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FOOD INTAKE AND DIETARY ASSESSEMENT OF BHIL TRIBE CHILDREN IN SUWANA BLOCK, BHILWARA

D. JOSHI* AND P. K. RAGHAV
Department of Food and Bio Technology, Jayoti Vidyapeeth Women's University, Jaipur (302003) Rajasthan, India [DJ, PKR].
[*For Correspondence: E-mail: darshikajoshi24@gmail.com]

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ABSTRACT

The present study was planned with the objective food intake and dietary assessment of Bhil tribe children in Suwana Block, Bhilwara. The study was conducted in Bhilwara district of Rajasthan state. The total sample consisted of 500 Bhil tribe children comprising of 237 boys and 263 girls aged between 4 to 12 year old in Suwana block Bhilwara. Fifty children from each village from each gram panchayat namely Bholi, Kodukota, Gurla, Jodhdas and Hameergarh (Center, East, West, North, and South) were approached. Consumption of cereals was quiet high among in Centre, East, West, North and South zone in Suwana Block. Data revealed that 100% of weekly one glass consumption of milk is given by Mid-day meal (MDM). Consumption of desi ghee in Suwana Block samities on daily, weekly and monthly basis were negligible. Consumption of other vegetables on daily basis was negligible except green chillies and tomato. Green chili and tomato were consumed by 100 per cent of families daily in Suwana Block generally as mix vegetables in dinner. Mostly children consumed banana in Mid-day Meal (MDM) in school - Once in a week distributed by Mid-day meal. The data revealed that Recommended Dietary Intake (RDI) intake of children was substantially inadequate (<50%) in all food groups, whereas intake of sugar was marginally adequate (92%). The results of the study indicated that there were significant differences with respect to certain food groups (pulses, green leafy vegetables, roots and tubers, milk and milk products, fruits, sugar and egg).

Keywords: Food intake; mid-day meal (MDM); recommended dietary intake (RDI).

INTRODUCTION

Indian tribal population account for 8.6% of the total population of the country, numbering 104.28 million, according to the 2011 census [1]. These tribal people reside in approximately 15% of the country's area. Indian society is checked by disparity, separation, exploitation, mastery and hardship. What is indeed more striking is the reality that such upsetting societal conditions are

generally based on the lines of caste, tribe, religion, dialect, locale, etc. Indeed children have been incapable to elude the all-pervasive impacts of such societal conditions. Tribals are one of the foremost abused and denied areas of the Indian society. Conducting a study to chart nutritional profile of this most vulnerable group will provide a valuable insight which can be used in future studies.

Bhil is an ethnic group of people in Western India. Bhils are also spread in the Tharparkar District of Sindh, Pakistan. They speak the Bhil languages, a sub division of a group of the Western Zone of the Indo-Aryan languages. They cultivate land, and both men and women participate in agricultural activities. It is also commonly known as the desert dwellers. Bhils are the largest tribal group in the Aravali belt of Rajasthan, they are the oldest inhabitants of Indian continent. The Bhils are largely concentrated in the area around Chittorgarh, Udaipur and Dungarpur in southern part of the state constituting 39 percent of the state's tribal population [2]. They live in unique physical, socio-economic and cultural environment, isolated from general population. In view of their habitat and food habits, they form a distinct group compared to other populations. Their food intake is influenced by vagaries of nature, with large seasonal variations, depending upon availability of agricultural and forest produce.

