RESEARCH ARTICLE

ADVANCE RESEARCH JOURNAL OF SOCIAL SCIENCE

Volume 7 | Issue 1 | June, 2016 | 73-80 ■ e ISSN–2231–6418

DOI: 10.15740/HAS/ARJSS/7.1/73-80 Visit us : *www.researchjournal.co.in*

Rural health scenario in Bharno block, Jharkhand

■ Sheeth Toppo

Department of Home Science, Ranchi University, RANCHI (JHARKHAND) INDIA

(Email: rcumesh@rediffmail.com)

ARTICLE INFO :

Received : 16.03.2016
Revised : 12.04.2016
Accepted : 14.05.2016

KEY WORDS :

BMI (Body mass index) Oraon, women, Dietary pattern, Nutritional deficiencies, RDA (Recommended dietary allowances)

HOW TO CITE THIS ARTICLE :

Toppo, Sheeth (2016). Rural health scenario in Bharno block, Jharkhand. *Adv. Res. J. Soc. Sci.,* **7** (1) : 73-80, **DOI: 10.15740/HAS/ARJSS/7.1/73-80.**

ABSTRACT

The paper emphasizes that a woman needs to be physically healthy and strong so that she would be able to take challenges in life. 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 counseling. 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 socio-economic 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 Peepartoli and Boro 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.

*Author for correspondence

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 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 (Bhutto, 1990)

In Providing sensitive and sympathetic health care for women, it is necessary to understand the many forces shaping women's feeling, behaviour, 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 (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, 1961 and 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 under nutrition has a very bad effect on growth of girls/women.

Banders *et al.* (1968) and Several nutritional experts reported the effect of under nutrition. 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, 2012). 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, 2012).

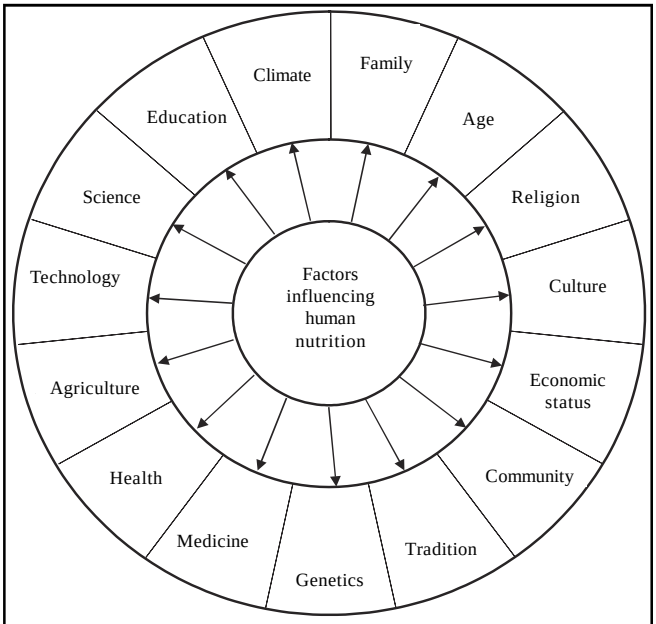
All tribals were non-vegetarians. They consumed pork. rat meat, beef and various birds. However, the use of non-vegetarian items was limited to two or three times a month, usually on day when they were paid for their work Mittal and Srivastava (2006). Domestic animals as well as wild life go into their dietaries as and when available. In many areas, pigs and fowls are reported to be reared and pork are said to be the most favourite item. Sacrificing of animals like buffaloes, cow, bull, pig, fowl etc on some special occasions and sharing the flesh among

the villagers is said to be common with the tribals. In spite of the emphatic account of various kinds of flesh foods, consumption of it by the tribals is reported to be low. The tribals are too poor to kill their domestic animals very often ans wild animals too are not always available. Fish are liked by mot of the tribes but only few tribes can afford to get it regularly. however, dried fish is reported to be used by various tribals in small quantities as a flourishing agent in vegetable preparations. Eggs are generally not consumed by the tribals and are mainly used for hatching.

The average oroan eats even the mouse and the crow with relish, Flesh and fish are either boiled in water, or fried in oil, or roasted. The beast, or bird or fish or plant that forms the token of a particular sept is tabu to members of the sept. Roy (2004). Unusual foods available in the forest during the monsoon period from the staple food for most of the tribals specially to those living in hilly areas. The yield of agricultural practice being poor, tribals have to depend on the forest producing during the lean period. Various unusual foods like wild mushrooms, bamboo shoots, wild mangoes, red ants, wild millets, wild rice which grows near paddy fields.

