A Look at Dietary Pattern and Health Status

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ABSTRACT

Present paper focuses on the dietary pattern, and health status. But it is lacking in a majority of women especially in the rural areas of Jharkhand State (India). They have unequal access to basic health resources and lack adequate counselling. The greatest challenge for health empowerment of women is to recognize the obstacles which stand in the way of their right to good health. To be useful to the family, community and the society, women must be provided proper knowledge, education and health care facilities. The study focuses on the demographic aspects of female health Status and suggests some solutions for health empowerment of rural women. Present paper focuses on the dietary pattern, health and nutritional status of tribal women. Family monthly income, education, family size, meal pattern, customs. Traditions, types of work and changes in life style showed positive influence on nutritional status of all age group of tribal women. The prevalence of nutritional deficiency diseases found among these people indicated that the food consumed them have poor quality or inadequate to meet their growing needs. The study revealed that there is a direct correlation exists between the adequacy of diet and socioeconomic status. The research reported in this paper aims to study the health status in rural areas of Bharno Block. The main objectives of the study is to access the magnitude and Characteristics of dietary pattern and nutritional deficiencies of oraon women in rural areas of Bharno Block which is influenced by a wide range of factors like agro climatic differences foods grown and availability. Beliefs, Customs and traditions influence the general Pattern of living in any community. Beliefs , in inherent and integral as they are in the **cultural matrix** acts as in visible force in translating Present ideas in to overt acts and customs. **Objectives** :- 1.To find out the anthropometric measurement consisting of weight, height and BMI. 2. To determine and compare the nutrient in take with the Recommended dietary allowances. 3.To examine the clinical Signs and symptoms of nutritional deficiencies 4. To Know the Socio economic status of Sample respondents. **Study design :-** Longitudinal descriptive study. Setting: study was Performed on **Jura and Dumbokhakshitoli** of Bharno Block in Jharkhand. **Particparts:-** 200 adult, women (between 20 to 45 years of age) was randomly Selected for the Study. The food consumption of the subjects was recorded by 24 hour recall method for 3 consecutive days. From the actual consumption of foods daily by the respondents the energy, fat, protein, iron Calcium, B carotene and Ascorbic acid content was Calculated using food composition tables given by NIN **(National Institute of Nutrition) ICMR Hyderabad, 2007**. **Study variables** : Body mass Index (BMI), height, weight, dietary Pattern and nutritional deficiencies **Statistical analysis:-** Percentage, mean and standard deviation.

Results:- The diet of rural oraon tribal women was monotonous and lacking in variety. They were more concerned about the Quantity then quality of the diet. Calculation of nutrient showed that mean daily energy in take was slightly adequate as compared to the (RDA) but the mean daily in take of protein, fat, Calcium, iron, Bcarotene and ascorbic acid was grossly deficient in comparison to ICMR RDA. The low in take of these protective foods results in nutritional disorders. Thus the clinical Signs of malnutrition, anemia and vitamin B complex deficiency were observed. Promoting healthy life style and diets to reduce the burden of malnutrition and non communicable disease requires a multrisectoral approach.

Keywords:- BMI (body mass index) Oraon, women, Dietary pattern, Nutritional deficiencies. RDA (recommended dietary allowances).

Introduction:- The health and nutritional status of rural oraon tribal women who form the vulnerable group of Indian's Population is far from satisfactory.In the rural areas of **Bharno** block, they work as homemakers, farmers, food providers, fuel gatherers and animal feeders. Keeping this in mind, the present study has been undertaken.