The choice of food is deeply influenced by life style of an individual and also in conditions in which he is living. In a developing country like India, poverty undoubtedly constitutes a major factor for malnutrition in children, but lack of awareness of what constitutes a balanced diet is also a factor, which needs to be considered. As children are future of society and mothers are guardian of future subsequently in arrange to guarantee sound establishment and secure future of any society wellbeing and sustenance of their children needs assurance. Food habits refers to why and how people eat, which food they eat, and with whom they eat, as well as the ways people obtain, store, use and discard food. Food habits of the people vary from one part of the geographical location to another depending upon proximity of sea, land, hill and desert. Local people are conditioned over time depending upon geographical, climatic and social condition as well as to the innate tendency based on availability of local resources, its proximity, accessibility and adequate availability of items in the extreme seasons. However the food habits are greatly influenced by thoughts, beliefs, notions, traditions and taboos of the society. Social factors and cultural practices in most countries have a very great influence on what people eat, on how they prepare food, on their feeding practices and on the foods they prefer. Nonetheless, cultural food practices are very rarely the main, or even an important, cause of malnutrition.

Such a state of development in tribal society is a combination of various factors that have a bearing on the well being of tribal/adivasi children. Malnutrition is one malaise afflicting the tribal children. Poverty, low literacy, unsafe drinking water, poor environment, lack of sanitation, lack of basic health services as well as traditional beliefs and customs add to malnutrition among tribal children . Widespread malnutrition exposes these children to infection and infectious diseases, resulting in high mortality among them [3].

Food quantity and quality are the most direct indicators of the collaboration between public health nutrition, agriculture and food security; understanding the extensive diversity and complexity of food systems of indigenous peoples and improving and strengthening these systems in the context of nutrition and health thus merit attention.

MATERIALS AND METHODS

The study was conducted in Bhilwara district of Rajasthan state. The Scheduled Caste and Scheduled Tribe population in Bhilwara district is 16.9 percent and 9.5 percent respectively. There are eleven block in Bhilwara district. List of block was obtained from the Block Development Officer (B.D.O.). From this list, one block was selected purposively which was dominated by tribals. Within Bhilwara District, Suwana block was chosen as it has highest concentration of Bhil tribe. Total 500 children, 50 children from each village from each gram panchayat namely Bholi, Kodukota, Gurla, Jodhdas and Hameergarh (Center, East, West, North, South) were

approached who were cooperative and willing to provide information regarding their food habits and consumption pattern. Data was collected through personal interview using a structured schedule prepared for the study and participatory rural appraisal (PRA).

Dietary survey: Food intake was calculated using 24 hour recall method. Type of food consumed was assessed and quantity of raw food was reported in grams.

Food intake: Balance diet for children (4-6 year, 7-9 year and 10-12 years) recommended by NIN-2010 was used to analyse the per cent adequacy of food intake, whereas calculation was done as follows:

$$\text{Per cent adequacy of food intake} = \frac{\text{Food intake}}{\text{Recommended dietary intake (RDI)}} \times 100$$

RESULTS AND DISCUSSION

Cereals: The overall mean intake of cereals was 166.1g/day. The cereals intake of children was found lower as compared to RDI but overall percent on children cereal adequate intake was 92.71 %. Cereals were the main source of energy in their diet. Among cereals, wheat was consumed daily by 100 percent families, whereas maize was consumed weekly in winter season. The result of present study was found to be statistically no significant difference. Regarding consumption of cereals, on tribals of Jharkhand district reported that the consumption of cereals was significantly higher among tribals which support the above statement [4].

Maize and wheat were main staple cereals consumed by all the children. Consumption of cereals was quiet high among in Centre, East, West North and South zone in Suwana block. In cereals, wheat was consumed by 100 per cent children in Suwana block in the form of chapatti. Maize was used for making *Raabadi* and roti mostly in winter season. *Raabadi* is prepared by cooking maize porridge/ flour in buttermilk. 100 percent consumption of rice was twice or thrice per week in the form of Khichdi (Dal +Rice) in MDM. None of the children in Suwana block consumed rice on daily basis.

