IJIRR

International Journal of Information Research and Review
Vol. 04, Issue, 01, pp. 3503-3506, January, 2017

Research Article

INFLUENCE OF INCOME AND EDUCATION ON NUTRITIONAL STATUS OF FEMALE FARM LABOURERS FROM PARBHANI DISTRICT OF MARATHWADA REGION

***Dr. Zanvar, V. S. and Kharwadea, A.R.**

Ph.D Resaerch Guide, Asst.Prof.Home Science, ShriYoganand Swami Arts College,Basmath Dist. Hingoli(MS)

ARTICLE INFO

Article History:

Received 24th October, 2016
Received in revised form
22nd November, 2016
Accepted 15th December, 2016
Published online January, 30th 2017

Keywords:

Anthropometry,
Food intake,
ICMR,
Nutrient intake and
RDA.

ABSTRACT

This study was undertaken to know the influence of income and educational level onnutritional status of selected female farm labourers from urban slum and rural area of Parbhani District of Marathwada region. Randomly 500 female farm labourers were selected i.e. 250 each from urban slums and rural. Equal number of 21-30 and 31-40 years i.e. 125 each in all groups were covered for study. The study involved anthropometry, food consumption pattern and nutrient intake of selected 500 female farm labourers. Anthropometric measurements of selected female farm labourersfor height, weight, BMI, MUAC, waist circumference, hip circumference and WHR was ranged between 150.08 to 151.32cm, 48.25 to 50.08kg, 21.35 to 22.62 kg/m^2, 25.08 to 25.88cm,73.36 to 75.58cm, 87.20 to 90.18cm and 0.84 to 0.86respectively. Statistically non-significant difference was observed when compared the values among different income levels for all anthropometric measurements. Further the consumption of different food stuffs by selected subjects revealed that irrespective of different income and educational groups all the recorded values were below than ICMR recommendation for all food groups except sugars and jaggery. All the recorded values for nutrient intake were below RDA except fat. The meal pattern of all surveyed respondents was almost same irrespective of education and monthly family income but change was noticed in terms of quantity of food. Change in food pattern may be due to economic condition, choices and preference of foodstuffs.

INTRODUCTION

Women play an important role at home as well as in the society. They form a major part of our society. According to census (2011), out of total population of our country women were million and Maharashtra state contents 54 million women population. Out of the main workers population, female workers comprise 25.51 per cent. An overwhelming majority of them are associated directly or indirectly with agricultural. A femalefarm labourer irrespectiveof herdegreeof affluence provides 14 to 16 hours of productive physical labourer every day in a wide variety of activities directly connected with agriculture, allied and domestic chores. Hence they lack in basic needs such as food and health care, which directly affect their health status. Food habits are also predictors of health and nutritional status. Cultural and socioeconomic status of women population influence food choice and pattern of consumption of some food items is likely to vary according to season and often based on availability and price.

****Corresponding author: Dr. Zanvar, V. S.***
Ph.D Resaerch Guide, Asst.Prof.Home Science, ShriYoganand Swami Arts College,Basmath Dist. Hingoli(MS).

BMI is calculated by using values of height and weight as BMI is a most established anthropometric indicator used for assessment of nutritional status and also the socio-economic situation of population. Hence this study aims to know influence of income and education on nutritional status of female farm labourers from Parbhani District of Marathwada Region

MATERIALS AND METHODS

The present study was carried out to assess the nutritional status of selected female farm labourers from urban slum and rural area of Parbhani District of Marathwada region of Maharashtra state. The urban population was exclusively selected from four different slums in city namely Bharat Nagar, Kadrabad plot, Beleshwar Nagar and Shankar Nagar. While, rural population was selected from four talukas namely Parbhani, Manwat, Pathri and Selu of Parbhani district. A survey was carried out to know socio-economic background of selected female farm labourers from Parbhani district. A combination of anthropometry, food consumption pattern and nutrient intake were used for assessing the nutritional status of selected female farm labourers. Randomly 500 female farm labourers were selected i.e. 250 each from urban slums and rural.

Equal number of 21-30 and 31-40 years i.e. 125 each in all groups were covered for study. Availability of female farm labourers was ascertained through visit to households. Using standard procedures of anthropometry (Jelliffee, 1966 and WHO 1995) measurements of height (cm), weight (kg), mid-upper arm circumference, waist – hip –ratio (WHR) of the selected 500 female farm labourers were recorded and compared with NCHS (1977) reference values. The body mass index (BMI) was calculated by using ICMR Standard formula, (1996).WHR is the ratio of circumference of the waist to that of the hip.