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In the dictionary of anthropology "Tribal" is defined as a Social group usually within definite area, dialect, cultural homogeneity and unifying social organization Tribals have not only retained their Separate ethnic and cultural identity from the non tribal population, but each of the tribal group have conserved and nurtured its distinct socio cultural and linguistic tradition (Roy, 2004)

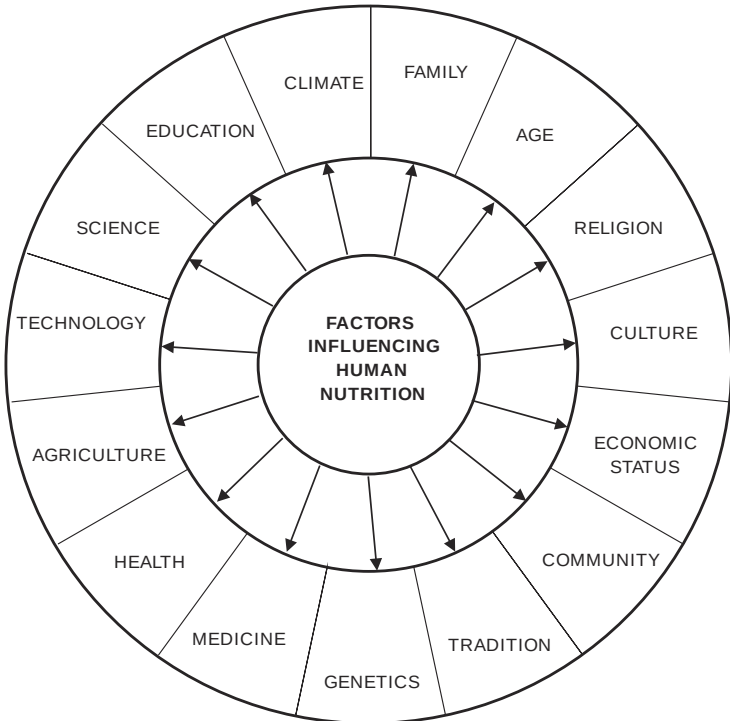
Women contributing nearly half of the world population remain neglected in many developing countries .Poor health in women does not mean merely bodily infirmity;it also has adverse effects on production and productivity. A satisfactory health plan for a nation with special emphasis on women is therefore of the utmost importance. (Benazir Bhutto, 1990)

In Providing sensitive and sympathetic health care for women, it is necessary to understand the many forces shaping women's feeling, behavior, women's heritage, their current socialization and the milieu in which they live and die all components of which the health provider should be aware (Leonide L mortin, 1978) Adequate Nutrition has great potential for a long term health impact in women than any other factor affecting health of women . A woman who has been well nourished before conception begins her pregnancy with reserves of several nutrients so that the needs of the growing foetus can be met without affecting her health. (Srilaxmi, 2005) Good nutrition is a basic component of health. It is of prime importance for the attainment of normal growth and development and in the maintenance of health throughout life (Park and Park, 1989)(Someswara Rao,1961),(jelliffe, 1966) supported the fact that the pattern of growth and physical status, though genetically determined are strongly influenced by nutrition. They also reported that undernutrition has a very bad effect on growth of girls/women.

Banders et al (1968) and Several nutritional experts reported the effect of undernutrition.The term adequate, optimum and good nutrition are used to indicate that the supply of the essential nutrition is is correct in amount and proportion. It also implies that the utilization of such nutrients in the body is such that the highest level of physical and mental health is maintained throughout the life-cycle (Mudambi and Rajagopal, 1982).

Lack of awareness is a major determinant of their poor health status. Poor literacy adds to this problem cultural norms of the oroan tribal society like belief in the supernatural, lack of awareness poverty also effect women's health, Mostly women walk barefoot, worm infection causes anemia. (Kurukshetra, June 2012 Page. 45) Treatment of diseases is influenced by socio cultural factors one important psychological reason is the belief in the super natural, the malevolent spirit which causes diseases and death. Curative methods are resorted to by appeasing the spirit through rituals like animal or bird Sacrifice. Besides they do not trust modern curative processes economic reasons also account for not accessing health care facilities provided by Government. (Kurukshetra, August. 2012 Page. 41)

Factors Influencing Human Nutrition



Source : Shubhangini A. Joshi (2007) Nutrition and Dietitics Tata Mc Graw –Hill publishing company limited. New delhi (pg4)