Pulses: Pulses are the good source of protein for muscles in Indian diet. Overall inadequacy of children was 46.60 % of RDI which is low. Among pulses, data revealed that green gram, black gram and bengal gram dal were consumed by Bhil children know as Mix dal. Bengal gram and black gram were consumed by most of the children. Majority weekly consumption of mix dal was found in children in Suwana block. Maximum of the children in East (64 %) and South (54%) were consuming mix dal (add black gram and Bengal gram) on weekly basis. Pulses were sourced from market rather than cultivation therefore the consumption did not have enough variety. Similarly, lower intake of pulses by tribal women of Ranchi as compared to RDI [4]. Low intake of pulses in tribal of Rajasthan was confirmed in other studies [5].

Milk and milk products: Milk is not only good source of protein, but it also provides calcium and riboflavin. Requirement of calcium increases as age increases. Children consumed milk that was only provided by MDM in school and curd, buttermilk was consumed at home only. However, most of the children did not consume milk and milk products in study. Overall mean intake of milk and milk products was 156.23ml, which was 30.06 percent of RDI hence inadequate intake for children. Data revealed that 100% of weekly once consumption of milk was provided by MDM only and in minimum house available milk and milk products at home.

Root and tubers: Overall, adequacy was found 79.98 percent of RDI. Consumption of Potato, onion and Garlic was high. Children most frequently consume garlic. 100% children in Suwana block consume potato twice or thrice per week. Children consume onion in daily basis. 100% families in Suwana block consume garlic in the form of dal and vegetable and chutney.

Green leafy vegetables: Overall adequacy of children of green leafy vegetable is 75 percent of RDI. Among green leafy vegetables bathua, spinach, radish leaves, meethi leaves and amarnath were consumed as a form of bhaji by majority of

the families. Maximum green leafy vegetable were being consumed by maximum children in Suwana block. Consumption of green leafy vegetables was generally twice or thrice a week. Only Methi leaves consumption is 37% in both North and South on weekly basis. Green leafy vegetable is consumed only in winter season. It was also reported in an earlier study that only green leafy vegetables were being consumed in large quantity by a higher proportion of indigenous mass of Jharkhand [6].

Other vegetables: The overall other vegetables intake was 67.28 percent of RDI and found not significantly difference in children. Even amongst tribal of Madhya Pradesh and Chhattisgarh reported that, consumption of other vegetables; roots and tubers were also not up to the mark [7].

Bhils children were consuming low cost vegetables which were easily available in market and open field. The most commonly consumed other vegetables were green chillies. Consumption of other vegetables on daily basis was negligible except green chillies and tomato. Green chili and tomato were consumed by 100 per cent of families daily in Suwana block generally as mix veg in dinner. Karunda was consumed weekly by children in North and in East as it is easily available from open fields. Brinjal was also weekly consumed by Children in Suwana Block.

Fruits: Fruits are generally good source of vitamin C. In addition, they also provide β carotene (papaya), energy (banana) and iron (dried fruits). The fruits consumed mostly were banana, orange and guava due to them being cheaper than other fruits. Mostly children consumed banana in Mid-day Meal (MDM) in school - Once in a week distributed by MDM. They were unable to buy fruits for daily consumption. The overall adequacy of fruit was 53.16 percent of RDI. Low cost fruits like Guava and Banana are distributed as part of MDM in school.

Fat and Oil: Consumed oil on daily basis in the form of vegetable and dal for cooking. Consumption of Desi ghee in Suwana block samities on daily, weekly and monthly basis were negligible. Only consumed occasionally. This may be attributed to unaffordability of ghee due to its high cost. The overall mean intake of fats by the children was 17.94g. Children fat and oil adequate intake was 60.45 percent of RDI. Statistically not significant.

Sugar: Sugar and jaggery are the two most commonly consumed sweetener by every Indian household. Overall sugar intake of children was 14.74g /day which is 65.43 percent of RDI.

Non vegetarian food: The overall mean intake of non-vegetarian foods was 66.5g/day, which was 78.00 percent of RDI. Significance difference between children in non-vegetarian food.

