



A STUDY ON NUTRITIONAL STATUS AND IMPACT OF DIETARY RECOMMENDATIONS AMONG TRIBAL WOMEN

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ABSTRACT

Tribal women constitute one of the most nutritionally vulnerable groups in India due to poverty, low literacy, food insecurity and traditional food taboos. The objective of the study was to assess nutritional status of tribal women and evaluate the impact of community based dietary recommendations. For the study, experimental pre-post interventional study was conducted among 35 tribal women aged 19 - 48 years, selected with purposive sampling from Bhanmer village of Bhiloda taluka of Aravalli district, Gujarat. Nutritional status was assessed with anthropometry and hemoglobin with the help of ASHA workers. An intervention program included fortnightly dietary recommendation sessions. Post-test was conducted after 3 months. Data was analyzed with MS excel and paired t-test, was applied for the measurement of the significance. Majority of tribal women were from age group of 19-28 and 39 - 48 years respectively. Most of the women had below 5,000/- Rs. monthly family income and educated up to higher secondary level. 40 % of women were engaged in agriculture and animal husbandry activities. 82.86 % tribal women consumed vegetarian diet. 51.43 % of women used to have three meals a day. Post dietary recommendations, it was observed that there was improvement in weight, BMI, hemoglobin level and nutritional knowledge regarding sources of various nutrients and thus, it showed positive impact among tribal women.

KEYWORDS : Tribal Women, Nutritional Status, Dietary Recommendations, Anemia, BMI, Local Foods.

INTRODUCTION

Tribal communities comprise 8.6 % of India's population, with Gujarat ranking 4th in tribal population. In Gujarat, there is a 14.8 % tribal population concentrated in districts like Dahod, Panchmahal, Aravalli, and Banaskantha, with high prevalence of nutritional anemia and underweight. Despite constitutional safeguards and targeted schemes, tribal women continue to suffer from "hidden hunger" due to geographical isolation, early marriage, multiple pregnancies, and dependence on rain-fed agriculture. National Family Health Survey - 5 (2019-21) reports 57.2 % anemia among tribal women in Gujarat. Traditional diets were mainly cereal-based with low intake of pulses, milk, fruits, and vegetables causes the poor nutritional status. Cultural taboos during pregnancy and lactation further worsen nutrient intake. Several studies document poor status but limited interventional research exists using local food-based approaches. Dietary recommendations based on the availability of local foods alone are inadequate as they require specific approach as a preventive measure.

Health and nutrition among tribal populations in Gujarat continues to be a significant public health issue. A study conducted by Dave et.al. (2019) on Nutritional Status and Food Consumption Pattern of Tribal Farm Women of Sabarkantha, stated that 43 % women had BMI < 18.5. Recent studies have consistently demonstrated that tribal women face an elevated risk of anemia and malnutrition. Patel et al. (2021) discovered that the prevalence of anemia among tribal women in Gujarat significantly exceeds the national average. In reference to health and wellbeing, tribal and rural women face same adversities. Anemia is already a massive public health problem, with rural and tribal women suffering the most (Kumar et al., 2022; Verma & Srivastava, 2023). Their diets often lack in key nutrients like iron, calcium, and other required vitamins. The reasons are many, viz. lack of awareness, limited money, or just not sufficient food for one's daily need (Bhandari & Chowdhury, 2021; Paul et al., 2022).

Adequate intake of all the essential nutrients through a well formulated balanced diet is needed to maintain good health. A balanced diet prevents all the adverse effects of nutritional deficiencies and also ensures optimal growth and

development. It also minimizes the risk of diet related non communicable diseases occurring in later life. Appropriate dietary habits and physical activity through all the stages of one's life are essential for the maintenance of holistic health. A balanced diet fulfills all the nutritional needs of the body. There is no single food which can provide all the necessary nutrients and hence these need to be obtained through a judicious choice of a variety of foods. Present study addresses the gap by testing practical, and culturally acceptable dietary recommendations using indigenous foods. Main focus was on sources of nutrients with reference to local availability. This study mainly aimed to assess baseline nutritional status with anthropometry and hemoglobin level of tribal women and dietary recommendations were suggested using locally available, and affordable foods.

METHODOLOGY

This study was undertaken as a community-based approach for 3 months. Pre and post test data were collected from Bhanmer village of Bhiloda taluka of Aravalli district was selected randomly. Total 35 tribal women, 19 - 48 years, non-pregnant, non-lactating, and willing to participate were selected. Data were calculated and compared on prevalence of anemia, and BMI (Jelliffe D.B. -1966). Pre-tested interview schedule was conducted for personal, socio demographic data through well structured questionnaire. Anthropometry was done with height, weight measurements and based on that BMI calculated. Dietary recommendations were conducted monthly by trained nutritionist (researcher) and ASHA workers. Statistical analysis was conducted using MS excel for Paired t-test for BMI, hemoglobin levels (Kothari, 2004).

RESULTS & DISCUSSION

Table: 1 Personal & Socio Demographic Characteristics and Nutritional Status of Tribal Women.