Low Cost Balanced Diet :-

Diets of poor can be improved nutritionally by 1. replacing a single cereal with mixed cereals, one of them being a millet, 2. inclusion of at least 50 g. green leafy vegetables to improve the intake of vitamin A, iron and calcium, 3. inclusion of inexpensive yellow fruits like papaya or mango and greens to increase vitamin A and C intake, 4. inclusion of at least 150 ml, of milk improves, intakes of riboflavin, calcium besides improving protein quality of the diet. 5. Another extra 10 g of oil increase energy and essential fatty acid intake. Sri lakshmi. B (2005)1

1. Recommended dietary allowances for an adult woman

Nutrient	Sedentary	Moderate	Heavy
Energy Kcal.	1875	2200	2925
Protein g.	50	25	50
Calcium mg.	400	50	400
Iron mg.	30	400	30
Vitamin A			
Retinol mcg.	600	600	600
B Carotene mcg.	2400	2400	2400
Thiamin mg.	0.9	1.1	1.2
Riboflavin mg	1.1	1.3	1.5
Niacin mg.	1.2	14	16
Niacin mg	2	2	2
Vitamin C mg	40	40	40
Folic acid mcg.	100	100	100
Vitamin B_{12} mcg.	1	1	1

Source: B. Srilakshmi (2007)Dietetics. New Age International (P) Limited publishers. NewDelhi (Pg16)

Balanced Diet for an Adult Woman**

	Sedentary work		Moderate Work		Heavy work		Additional Allowance During :	
	Veg.	Non-veg	Veg.	Non-veg	Veg.	Non-veg	Pregnancy	Lactation
	(g)	(g)	(g)	(g)	(g)	(g)	(g)	(g)
Cereals	300	300	350	350	475	475	50	100
Pulses	60	45	70	55	70	55	_	10
Green leafy vegetables	125	125	125	125	125	125	125	125
Other Vegetables	75	75	75	75	100	100	_	_
Roots and tubers	50	50	75	75	100	100	_	_
Fruits	30	30	30	30	30	30	_	_
Milk	200	100	200	100	200	100	125	125
Fats and oils	30	35	35	40	40	45	_	15
Sugar and jaggery	30	30	30	30	40	40	10	20
Meat and fish	_	30	_	30	_	30	_	_
Eggs	_	30	_	30	_	30	_	_
Groundnuts	_	_	_	_	40*	40*	_	_

* An additional 25 g of fats and oils can be included in the diet in place of groundnuts.

** Source : Nutritive Value of Indian Foods., NIN, Hyderabad, 1985 .

Source: Shubhangini A.Joshi (2007) Nutrition and Dietitics Tata McGraw – Hill Publishing company limited. New Delhi (Pg 143)

New Nutritional Guidelines

Nutrient	1998	New Consensus
Carbohydrates	60-70% of total calorie intake	50-60% of total calorie intake
Proteins	10-12% of total calorie intake	10-15% of total calorie intake
Fats	15-30% of total calorie intake	Less thhan 30% of total calorie intake
Saturated Fatty Acids	Not specified	Less than 1% of total calorie intake
Essential polyun-saturated Fatty Acids	Not Specified	5 to 8% of total calorie intake
Mono Unsaturated Fatty Acids	Not Specified	10-15% of total calorie intake
Salt	Less than 8 gms per day	Less than 5 gms per day
Sugar	20-25% per day	Less than 10% of total calorie intake
Water	1 liter per day	1.5 litres per day
Food choices eating out	Not specified	Healthy snack options-avoid high calorie drinks opt for butter milk, coconut water and fresh lime water
Meal portions	Not mentioned	Small, frequent meals
Alcohol	Not to be encouraged	Small quantities not to be discouraged

Source : National Institute of Nutrition, Hyderabad, 2011(Pg25) Kurukshctra—august-2012.Vol.60. No10

Aims and objectives:-

1. To find out the anthropometric measurements consisting of height weight and BMI.
2. To determine and compare the nutrient in take with the recommended dietary allowances. (RDA)
3. To examine the Clinical Signs and Symptoms of nutritional deficiencies
4. To Know the Socio ecomonic status of Sample respondents.