The amount of food consumption was measured using weighment method with standardized spoons, glasses and plates for measurements of the raw foodstuffs. The data was analyzed statistically by applying different suitable tests to compare between the two groups and to find out the significant difference between groups.

RESULTS AND DISCUSSION

Influence of different income levels on anthropometric measurements is presented in Table 1.

Table 1. Anthropometric measurements of selected female farm labourersas per different income levels (N=500)

Income Level (Rs.)	Height (cm)	Weight (kg)	BMI (kg/m^2)	MUAC (cm)	Waist Circumference (cm)	Hip Circumference (cm)	Waist – Hip Ratio
Up to 6000	150.28 ± 5.80	48.25 ± 9.27	21.35 ± 3.81	25.08 ± 2.74	73.63 ± 9.06	87.44 ± 8.95	0.84 ± 0.05
6001 to 10000	150.88 ± 5.54	49.94 ± 9.54	21.91 ± 3.94	25.69 ± 3.70	74.64 ± 9.95	88.87 ± 9.16	0.86 ± 0.04
>10001	151.32 ± 4.96	49.09 ± 8.13	21.42 ± 3.32	25.50 ± 3.99	73.52 ± 8.12	87.75 ± 7.55	0.86 ± 0.08
f value	0.93^{NS}	1.40^{NS}	1.16^{NS}	1.11^{NS}	0.77^{NS}	1.30^{NS}	1.90^{NS}
CD	NS	NS	NS	NS	NS	NS	NS

NS Non significant

Table 2. Anthropometric measurements of selected female farm labourers as per different education levels (N=500)

Education Level	Height (cm)	Weight (kg)	BMI (kg/m^2)	MUAC (cm)	Waist Circumference (cm)	Hip Circumference (cm)	Waist – Hip Ratio
Primary Educated	150.08 ± 5.06	48.90 ± 10.26	21.44 ± 3.56	25.88 ± 4.90	73.36 ± 10.20	87.20 ± 10.05	0.84 ± 0.05
Secondary Educated	151.22 ± 5.40	49.52 ± 8.76	22.62 ± 4.60	25.47 ± 3.80	74.20 ± 8.86	88.34 ± 8.50	0.84 ± 0.08
High School Educated	150.99 ± 5.24	50.08 ± 8.59	22.21 ± 3.54	25.35 ± 3.96	75.58 ± 9.26	90.18 ± 7.89	0.83 ± 0.06
f value	1.71	0.64	1.65	0.87	2.09	4.42*	0.83
CD	NS	NS	NS	NS	NS	2.30	NS

NS Non significant
* Significant at 5%

Table 3. Mean food intake of selected female farm labourers as per family income (N=500)

Income Level (Rs.)	Cereals (gm)	Pulses (gm)	Green Leafy vegetables (gm)	Roots & Tubers (gm)	Other Vegetables (gm)	Fruits (gm)	Nuts and oil seeds (gm)	Milk and milk products (ml)	Fats & Oils (ml)	Sugars &Jaggery (gm)	Meat and Fish (gm)
Up to 6000	290.78	41.33	24.60	41.18	30.83	17.62	10.20	94.67	19.01	40.79	14.25
6001 to 10000	298.59	42.04	23.05	38.98	33.44	19.96	10.76	97.64	20.40	39.05	12.88
>10001	290.38	40.31	18.37	43.57	31.55	19.64	11.02	97.93	18.19	40.61	11.97
Balanced Diet	360	75	100	100	100	100	-	300	30	25	30
f value	1.04	0.27	3.54*	0.74	0.73	0.49	0.53	0.44	3.15*	0.37	0.31
CD	NS	NS		NS	NS	NS	NS	NS	8.26	NS	NS

NS Non significant
* Significant at 5%

Table 4. Mean food intake of selected female farm labourers as per different education levels (N=500)

Education Level	Cereals (gm)	Pulses (gm)	Green Leafy Vegetables (gm)	Roots & Tubers (gm)	Other Vegetables (gm)	Fruits (gm)	Nuts and Oil seeds (gm)	Milk (ml)	Fats & Oils (ml)	Sugars &Jaggery (gm)	Meat and Fish (gm)
Primary Educated	295.42	39.98	20.13	39.61	30.91	17.99	10.13	96.00	20.49	42.98	14.71
Secondary Educated	292.30	44.08	24.23	39.16	30.86	19.94	10.69	96.85	19.70	39.55	12.91
High School Educated	288.18	40.27	22.56	46.32	31.51	20.53	11.05	97.78	19.07	39.53	11.93
Balanced Diet	360	75	100	100	100	100	-	300	30	25	30
f value	0.75	2.12	2.32	2.49	0.42	0.64	0.91	0.14	1.10	1.81	0.62
CD	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

NS Non significant

The ratio was determined by dividing waist measurement by hip measurement. Food and nutrient intake of all 500 female farm labourers was assessed by using 24 hours recall method for three consecutive days to determine the type and approximate quantity of food stuff consumed by each subject.