Ninety five percent children in East are non-vegetarians. In non -vegetarian food items they prefer consuming rabbit, domestic birds and locally available animals twice or thrice in a week. Chicken and mutton is used only in festival. It is a major part of their celebrations and various occasions.

Children prefer non-veg only in home. Consumption of meat and chicken was very low and infrequent due to their low purchasing power. On their study nutritional status of tribes of Rajasthan that all the tribes were non vegetarian but the intake of animal food was lacking because of its higher price and the low availability [8]. Even amongst study low consumption of animal products in tribal diet [9].

Egg: The overall mean intake of children egg was 59.16g/day, which is 43.28 percent of RDI.

Protein energy malnutrition is the term given to a group of clinical conditions which occur due to inadequate protein and calorie intake, especially in children [10]. In Suwana block children protein mean intake was 21.17g/day and calorie mean intake of children was 1236.19g/day that is inadequate intake of daily biases. The consumption of pulses, legumes, milk and milk products intake are also inadequate.

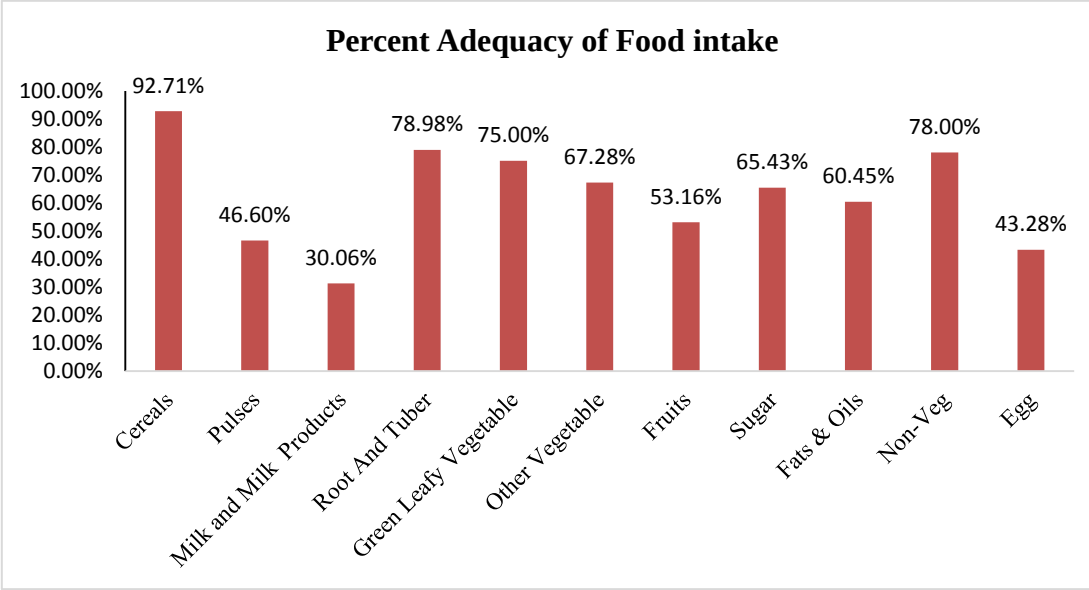

Fig. 1. Overall Percentage adequacy (RDI) of food intake of Bhil Children (4-12year)

CONCLUSION

It is clear that the consumption of wheat, rice, pulses, milk and milk products among the Bhil tribe children in Suwana block is comparatively higher. Main reason behind weekly consumption of fruits, milk and pulses is because school going children generally receive these weekly during mid-day meal program in school. Home consumption of Fruits, milk and pulses is negligible.

From the finding of the present study it can be concluded that, even after the efforts of government the knowledge about nutrition has not reached to rural tribal children and mothers up to desired level. The health and nutritional standards of tribal children in this study were found to be unsatisfactory. Tackling malnutrition in rural area requires a holistic approach, especially when targeting populations of Bhil tribe children. Later, studies can be conducted to assess the impact of policies and programmes on the nutritional status of tribal children.

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