Research design and methodology:-

Rural Bharno area was selected purposively keeping in view that large concentration of rural oraon tribal people the reason for Selecting this Particular area was that no any systematic study on the food pattern of oraon rural tribal women. A number of 200 women were selected for the study of age group 20 to 45 years. The study was conducted on **Jura and Dumbokhakshitoli** of Bharno Block. The study was randomly selected for the study from one village. The food consumption of the subjects was recorded by 24 hour recall method for 3 consecutive days From the actual consumption of foods daily by the respondents the energy,

protein, iron, calcium. Bcarotene and ascorbic acid content was calculated using food composition tables. Body's mass Index (BMI) was calculated using the formula as cited in B. Sri lakshmi (2007)

$$BMI = \frac{\text{Weight (kg)}}{\text{Height}^2 \text{ (M)}}$$

Parameters Used for the Computation of the Socio Economic status.

1. Age, 2. Type of family, 3. Types of activity, 4. No of Children, 5. Occupation, 6. Education, 7. Religion, 8. Monthly Income.

Table 1 :-

Distribution of respondent on the basis of socio-economic profile.

Socio Economic Parameters

(1) Respondent's age (years)

Age	No.	%
20-24	40	40%
25-29	40	40%
30-34	60	60%
35-39	40	40%
40-45	20	20%

(2) Type of Family :

Type of family	No.	%
(i) Nuclear	180	180%
(ii) Joint	20	20%

(3) Types of activity :

Types of activity	No.	%
(i) Sedentary	180	180%
(ii) Moderate	20	20%
(iii) Heavy	-	

(4)No. of Children :

No. of children	No. of family	%
1 - 2	40	40%
3 - 4	120	120%
5 - 6	40	40%

(a) Occupation :

Occupation	No.	%
(i) House wife	180	180%
(ii) Working lady	20	20%

(b) Occupation :

Occupation	No.	%
(i)Agriculture as primary and agricultural labour as secondary	30	30%
(ii) Non agricultural labour as primary and agricultural labour as secondary	150	150%
(iii) Government employment as primary and agriculture as secondary	20	20%

(5) Respondent Education :

Respondent Education	No	%
1. Illiterate	180	180%
2. Primary	10	10%

3. Middle	5	5%
4. High	5	5%

(6) Religion :

Religion	No	%
(i) Sarna	190	190%
(ii) Christian	10	10%

(7) Total Family monthly income :

Total family monthly income	No	%
1. 2000 – 4000	130	130%
2. 4000 – 6000	50	50%
3. 6000 – above	20	20%

Results and Discussion

Table I :-

Socio Economic Profile

Baseline Information

The present study was conducted on rural oraon tribal women of **Bharno Block**. The range of age for the present study was 20-45 years. Major women were in the age group of 30-34 years. The rural women were dominated by Sarna community Very less number i.e. 20% are of joint family. The small family are having 1 or 2 children. The education level of the women indicates that the more number of women are illiterate ie. 180%. 5% are studied up to middle school. 5% women are educated up to high school education. Regarding the occupational status more number of women are of i.e. 90% are of house wife. But due to financial problem most of the women are working as Non agricultural Labour as primary and agricultural labour as secondary i.e. 150 % like wages, doing small business. This shows that tribal women are industrious in nature 20% women are working as Government employment as primary and agriculture as secondary. 30% respondents had Rs.2000-4000, 50% respondents had Rs.4000-6000, 20% respondents had Rs. more than 6000, above monthly income.