The values recorded for height, weight, BMI, MUAC, waist circumference, hip circumference and WHR was ranged between 150.28± 5.80 to 151.32± 4.96cm, 48.25± 9.27 to 49.94± 9.54kg, 21.35±3.81 to 21.91± 3.94kg/m^2 ,25.08±2.74 to 25.69± 3.70cm, 73.52± 8.12 to 74.64± 9.95cm, 87.44± 8.95 to

Table 5. Nutrient intake of selected female farm labourers as per family income (N=500)

Income Level (Rs.)	Energy (kcal)	Protein (gm)	Fat (gm)	Calcium (mg)	Iron (mg)	Vit.C (mg)	β – Carotene (µg)
Up to Rs. 6000	1791.69	53.34	34.67	449.61	15.44	41.34	1647.56
Rs. 6001 to 10000	1764.02	54.19	33.72	449.31	15.57	36.57	1551.07
> Rs. 10001	1747.52	51.34	32.69	435.51	14.96	38.98	1342.92
RDA	2230	55	25	600	21	40	4800
f value	1.22	1.81	2.18	1.00	1.06	1.87	2.83
CD	NS	NS	NS	NS	NS	NS	NS

NS Non significant

Table 6. Nutrient intake of selected female farm labourers as per different education levels (N=500)

Education Level	Energy (kcal)	Protein (gm)	Fat (gm)	Calcium (mg)	Iron (mg)	Vit.C (mg)	β – Carotene (µg)
Primary Educated	1781.40	52.66	34.53	438.77	14.90	41.14	1611.02
Secondary Educated	1780.35	54.08	34.35	451.02	15.89	39.67	1522.30
High School Educated	1771.06	53.11	33.49	447.90	15.34	39.19	1427.82
RDA	2230	55	25	600	21	40	4800
f value	0.82	0.93	0.72	0.73	2.78	0.29	1.36
CD	NS	NS	NS	NS	NS	NS	NS

NS Non significant

88.87± 9.16cm and 0.84±0.05 to 0.86± 0.08 respectively. Respondents belonging to high income group recorded highest value for height (151.32 ± 4.96cm) where as middle income group noted highest values for weight (49.94 ± 9.54 kg), waist circumference (74.64 ± 9.95 cm). It was observed from table that anthropometric measurements like BMI, MUAC and WHR from all income groups did not showed much different. Statistically non-significant difference was observed when compared the values among different income levels for all anthropometric measurements. Table 2 reflects the information on anthropometric measurements of selected female farm labourers as per different educational level. The values noted for height, weight, BMI, MUAC, waist circumference, hip circumference and WHR was ranged between 150.08±5.06 to 151.22±5.40cm, 48.90±10.26 to 50.08±8.59kg, 21.44±3.56 to 22.62±4.60kg/m^2, 5.35±3.96 to 25.88±4.90cm, 73.36±10.20to 5.58± 9.26cm, 87.20±10.05 to 90.18±7.89cm, 0.83±0.06 to0.84±0.08 respectively. Female farm labourers educated upto high school level recorded highest values for weight (50.08 ± 8.59kg), waist circumference (75.58 ± 9.26cm) and hip circumference (90.18 ± 7.89cm) where as secondary school educated female farm labourers showed highest values for BMI (22.62 ± 4.60) and height (151.22+ 5.40cm).

Upadhyay et.al. (2011) recordedbetter anthropometric measurements in hilli farm women as educational level increases. When statistically observed except hip circumference all other recorded anthropometric measurements showed non-significant influence of education level. The mean food intake of selected female farm labourers as per monthly family income (Table 3) revealed that consumption of cereals, pulses, green leafy vegetables, roots and tubers, other vegetables, fruits, milk and milk products, nuts and oil seeds, sugars and jaggery and meat and meat products was ranged between 290.38 to 298.59 gm, 40.31 to 42.04 gm, 18.87 to 24.60 gm, 38.98 to 43.57 gm, 30.83 to 33.44 gm, 17.62 to 19.96 gm, 10.20 to 11.02 gm, 94.67 to 97.93 ml, 18.19 to 20.40 ml, 39.05 to 40.79 gm and 11.97 to 14.25 gm respectively. However all these values were below than ICMR recommendation for all food groups except sugars and jaggery. Statistically significant difference was noted between different income groups with respect to consumption of green leafy vegetables and fats and oils. For the remaining food groups the difference was non-significant when compared between income levels. Food consumption for different food groups for different income level was near about same because as number of earning members increases in a family there was increase in family income. Most of the middle and high income group family had more family members so that effect on consumption of foods was negligible. The general food intake of most of the respondents was seen to be deficient in not only the quality and quantity also. There was lack of variety in food pattern due to economic condition as well as lack of time for preparation. In large size families situation was much poor as compared to small size families. These finding were inline with study conducted in Parbhani district by Bhalerao and Kulkarni (2007).