Characteristics	Frequency (F)	Percentage (%)
Age in years		
19 - 28 years	12	34.29
29 - 38 years	11	31.42
39 - 48 years	12	34.29

Income		
Below 5,000/- Rs.	17	48.57
5,001/- to 10,000/- Rs.	13	37.14
Above 10,001/- Rs.	05	14.29
Occupation		
Study	05	14.29
Home maker	09	25.71
Labour	07	20.00
Agriculture & animal husbandry	14	40.00
Education		
Up to secondary	09	25.71
Higher secondary	16	45.71
Graduate	10	28.57
Type of diet		
Vegetarian	29	82.86
Non vegetarian	06	17.14
Frequency of meal		
Three	18	51.43
Four	10	28.57
Five	07	20.00
Nutritional status		
BMI	Pre - F (%)	Post - F (%)
< 18.5	17(48.57)	02 (5.71)
18.5 – 24.9	15(42.86)	29 (82.86)
> 25	04(11.43)	04(11.43)
Hemoglobin (Anemia condition)	Pre - F (%)	Post - F (%)
12-14 g % (Normal)	05(14.29)	12(34.29)
10-11.9 g % (Mild)	14(40.00)	23 (65.71)
7-9.9 g % (Moderate)	16(45.71)	--
Hemoglobin level	Before 10.30 ± 1.41 ± 0.24 After 11.78 ± 1.04 ± 0.18	6.17 HS

Table 1 depicts the data regarding personal and socio demographic characteristics i.e. age of tribal women. Tabular data shows that 34.29 % tribal women were from age group of 19-28 and 39.-48 years. 31.42 % tribal women were from age group of 29-38 years. Thus, it was observed that majority of tribal women were from age group of 19-28 and 39 - 48 years respectively.

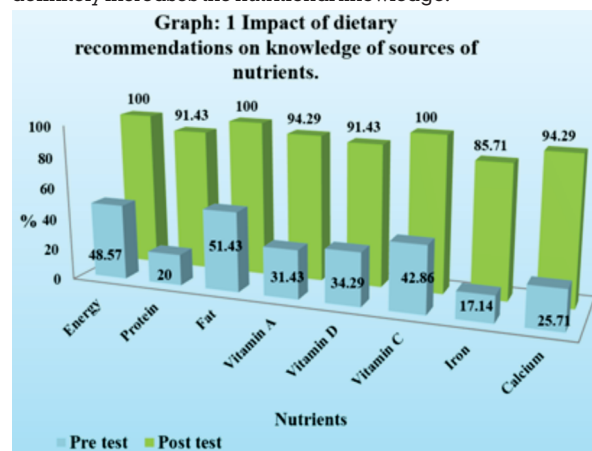
Table 1 also depicts the data regarding monthly family income of tribal women. Data shows that 48.57 % tribal women had below 5,000/- Rs. monthly family income. 37.14 % tribal women had 5,001/- to 10,000/- Rs. monthly family income and 14.29 % tribal women had above 10,001/- Rs monthly family income. Thus, majority, i.e. near to fifty percent women had below 5,000/- Rs. monthly family income.

Table also depicts the data about occupation of tribal women; 14.29 % tribal women were engaged in educational activities. 25.71 % were home makers. 20 % tribal women were engaged in labour activities. Whereas, 40 % were engaged in agriculture and animal husbandry activities. The data depicts about education level of the tribal women. 25.71 % tribal women educated up to secondary level. 45.71 % were educated up to higher secondary level and 28.57 % tribal women were graduates. The table depicts the data about types of diet. It was observed that, 82.86 % tribal women consumed vegetarian diet and rest of them consumed non vegetarian diet. 51.43 % tribal women used to have three meals a day. 28.57 % women used to have four meal a day. Whereas, only 20 % women used to have five meals a day. Thus, majority of the women were observed to consume three meals a day.

Table 1 depicts the pre and post data of nutritional status of tribal women. Pre test BMI data showed that 48.57 % tribal

women had BMI below 18.5 and post test data showed only, 5.71 % tribal women had BMI below 18.5. There was a reduction in numbers of underweight tribal women. Pre test BMI data showed that 42.86 % tribal women had normal BMI and post test data showed 82.86 % tribal women had normal BMI. There was an increase in numbers of normal BMI of tribal women. Overweight data remained same in pre and post test data i.e. 11.43 % had BMI above 25.

Table 1 also depicts the pre and post data of nutritional status i.e. hemoglobin level (anemic condition) of tribal women. Pretest hemoglobin data showed that only 14.29 % tribal women had 12-14 g % hemoglobin level and post test data showed 34.29 % tribal women had normal hemoglobin level. There was improvement in numbers of women having normal hemoglobin level. Pre test data showed 40 % tribal women were mildly anemic. 45.71 % tribal women were moderately anemic which improved from moderate to mild anemic condition. After dietary recommendations, tribal women showed improvement in their blood hemoglobin levels by increasing consumption of locally available foods including basic food groups like cereals, pulses, milk and milk products, fruits and vegetables and oil seeds etc. The graphical presentation shows that pre test data of knowledge of sources of nutrients was low among tribal women. Post test data shows improvement with a higher percentage of knowledge about sources of nutrient knowledge. Thus, it can be indicated that nutrition education along with dietary recommendations definitely increases the nutritional knowledge.



CONCLUSION

Low-cost dietary recommendations using locally available foods significantly improves nutritional status and dietary practices making it most feasible and effective for behavior change among tribal women. Present study showed improvement in weight, BMI and hemoglobin level. It also shows the increase in knowledge regarding sources of nutrients, diseases caused by deficiency of nutrients, and significance of each vital nutrients for healthy human body. Thus, it can be concluded that this can be a cost-effective strategy to improve nutritional status of such vulnerable groups.

Recommendations

Extensive nutrition education programs should organize regularly for creating awareness regarding protective foods like fruits, vegetables, millets and some super foods available abundantly in such tribal area. Awareness can be created regarding proper dietary intake require during different growth phases of women. Awareness can be created regarding preservation techniques that can be implemented so they can preserve their food for long period. Awareness can be created regarding health and hygiene which can be beneficial for healthy living. Extensive and persuasive efforts are required to bring behavioral changes in the community to adopt dietary diversification which eliminate malnutrition.

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