Table – II

Mean daily nutrient intake of 100 Rural Oraon tribal women in conparision with RDA

Nutrient	RDA	Mean Value + S.D
1. Energy (Kcal)	2225	2092.23 (+ 34.13)
2. Protein (gm)	50	41.23 (+ 4.03)
3. Fat (gm)	20	10.2 (+ 1.08)
4. Iron (mg)	30	20.5 (+ 1.46)
5. Calcium (mg)	400	288.76 (+ 7.12)
6. Bcarotene (mg)	2400	1750 (+ 16.32)
7. Ascorbic Acid (mg)	40	25.5 (+ 1.63)

(ICMR RDA (1991)

The diet of rural tribal women was monotonous and lacking in variety. They were more concerned about the quantity than quality of the diet. The common menu in morning breakfast was staple with gruel or vegetables In Lunch - staple with gruel or vegetables and in Dinner staple with vegetables some times they are taking staple with flesh food but these % is very less. In staple food they are mainly taking parboiled rice .

The adequacy of nutrients was below the RDA,s for all nutrients. The mean daily energy intake by all the respondents was 2092.23 adequate as compared to the RDA (ICMR 1991) But protein, fat, Iron, Calcium, Bcarotene and Ascorbic acid was below the ICMR RDA. The low intake was due to insufficient intake of balanced diet like sprouts, pulses, dairy products, meat, fish, egg etc.

Poverty and illiteracy plays an important role of not taking balanced diet which indicates poor nutritional status of oraon tribal women.

Table III

Anthropometric Measurments

Parameter	Mean value	Normal value
Weight in kg	43.9 (+ 10.0758)	48.5 kg
Height in cm	145.5 (+ 4.060)	152 cm
BMI	18.0 (+1.489)	18.5-20.0

(Height and weight standard was taken from Nutrition and Dietetics Book, Joshi, A, Subhagini (2007) pg. 548. BMI Standard was taken form Text book of Human nutrition. Second edition Bamji, S. Mahtab and etal (2005) Pg. 166. The average weight of the oraon women ranged from (35 to 55 kg) where the range of height from (140-155 cm). The results showed that the rural women were of less height, weight and BMI than the normal value. This may be due to less intake of balance diet.

Table – IV

Existing illness and other clinical symptoms :-

Sl No.	Name of the Deficiency diseases	No. of respondents (N = 100)
1	Anaemia	20
2	Malnutrition	80
3	Vitamin A deficiency	10
4	Dental Carries	10
5	Backache	20
6	Headache	20
7	Pain in Legs & hand	40

The illness and other clinical symptoms reported among the study were backache, headache, pain in the legs and hands. This may be due to the considerable workload for women who spent 8-9 hours at home continued their work at home and also consumed less food. This led to dietary inadequacies. The results of these surveys have shown that the diets consumed by a large majority of population. Consist predominantly of cereals and contain small amounts of legumes and vegetables and negligible amounts of dairy and dairy products, egg and meat etc. as a result the incidence of protein calorie malnutrition. The prevalence of malnutrition problems like underweightness. Anaemia is due to deficiency of iron. Clinical symptoms of anaemia such as paleness of conjunctiva and skin, pale and smooth tongue. Vitamin A deficiency leads to eye problem.

Summary and conclusion :-

The findings revealed that the rural women are living in a state of great deprivation due to poor socio economic status. This is likely to have as adverse long term impact on their own health, as well as on the welfare of the entire family. Therefore there is, an urgent need to create awareness about nutrition.

The present study revealed that the consumption of milk and milk products, vegetables, fruits, pulses, meat, fish, egg was much less than the RDA proposed by ICMR (1991). The body weight, height and BMI of the rural women were below normal.

There were clinical signs and symptoms of anemia, malnutrition, vitamin A deficiencies, B complex vitamin deficiencies. Thus this type of data strictly justifies the fact that due to ignorance of nutritional needs of the body occurrence of deficiency diseases common in rural oraon tribal women. If these diseases are further ignored then they may be responsible for major health hazards in long term. The composition of our body depends on the type of food that we eat. If the food is deficient the body will also reflect that deficiency. We need several nutrients the levels of which have been decided by the RDI as given by the ICMR

expert committee 1991. The body systematically breaks down each food components to the absorbable form and each nutrients undergoes metabolism is assimilated into the body to be utilized for the specific function that is meant to perform. So the rural women must be encouraged to consume adequate quantities of safe and good quality foods.

