.90	0.00	3.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sugar	15.07	59.97	0.02	0.00	14.97	1.81	0.15	0.00	0.00	0.00	0.00	0.00
Chilee	4.33	1.08	0.05	0.01	0.18	0.43	1.31	0.01	0.01	0.00	0.00	5.94
G. nut	1.45	7.96	0.35	0.58	0.30	0.73	5.66	0.02	0.01	0.00	0.21	0.00
Ghee	0.42	3.75	0.00	0.42	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00
Palak	7.77	2.02	0.15	0.05	0.17	5.67	1.63	0.22	0.01	0.00	0.04	2.17
V. Fruit	8.76	8.49	0.14	0.01	1.98	0.88	3.50	0.06	0.01	0.00	0.10	1.49
Tomato	3.03	0.61	0.03	0.00	0.03	0.21	0.08	0.03	0.03	0.00	0.00	0.13
Total		1452.93	55.89	18.12	261.74	226.50	1240.67	22.44	1.59	0.79	10.88	10.44

Source: Household Survey 2019.

Table 2: Satpuda Region Jalgaon District: Percent Departure of Per Head Per Day Food Nutrients Consumption From Standard Requirement

Food Nutrients	Actual intake	Standard requirement	Deficiency or Surplus	Percent departure from standard
Calories	1452.93	2400	-947.07	-39.46
Protein (gm)	55.89	60	-4.11	-6.85
Fat (gm)	18.12	25	-6.88	-27.53
Carbohydrates (gm)	261.74	440	-178.26	-40.51
Calcium (mg)	226.50	400	-173.50	-43.37
Phosphorus (mg)	1240.67	1400	-159.33	-11.38
Iron (mg)	22.44	20	2.44	12.20
Thiamine (mg)	1.59	1.20	0.39	32.63
Riboflavin (mg)	0.79	1.30	-0.51	-39.41
Niacin (mg)	10.88	16.00	-5.12	-31.99
Vitamin C (mg)	10.44	50.00	-39.56	-79.12

Source: Compiled by author.

The standard requirement of carbohydrates is 440 gm per head per day. It is observed that the intake of carbohydrates (261.74 gms) of the villagers is deficient by 43.37 percent. Coronary-artery and appendicitis are malnutritional deficiency associated with deficiency of carbohydrate. During survey people have reported that about the suffering from appendicitis.

In the diet of villagers deficiency of calcium is observed around 43.37 percent. Teeth decay associated with calcium deficiency is comely observed during the survey in the study region. The standard requirement of riboflavin is about 1.30 mg and actual intake of riboflavin is observed about 0.51 mg per head per day in the region. It is observed that riboflavin is 39.41 percent deficient in the diet of tribal people. Due to riboflavin deficiency diarrhea, sore mouth and tongue erosions at angles of mouth are found in ill fed children. During the survey it is observed that the maximum number of ill fed children is the victim of erosions at the angle of the mouth. This is due to the deficiency of riboflavin.

Niacin deficiency is common in tribal communities settled in the Satpuda mountain. The total niacin deficiency was found about 31.99 percent, pellagra is very common disease found in areas of economic depression having traditional corn diet. Among the cereals, area under corn rank second after jowar in this region. Along with pellagra, gastrointestinal tract, skin diseases and poor health are also associated with corn culture.

Vitamin ‘C’ deficiency is alarming in the diet of villagers. The standard requirement of vitamin ‘C’ is 50 mg. while

actual intake of vitamin 'C' is about 10.44 mg. About 79.12 percent is the deficiency of vitamin. Due to the deficiency of vitamin 'C', scurvy is common disease. Weight loss, weakness, irritability, non specific pains joint aches are the main symptoms of scurvy. During the survey, villagers have reported that such types of pains are ignored by the villagers.

6. Conclusion

The intakes of most of the foodstuffs were below the RDA. Even though, the consumption of protective foods, such as green leafy vegetables, milk and milk products, fruits, sugar and jaggery increased marginally, the consumption levels were grossly deficient compared to recommended levels. The intake of almost all the nutrients in Satpuda region, were below the recommended levels. From the above study, it is concluded that nutritional status of the tribal people in this region is very poor. The villagers in the surveyed villages are consuming 21 food items out of which four items (jowar, bajra, corn and pulses) are produced by villagers, remaining 17 items are purchased. Their economic condition is so poor. On one hand the food stuff which they produce have insufficient quantity of calories, on the other hand, because of poverty the intake of remaining food stuff are insufficient to meet the standard requirement. Large scale agriculture and crop production is very important to satisfy the food needs of every people in the study region.

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8. References

1. Gopalan C *et al*, Nutritive Value of Indian Foods, Hyderabad (India): National Institute of Nutrition, 1990.
2. National Nutrition Monitoring Bureau, Diet and Nutritional status of rural population (2005-06), National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, 2006.
3. Shinde Dhanashri. Nutritional Status of Population in South Konkan Region of Maharashtra, Transactions, Journal of the Institute of Indian Geographers, 2012; 34(1).
4. Nayak LT. Identification of Food Security Regions in Karnataka for Sustainable Development, Transactions, Journal of the Institute of Indian Geographers, 2012, 34(2).
5. The National Food Security Bill. India Ministry of Law and Justice. The Government of India, viewed September 2014 http://indiacode.nic.in/acts-in-pdf/ 202013.pdf.
6. Kaushik Nancy, Rai SC. Food Security in Drought Prone Regions of India, Annals of the National Association of Geographers India, Dec. 2014; XXXIV(2).
7. Timmer C, Peter Food Security in Asia and the Pacific: The Rapidly Changing Role of Rice. Asia & the Pacific Policy Studies 2014; 1(1):73-90. doi: 10.1002/app5.6,
8. Johani Xaxa. Problem of Food Security: A brief Analysis of Tribal Area in India, International Journal of Scientific and Research Publications, 2014; 4(11): 2014, ISSN 2250-3153.
9. Food and Nutrition Security Analysis, India. Ministry of Statistics and Programme Implementation & The World Food Programme, Government of India, New Delhi, 2019.