



Plants used by tribals for averting malnutrition among women and children of the Dangs district of Gujarat

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Abstract

The Global Nutrition report states 189.2 million people are undernourished in India and 34.7 per cent of the children aged under five in India are stunted. It further reports that 20 per cent of India's children under the age of 5 suffer from wasting, meaning their weight is too low for their height. The people belonging to scheduled tribe are more vulnerable to malnourishment. In India, Tribal people constitute 8.6% of the nation's total population, according to the 2011 census. Dang district of Gujarat is predominantly inhabited by tribals. As per the 2011 census 94.65 percent of its population is belonging to schedule tribe. To keep themselves physically fit, traditionally they are using a number of plants as food and food additives. There are certain plants used during pregnancy and lactation period to keep the women healthy. Present paper details few plants species having special nutritious value that are being used by the tribal population of the Dangs district of Gujarat for their women and children.

INTRODUCTION

Malnutrition is a serious health issue especially among women and children. As per current status of global nutrition report (2020), globally of the total children under 5 years of age, 149.0 million are stunted, 49.5 million are wasted and 40.1 million are overweight. The developmental, economic, social, and medical impacts of the burden of malnutrition are serious and long lasting, for individuals and their families, for communities and for countries. According to 'The State of Food Security and Nutrition in the World, 2020' report 14 per cent of India's population is under nourished. The report states 189.2 million people are undernourished in India and 34.7 per cent of the children aged under five in India are stunted. It further reports that 20 per cent of India's children under the age of 5 suffer from wasting, meaning

their weight is too low for their height (Global Nutrition Report, 2020).

In addition to all this, as per this report, India has been ranked 102 out of the qualifying 117 countries that were assessed for status of malnourishment. The GHI comprehensively tracks and measures hunger across the world and India's rating in the 2019 year has been poor with a score of 30.3 which according to their guidelines, falls in the 'serious' category (FAO, IFAD, UNICEF, WFP and WHO, 2020). Malnourishment affects more seriously to the vulnerable categories of people including scheduled caste and scheduled tribe women and children (NFHS4, 2018). Tribal people constitute 8.6% of the nation's total population counting over 104 million people according to the 2011 census. It is reported that in India, 44% of tribal children under five years of age are stunted, 45% are underweight and 27% are wasted (NFHS4,

2018). As per the Census (2011) the Scheduled Tribes (STs) constituted 14.75 per cent of the total population of Gujarat (Census of India, 2011). According to the NFHS-5 report, the proportion of the malnourished children under five years of age, among those surveyed, increased in Gujarat in 2019-20 as compared to 2015-16. However, in 2019-20, in case of stunting, there was a marginal increase of 0.5 per cent in children under 5 years – from 38.5 per cent in 2015-16 to 39 per cent in 2019-20. Also there was increase in severe wasting over the earlier reporting period from 9.5 per cent in 2015-16 to 10.6 per cent in 2019-20. When it comes to the proportion of underweight and overweight children, Gujarat has again seen an increase. While about 39.3 per cent of the children surveyed were underweight in 2015-16 which was an improvement from the NFHS-3 figure of 44.2 per cent, the proportion increased to 39.7 per cent in 2019-20, showing an increase of 0.4 per cent in five years (NFHS4, 2018).

As far as anaemia in children under five years age is concerned Gujarat is the poor performing state in the country. Anaemia among children aged 6-59 months increased to 79.7 per cent from 62.6, an increase of 17.1 per cent in five years. Whereas, anaemia in non-pregnant women increased to 65.1 per cent from 55.1 per cent and in expecting women it increased to 62.6 per cent from 51.3 per cent. Gujarat was among the top 15 Anaemic states of India, with a higher percentage of anaemic women than the national average of 53.1 per cent (Nutritional Atlas, 2016).

It is generally believed that malnutrition is because of unavailability of food. However, it can be caused due to a number of factors including non-availability of balanced diet, deficiency of several essential vitamins and minerals, food habit, infestation of intestinal parasites etc. The tribal communities, over several centuries, have developed specialized set of practices using wild forest resources to fulfil their daily dietary needs and nutrition in their routine life and also during pregnancy and lactation of mothers and young children (Bhogaonkar *et. al*, 2010). These wild plants have not only proved to be the source of food for daily consumption but also as a key resource during extreme situations such as famines as well (Chothe *et al*, 2014; Nene, 2004). Apart from the dietary aspect, the village doctors, locally called as Vaidu, who are aware of the medical properties of the wild edibles, have been successful in providing remedies for several ailments at the village level (D'souza, 1999; Palekar, 1993). Realizing this

significance, several ethno botanical studies have been undertaken to tap the specific nutraceutical and pharmaceutical potential (Dhore *et. al*, 2012; Yesodharan and Sujana, 2007; Oak *et. al*, 2015; Deshmukh and Waghmode, 2011). However, other than their nutraceutical and pharmaceutical potential very few studies have been found to document other interesting information on traditional usage. This information has been sidelined due to lack of scientific knowledge and documentation (Garud *et. al*, 2010; Patil *et. al*, 2014; Pranjale and Dubey, 2015). Hence, there is a huge gap in understanding the importance and significance of this secondary information and the applications of the same. Thus the need to document the perception of the communities becomes necessary as it would help in improving the understanding of these wild plant species and their use by pregnant and lactating mothers so that the serious problem of malnourishment can be averted sustainably. Moreover, lack of documentation of such interesting observations may result in the extinction of this traditional knowledge. Various reports also noted that many wild edibles are nutritionally rich and can supplement nutritional requirements, especially vitamins and micronutrient (Awas, 2007). Nutritional analysis of wild vegetable demonstrate that their nutritional quality is comparable and in some cases they are superiors to domesticated varieties (Saeema, 2015). The tribal of the Dang district also make use of many herbs in the form of its leaves, roots, fruits etc. in their diet. They also consume several plants during pregnancy and during lactation period to keep the mother healthy. Special recipes are prescribed for children below five years of age to prevent and treat a number of ailments. As per the knowledge of the present researcher there are no reports enumerating the plants that are used and prescribed for pregnant and lactating women and children below five years age to keep them healthy. Therefore, an attempt has been made to document such plants and the recipes used by the tribal women and children from the Dang district of Gujarat.