Recommendations :-

An intensive study on the effects of detailed cultural factors including status of women and sharing of food and food taboos will provide for a better understanding of the various nutritional deficiency diseases. Screening for various nutritional deficiencies, their treatment and availability of food at reduced rates for the poor women can go along way in eradication of malnutrition especially in women, adolescent girls and children. Setting up of extensive mobile health services is indispensable inorder to provide timely medical facilities and help to the tribals living in interior areas. A multi sectoral approach to combat malnutrition is essential and efforts to increase female literacy. Women need to be educated on the basic health education, sanitation and personal hygiene with a aim to improved health hygiene and health status of the family. They should be made aware of various tribal welfare programs implemented by the government and should be helped to make use of the opportunities. Nutritional assessment of the rural tribal women should be periodically done to improve.

References :-

1. Banders van, Holewijn EA, Dewarrds F (1968): Menstrual cycle shortly after menarche in European and Banotu Girls, Human Biology, 40:314
2. Bamji : Mahatab S and etal . 2003. Text book of Human nutrition, oxford & IBH publishing Co. Pvt. Ltd. New Delhi, Pg. 166.
3. Bhutto B ed (1990): Women and health and health in world health (april-May)1.
4. B. Srilakshmi (2007) Dietetics. New Age International (P) Limited publishers. New Delhi (Pg 16)
5. Gopalan, C. and et al (2007) Nutritive value of Indian foods. National Institute of Nutrition (ICMR) Hyderabad.
6. Jelliffe, D.B. (1966): The assessment of nutritional status of the community who monographs series, No_53, Genewa, P. 10-94
7. Joshi, A. Shubhangini (2007) Nutrition and Dietetics. Tata Mc Graw Hill Publishing company Limited. New Delhi pg 53 and 548.
8. Kurukshetra (August 2012) A journal on Rural development. Rural Health vol. 60 No. 10 (pg 40, 41, 42)
9. Kurukshctra—august-2012.Vol.60. No10 National Institute of Nutrition, Hyderabad, 2011(Pg25)
10. Leonide L Mortin (1978): Health care of women in Nutrition, Physical Fitness and Health, JanaParixkova & V.a. Rogozkin (ed) Vo17,J.B. Lippincott Company,Philadophia, New York, san Jose, tornoto.
11. Mudambi, S.R and Rajagopal, M.V. (1982): Foods thesource of our nutrients in Fundamentals of Foods and Nutrition, New Age International (P) Limited. Publishers, New Delhi 2
12. National Institute of Nutrition, Hyderabad, 2011(Pg 25)
13. Park,J.E. and Park ,K, (1989_:''Nutrition and Health in Text book of Preventive and Social Medicine M/S Banarsi das Bharat, Publisher Jabalpur, 324
14. Park, K (2007) Preventive and social Medicnie. M/s Banarsi das Bhanot Publishers 1167 Prem Nagar Jabalpur (pg 700 – 706)
15. Roy, S.C. 2004. The oraons of chotanagpur crown publications Ranchi (100-104).
16. Someswara, Rao K (1961): Review of Nutrition survey carried out in India ICMR Special report series no.36;26.
17. Srilaxmi, B, (2005): Dietetics, New Age International (P) Limited, Publishers,New Delhi p.88
18. Sri Lakshmi, B. (2007) Deitetics. New Age international (P) Limited (pg 16 and 350).
19. Shubhangini A. Joshi (2007) Nutrition and Dietitics Tata Mc Graw - Hill publishing company limited. New Delhi (Pg 4)
20. Shubhangini A. Joshi (2007) Nutrition and Dietitics Tata Mc Graw - Hill publishing company limited. New Delhi (Pg 143)

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