Mean food intake of selected female farm labourers belonging to different education group is described in Table 4. It can be revealed from the table that consumption of cereals, pulses, green leafy vegetables, roots and tubers, other vegetables, fruits, milk and milk products, nuts and oil seeds, fats and oils, sugars and jaggery, meat and meat products was ranged between 288.18 to 295.42 gm, 39.98 to 44.08 gm, 20.13 to 24.23 gm, 39.86 to 31.51 gm, 10.13 to 11.05 gm, 17.99 to 20.53 gm, 10.13 to 11.05 gm, 96.00 to 97.78 ml, 19.07 to 20.49 ml, 39.53 to 42.98 gm and 11.93 to 14.71 gm respectively. But when observed statistically, non-significant different was noted among consumption of all foods when compared as per education levels of female farm labourers. However mean food intake of selected female farm labourers belonging to different education group revealed that there was not much influence of education on consumption of different food groups. Nutrient intake of selected female farm laboures as per family income is reported in Table 5. Nutrient intake of female farm labourers for energy, protein, fat, calcium, iron, vit.C and β-carotene was ranged between 1747.52 to 1791.69 kcal, 51.34 to 54.19 gm, 32.69 to 34.67 gm, 435.51 to 449.61 mg, 14.96 to 15.57 mg, 36.57 to 41.34 mg and 1342.92 to 1647.56µg respectively. All the recorded values were below RDA except fat. When observed statistically non-significant difference was noted for all nutrient intakes.

Table 6 depicted the nutrient intake of selected female farm labourers as per different educational levels. When comparison was made per different educational levels of female farm labourers fat (33.49 to 34.53 gm) and vit.C (39.19 to 41.14 mg) intake was more than and equal to recommendation where as energy (1771.06 to 1781.40 kcal), protein (52.66 to 54.08gm), calcium (438.77 to 451.02 mg), iron (14.90 to 15.89 mg) and β-carotene (1427.82 to 16.11.02 µg) was less than RDA. Statistically non-significant difference was observed between all nutrient intake as per different educational levels of female farm labourers. The meal patterns of all surveyed respondents were almost same irrespective of education and monthly family income but change was noticed in terms of quantity of food. Change in food pattern may be due to economic condition, choices and preference of foodstuffs. Due to all these income levels seems to be more or less similar, these findings were in line with Bhalerao and Kulkarni (2007).

Summary and Conclusion

Anthropometric measurements of all subjects were measured and influence of educational level and monthly family income of subjects showed statistically non-significant difference. Inadequate consumption was noted for all food groups except and jaggery when compared with ICMR recommended values among all selected female farm labourers. Especially the consumption of green leafy vegetables, roots, tubers, other vegetables, fruits milk and milk products was less. Nutrient intake of female farm labourers was below when compare with RDA for energy, calcium, iron and β-carotene where as equal to or more for protein, fat and vit.C.

REFERENCES

Bhalerao, V.S., Kulkarni, D.N. and Shaikh, R.M. 2005. A study on working rural women with reference to their diet, nutrition, health: A social perspective. J Phychological Researches, 49 (2) : 65-70.

Indian Councial of Medical Research, 1996. Nutritive value of Indian Foods.NIN: Hyderabad.8-9

Jelliffee, D.B. 1966. The assessment of nutritional status of the community. WHO monograph seres, No. 53 : Geneva.

NCHS (National Centre for Health and Statistics) 1977.NCHS growth curves for children. Birth to 18 yrars. United States. Vital and Health Statistics.11:165.

Upadhyay, S., Kumar, A.R., Raghuvanshi, R.S. and Singh, B.B. 2011. Nutritional status and knowledge of hill women on anaemia : effect of various socio-demographic factors. Journal of Human Ecology, 33(1):29-34.

World Health Organisation 1995. Physical status : The use and interpretation of Anthropometry. Technical Report Series no. 854.Geneva: World Health Organisation.

****