Rice-beer (hanria) is the favourite drink of oroans, as of other aborigiral of chota nagpur. This is made by mahua flower, rice marua. Then it is mixed with ranu (Oraon bichni) is mixed with the contents. In summer it about 3 or 4 days and in winter about a week or more for the ranu to work and produce fermentation. Country beer is made up of corolla of mohua (Bassia latifolia) flowers and sold at grocer-shops, is now-a-days very much is demand. In fact their excessive use of drink have spelled the ruin of many oraon family (Roy, 2004). Popular using ranoodava with jaggery and was consumed in larger quantities. jaggery is a peculiarly Indian item of food made from sugar cane by a special process. It has a distinct flavour and colour. Shakuntla *et al*. (1997) and Chandrasekhar *et al.* (1995) 5 evaluated the uncommon food consumed by oraon tribes of Bihar, Fermented products like rice beer, mahua wine, ranu and tikia are rich in energy content, several vitamins and mineral. The green leafy vegetables and flowers are also rich in several nutrients.

The nutrient content of a prepared dish never become equal to the sum total of the nutrient content of all the ingredients used for preparation of dish. Some loss of certain nutrients during food processing is inevitable. Certain vitamins are sensitive to high temperature during processing. The degree of nutrient loss and the relative importance of the loss of a specific nutrient from particular commodity should also be taken into consideration. The blanched mushrooms after dehydration are found to be superior to their flavour, taste and texture Rajyalakshmi (1991).



Source : Joshi (2007 a). *Nutrition and Dietitics Tata Mc Graw*. Hill Publishing Company Limited, New Delhi, p 4.

Fig. A : Factors influencing human nutrition

Table A : Nutritional requirement for adults

Sr. No.	What?	Why?	Which food?
Nutrients you need from food :			
1.	Carbohydrates	To provide energy	Pasta, bread, rice, potatoes
2.	Proteins	Growth and repair	Meat, fish, bears
3.	Fats	Energy insulation	Dairy foods, plant-oils, meat, fish
4.	Vitamins	To help cells work	Fruits, vegetables, eggs, meat, fish
5.	Minerals	To help cell work	Dairy foods, meat, fish, nuts, bears
6.	Fibre	To help in intestines work	Fruit vegetables
7.	Water	Essential for life	All food and drinks

Kim bryan *et al.* (2011)

Table B : Recommended dietary allowances for an adult woman

Sr. No.	Nutrient	Sedentary	Moderate	Heavy
1.	Energy Kcal.	1875	2200	2925
2.	Protein g.	50	25	50
3.	Calcium mg.	400	50	400
4.	Iron mg.	30	400	30
5.	Vitamin A			
6.	Retinol mcg.	600	600	600
7.	B. Carotene mcg.	2400	2400	2400
8.	Thiamin mg.	0.9	1.1	1.2
9.	Riboflavin mg	1.1	1.3	1.5
10.	Niacin mg.	1.2	14	16
11.	Niacin mg.	2	2	2
12.	Vitamin C mg	40	40	40
13.	Folic acid mcg.	100	100	100
14.	Vitamin B_{12} mcg	1	1	1

Source: Srilakshmi (2007). *Dietetics.* New Age International (P.) Limited Publishers, New Delhi, p. 16.

Table C : Balanced diet for an adult woman**

	Sedentary work		Moderate work		Heavy work		Additional allowance during	
	Veg. (g)	Non-Veg. (g)	Veg. (g)	Non-Veg. (g)	Veg. (g)	Non-Veg. (g)	Pregnancy (g)	Lactation (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: Joshi (2007 c). *Nutrition and dietitics*. Tata Mc Graw, Hill Publishing Company Limited, New Delhi, p. 143.