MATERIALS AND METHODS

During the course of study a number of extensive and periodical surveys were conducted between 2016-2020 in various villages of the Dang district. During each visit elder men and women were contacted along with local healers (vaidu's) to document the information required for the study. The respondents were requested to part with sample of plants that they are using or show the plants

growing naturally. The sample of plants and plant parts so obtained were identify by renowned taxonomist Prof. (Dr.) M.H.PARBIA (retired professor) of the Department of Bioscience of Veer Narmad South Gujarat University, Surat. The information so collected is presented in tabular form. During the visit while collecting the information, voice recorder was also used with prior verbal consent of the respondent to record and later use the information provided by them.

RESULTS AND DISCUSSIONS

During the course of interaction with the respondents it was noted that the tribal people use a number of plants in their diet. Most of them are seasonal and some of them have been associated with their culture. In the following table only a few of such plants are presented that are used by the locals for pregnant and lactating women. The table also details the part of the plants used and the recipe for preparation. During the discussion with the respondents it was recorded that the use of these and many other plants by the pregnant and lactating women has been reduced due to various reasons including lesser availability of the plants and changed food habits. Thus, once staple food of tribal, *Eleusine or Ragi*, providing iron, calcium and phosphorus in large quantities, is replaced by wheat available at a very cheaper rate from the Public Distribution System (PDS).

Conclusion

Traditional vegetables and tubers are valuable source of nutrition. They provide good nutrition at lower cost. These wild vegetable and grain are easy to cook without addition of any spices, gives very good taste even without cooking oil and food additives. They are inexpensive and high quality nutritive.

Wild plants may be herbaceous, shrub or trees. The locals have knowledge of their habitat and use. Most of the plants listed above are ephemerals and are found only during monsoon. The locals mark their habitat and collect them later when required. During the conversation with the respondents it was noted that the young generation do not like to eat these traditional food items that can keep them healthy. Also the availability of plants is decreasing due to deforestation and different land use pattern. There is need to preserve and plant these wild edibles and at the same time popularise their use

among locals to prevent malnourishment among women and children on a sustainable basis.

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Table 1 – List of commonly available plants which are used by the locals for pregnant and lactating women in tribal areas of Dangs, Gujarat, India.

Botanical name/ family	Part used	Recipes	Uses by local people
<i>Ipomoeapes-tigridis</i> L. Convolvulaceae	Tuber	Tubers are eaten as raw or boiled or cooked as vegetable.	It is used to improve breast milk and also as tonic during pregnancy and lactation.
<i>Ipomoea Spp.</i> Convolvulaceae	Tuber, Leaves.	Tuber are eaten as raw	It is use for medicinal purpose as well as tonic
<i>Asparagus racemosus</i> Willd. Asparagaceae	Root, Shoot.	White tuberous roots are eaten raw and crushed root also taken with milk. Tender shoots are cooked as vegetable	It is used as tonic, improves breast milk. Useful in increasing haemoglobin.
<i>Chlorophytum borivillianum</i> Santapau and R.R.Fern Asperagaceae	Tuber, Root, Leaves.	Leaves are cooked as vegetable also used raw alone. Root powder used with milk.	Used as tonic, improve breast milk.
<i>Pueraria tuberosa</i> (Wild)DC. Fabaceae	Tuber, Rhizome.	Tubers and rhizomes are boiled and eaten	Improve breast milk and as general tonic and improve body mass.
<i>Hemidesmus indicus</i> (L.) Sult. Apocynaceae	Leaves, Root.	Leave cooked as vegetable and roots used in preparation of tea	General tonic.
<i>Dioscorea wallichii</i> Hook.f. Dioscoreaceae	Tuber	Tubers are eaten raw, roasted ,boiled or cooked. Before the use washed overnight thoroughly in running water to remove bitterness.	Used as food supplement, very nutritious. Used as tonic.
<i>Eleusine coracana</i> L. Poaceae	Grain	Used to make roti, or for preparation of pudding with milk and salt	Highly nutritive supplying Fe, Ca and P for pregnant women and their child.
<i>Oryza sativa</i> L. Grasses (Phutiya bhat.)	Grain	Pounding rice in mortar of teak wood and pastel of khair. The flour mixed with water and salt and boiled.	Restores physical fitness after delivery and increases breast milk.
<i>Celosia argentea</i> L. Amaranthaceae	Leaves, Seed,	Young leaves are cooked as vegetable and seeds are used in sweet preparation.	Nutritional for pregnant and lactating women
<i>Enstete superbum</i> (Roxb.) Cheesuran. Musaceae	Rhizome, Inflorescence, Fruit.	Rhizomes are boiled and eaten, inflorescence cooked as vegetable with tamarind water to remove bitterness. young fruits are pickled.	Healthy diet for women and children.

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