Table D : New nutritional guidelines

Sr. No.	Nutrient	1998	New consensus
1.	Carbohydrates	60-70% of total calorie intake	50-60% of total calorie intake
2.	Proteins	10-12% of total calorie intake	10-15% of total calorie intake
3.	Fats	15-30% of total calorie intake	Less than 30% of total calorie intake
4.	Saturated fatty acids	Not specified	Less than 1% of total calorie intake
5.	Essential polyun-saturated fatty acids	Not specified	5 to 8% of total calorie intake
6.	Mono unsaturated fatty acids	Not specified	10-15% of total calorie intake
7.	Salt	Less than 8 gms per day	Less than 5 gms per day
8.	Sugar	20-25% per day	Less than 10% of total calorie intake
9.	Water	1 lit. per day	1.5 litres per day
10.	Food choices eating out	Not specified	Healthy snack options avoid high calorie drinks opt for butter milk, coconut water and fresh lime water
11.	Meal portions	Not mentioned	Small, frequent meals
12.	Alcohol	Not to be encouraged	Small quantities not to be discouraged

Source: National Institute of Nutrition, Hyderabad (2011). *Kurukshetra* - August (2012), **60**(10) : 25

Table E : Distribution of respondent on the basis of socio-economic profile

Socio-economic parameters		
Age	Number	Per cent
Respondent's age (years)		
20-24	40	40%
25-29	40	40%
30-34	60	60%
35-39	40	40%
40-45	20	20%
Type of family		
Type of family		
Nuclear	180	180%
Joint	20	20%
Types of activity		
Types of activity		
Sedentary	180	180%
Moderate	20	20%
Heavy	-	
No. of children		
No. of children		
1 - 2	40	40%
3 - 4	120	120%
5 - 6	40	40%
Occupation		
Occupation		
House wife	180	180%
Working lady	20	20%
Occupation		
Occupation		
Agriculture as primary and agricultural labour as secondary	30	30%
Non agricultural labour as primary and agricultural labour as secondary	150	150%
Government employment as primary and agriculture as secondary	20	20%
Respondent education		
Respondent education		
Illiterate	180	180%
Primary	10	10%
Middle	5	5%
High	5	5%
Religion		
Religion		
Sarna	190	190%
Christian	10	10%
Total family monthly income		
Total family monthly income		
2000 - 4000	130	130%
4000 - 6000	50	50%
6000 - above	20	20%

Aims and objectives :

- To find out the anthropometric measurements consisting of height weight and BMI.
- To determine and compare the nutrient in take with the Re commended dietary allowances. (RDA)
- To examine the Clinical Signs and Symptoms of nutritional deficiencies
- To Know the Socio-economic status of Sample respondents.

MATERIAL AND METHODS

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 Peepartoli and Boro 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 Srilakshmi (2007).

$$\text{BMI } Z \frac{\text{Weight (g)}}{\text{Height}^2 \text{ (m)}}$$

Parameters used for the computation of the socio-economic status :

- Age
- Type of family
- Types of activity
- Number of children
- Occupation
- Education
- Religion
- Monthly income

OBSERVATIONS AND ANALYSIS

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

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 per cent 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 *i.e.,* 180 per cent. 5 per cent are studied upto middle school. 5 per cent women are educated upto high school education. Regarding the occupational status more number of women are of *i.e.,* 90 per cent 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 per cent like wages, doing small business. This shows that tribal women are industrious in nature 20 per cent women are working as government employment as primary and agriculture as secondary. 30 per cent respondents had Rs.2000-4000, 50 per cent respondents had Rs. 4000-6000, 20 per cent respondents had Rs. more than 6000, above monthly income.

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 per cent 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 2091.23 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.

(Height and weight standard was taken from Nutrition and Dietetics Book, Joshi (2007 b). BMI Standard was taken form Text book of Human nutrition. Second edition Bamji *et al.* (2003). 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.

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

Table 1 : Mean daily nutrient intake of 200 rural Oraon tribal women in comparison with RDA

Nutrient	RDA	Mean value ± S.D
Energy (Kcal)	2225	2091.23 (± 34.12)
Protein (gm)	50	41.20 (± 4.02)
Fat (gm)	20	9.2 (± 1.07)
Iron (mg)	30	20.1 (± 1.45)
Calcium (mg)	400	287.75 (± 7.10)
Bcarotene (mg)	2400	1745 (± 16.31)
Ascorbic acid (mg)	40	24.5 (± 1.62)

(ICMR RDA (1991)

Table 2 : Anthropometric measurements

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

malnutrition. The prevalence of malnutrition problems like underweight ness. 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.

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.

Now day many aganwadis are working in this district and many mahila samiti's are working in this area. They help the women to empower. Now-a-days some of them are beneficiaries under ICDS and Anganwari Yojna. They also visit Aganwari Kendra for health check up. From Anganwari Kendra, the tribal women are taking many help from them. They get knowledge from the worker. Here in this Aganwari Kendra and health centre there is free distribution of medicines and iron tablet to the lady who require. They are free distribution medicines giving injection to the person who require. They are free distributing pamphlet to understand the disease, cooking method, giving health education, nutrition education, sanitation and hygiene education. These are the main person which helps in changing the life style and also changing the food pattern of tribal people.

Before people are very conservative, they are so conservative that they don't want to take injection from the doctor also when they are ill. But now days due to health centre, Aganwari Kendra available in every block. They are slowly aware of the hygienic condition and slowly their health condition also becoming good. But this per cent is very less. They must be provided with proper nutrition education programme and educate them about health hygiene and improved cooking practices. So that they can develop them selves and maintain their health in good condition.

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 in order to provide timely medical facilities and help to the tribals living in interior areas. A multi sectoral approach to combat

Table 3 : Existing illness and other clinical symptoms

Sr. No.	Name of the deficiency diseases	No. of respondents (n=100)
1.	Anemia	20
2.	Malnutrition	80
3.	Vitamin A deficiency	10
4.	Dental carries	10
5.	Backache	20
6.	Headache	20
7.	Pain in legs and hand	40

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

Bamji, Mahatab S. and Krishnaswamy, Kamala and Braham, G.N.V. (2003). *Text book of Human nutrition*, Oxford & IBH Publishing Co. Pvt. Ltd., p.166, NEW DELHI, INDIA.

Banders van, Holewijn, E.A. and Dewarrds, F. (1968). Menstrual cycle shortly after menarche in European and banotu girls. *Human Biol.*, **40** : 314.

Bhutto, B. (1990). Women and health and health in world health (April-May)1.

Chandrasekhar, V., Kowsalya, S. and Solali, S. (1995). Food consumption, pattern and dietary practices of Oraon tribes of Bihar. *Indian. J. Nutr. Dietet.*, **32**(5) : 95-96.

Gopalan, C., Rama Sastri, B.V. and Balasubramanian, S.C. (2007) Nutritive value of Indian foods. National Institute of Nutrition (ICMR) Hyderabad, TELENGANA (INDIA).

Jelliffe, D.B. (1966). The assessment of nutritional status of the community who monographs series, No_53, Genewa, P. 10-94.

Joshi, Shubhangini A. (2007 a). *Nutrition and dietetics Tata Mc Graw,* Hill Publishing Company Limited, p. 4., NEW DELHI, INDIA.

Joshi, Shubhangini A. (2007b) *Nutrition and dietetics*. *Tata Mc Graw,* Hill Publishing Company Limited, New Delhi pp 53 and 548.

Joshi, Shubhangini A. (2007c). *Nutrition and dietetics Tata Mc Graw*, Hill Publishing Company Limited, p. 143. NEW DELHI, INDIA.

Kurukshetra (2011). **60**(10) National Institute of Nutrition, p. 25, Hyderabad (A.P.) INDIA .

Kurukshetra (2012) A journal on rural development. *Rural Health*, **60**(10) : 40-42.

Mittal, P.C. and Srivastava, S. (2006). Rural and remote health. The International Electronic Journal of Rural and Remote health. The international Electronic journal of Rural and Remote health Research, *Edu. Practice & Policy*. pp 2-1.

Mortin, Leonide L. (1978). *Health care of women in nutrition, physical fitness and health*, JanaParixkova & V.a. Rogozkin (Ed.) **7**, J.B. Lippincott Company, Philadophia, New York, SAN JOSE, TORNOTO.

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, INDIA .

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.

Park, K. (2007). *Preventive and social Medicnie*. M/s Banarasi das Bhanot Publishers 1167 Prem Nagar Jabalpur pp 700-706.

Rajyalakshmi, P. (1991). Tribal food habits crown Publishing House, pp 106-107. NEW DELHI, INDIA.

Rao, Someswara K. (1961). Review of nutrition survey carried out in India ICMR Special Report Series No.**36** : 26.

Roy, S.C. (2004). *The oraons of Chotanagpur*. Crown Publication Ranchi , pp. 68-78.

Roy, S.C. (2004). *The oraons of Chotanagpur. Crown*. Publications Ranchi, pp 100-104.

Roy, S.C. (2004). *The oraons of Chotanagpur,* Crown Publications, Ranchi pp. 103-104.

Shakuntla, M. and Shadak, Shara Swamy M. (1997). Foods, Fats and Principals. New Age International, p 408.

Srilakshmi, B.(2005). *Dietetics*, New Age International (P.) Limited, Publishers, New Delhi p.88

Srilakshmi, B. (2007) *Dietetics*. New Age International (P.) Limited Publishers, NEW DELHI, INDIA.