

RESEARCH ARTICLE :

Impact of nutritional education on nutritional status and work participation of farm women in Khammam district

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SUMMARY : The present study objective was to assess the effect of nutrition education on nutrient intake and work participation of farm women. A sample 90 farm women in age range of 30-50yrs who were not non pregnant and non lactating and with no chronic illness were selected for the study. The pre test revealed that their nutrient intake didn't meet the RDA and their work part participation was also less. The nutrition education about the importance of balanced diet, food groups and their functions and eat right according to body requirements and working status was conducted. After intervention significant differences in food consumption pattern and nutrient intake was found. The work participation of the farm women also increased.

KEY WORDS :

Nutritional education, Farm women, Nutrient intake, Energy intake

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BACKGROUND AND OBJECTIVES

Women constitute major percentage of the agricultural labour force in the rural sector, producing much of the country's food. In rural India, the percentage of women who depend on agriculture for their livelihood is as high as 84%. Women make up about 33% of cultivators and about 47% of agricultural laborers (Singh *et al.*, 2009). These statistics do not account for work in livestock, fisheries and various other ancillary forms of food production in the country. Despite the fact that women are predominantly the food producers

for the nation, majority of them are anemic, malnourished and have health problems due to insufficient nutrient intake.

Their protein and energy intake falls below the recommended daily allowance (RDA) or recommended nutrient intake (RNI). This contributes to the high incidences of differential.

Feeding practices, which results in malnutrition and invariably low productivity. Studies with respect to female farmers' nutrition status, which is one of the major links to their health and level of productivity is being neglected. Hence, the issues of nutritional

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concerns and role of women have emerged as global concerns. Low intakes of nutrient reduce the physical capacity to work and increase the extent of fatigue accident rate and sickness. Improvement in work efficiency and output require adequate diet, sufficient not only in calories but also protein, minerals and vitamins which must be made available. This study therefore seeks to investigate and highlight female farmers' nutrition status in the study area. Particularly it seeks to assess nutrient intake of the six major nutrients needed by female farmer to enhance their reproductive and productive roles.

Objectives:

- To assess the nutritional profile of farm women
- To assess the health problem and work participation of farm women
- To conduct nutrition educational programme for farm women to bring about change in their knowledge, attitudes and habits
- To assess impact of intervention on nutritional status and work participation of farm women.

RESOURCES AND METHODS

Study has been conducted in the five locations of adopted villages of Krishi Vigyan Kendra, Wyrakhammam district. A sample of 90 non pregnant, non-lactating farmwomen, not suffering from any chronic disease and engaged in agricultural activities from last 10 years were selected purposively *i.e.* 30 subjects in each landholding category *viz.*, small farmer (SF), marginal farmer (MF) and landless agricultural laborers (LAL). Data was collected by administering the pre-tested interview schedule. All the respondents were interviewed personally by the investigator. daily food intake and nutrient intake of the respondents were calculated. The health problems and their work participation was assessed using interview schedule.

Nutrition education :

Prepared charts, handouts, manual on balanced diet, nutrition aspects, Malnutrition, nutrition deficiency diseases, Sanitation, Health, hygiene.

OBSERVATIONS AND ANALYSIS

Table 1 give information regarding food consumption

pattern of farm women. The study reveals that RDA for cereals as 350g/day but the farm women consume 339g/day. They mostly consume rice. The protein rich food pulses consumed by the farm women was found to be 27.8g with 46.3% adequacy. The percentage consumption of vegetables was only 30.6% against the recommended 75g/day. The RDA for green leafy vegetables was 125g but the farm women found to consume only 32.6g. The consumption of roots and tubers was 97.3% adequate. The fruit consumption of farm women was 11.2 against the requirement of 30g/day. The consumption of fats and oils by farm women was 79.8% adequate. The milk and milk product consumption was 66% adequate, sugar and jaggery consumption was 89.3% adequate.

Table 1 : Average consumption of food by farm women before intervention (g/day)

Food groups	RDA	N	% adequacy
Cereals	350	339	96.8%
Pulses	60	27.8	46.3%
Vegetables	75	23	30.6%
Green leafy vegetables	125	32.6	26.8%
Other roots and tubers	75	73	97.3%
Fruits	30	11.2	37.3%
Nuts, oils and fats	35	27.8	79.8%
Milk	200	132	66%
Sugar and jaggery	30	26.8	89.3%

It was concluded from the study that the food consumption pattern of farm women was not adequate. The diet was also not balanced. The diet lacked consumption of green leafy vegetables, pulses, fruits which are importance sources of micro nutrients and pulses which are main source of protein were not consumed as per the requirement.

The average nutrient intake of the farm women was presented in Table 2. The RDA for energy was 2225kcal but the energy intake by farm women was 1478.3kcal. That means only 66% of the requirement was met. The protein intake of farm women was 28.04 against the requirement of 50g/day. Recommended allowance for fat was 20g but the food consumed by the respondents was 14.89 with 74.4% adequacy. RDA for calcium intake was 400mg but the intake was 226.78mg *i.e.* only 56.6% of requirement was met. The iron intake by the farm women was only 62.9% of the requirement. The vitamin intake was found to be 22.4mg while the RDA was 40mg.

Table 2 : Average nutrient intake of farm women before intervention

Nutrients	RDA	Mean	% adequacy
Energy (Kcal)	2225	1478.34	66.4%
Protein (g)	50	28.04	56.08%
Fat (g)	20	14.89	74.4%
Calcium(mg)	400	226.78	56.6%
Iron(mg)	30	18.87	62.9%
Vitamin C(mg)	40	22.45	56.1%

The study concludes that the nutrient intake of farm women was found inadequate.

The Table 3 indicates the work participation of farm women in the farms. The study reveals that 5.7% of the respondents went to farms daily, while 35.5% of them worked in fields twice or thrice in a week. The frequency working in farms was weekly once by 26.6% and fortnightly by 32.2%. The duration of time spent in farms by majority (56%) was only 5-6hrs, while 40% of the sample spent less than 5hrs per day working in the fields. The reason for spending less time was fatigue experienced, as revealed by 83.3% of the respondents. The study also revealed that all the farm women experience work related muscle, joint pains. The study

Table 3: Work participation of farm women before intervention

Attributes	n=90	%
Frequency of going to farm		
1. Daily	5	5.7
2. Twice/thrice a week	32	35.5
3. Weekly once	24	26.6
4. Fortnight	29	32.2
Duration of time spent in farm		
1. 8-10hrs	2	2
2. 5-6hrs	52	57.7
3. >5hrs	36	40
Fatigue experience		
1. Always	75	83.3
2. Sometimes	15	16.6
3. Never	-	-
Work related pains		
1. Always	90	100
2. Sometimes	-	-
3. Never	-	-
Participation in farm related activities		
1. Full	3	3.3
2. Periodic	40	44.4
3. Half	36	40
4. Less	11	12.2

further noted that majority of the respondents perceived that their work participation as only half.

From this it was concluded that the farm women work participation was less as they easily tired and also experience lot of stress. The reason for fatigue and other related problems is due to lack of balanced diet. The study revealed that their diet lacked pulses, green leafy vegetables, fruits and millets. Nutritional education intervention was planned to increase awareness, create knowledge to bring about a change in their attitude and habits in food consumption. After intervention the food consumption pattern and work participation was post tested. The following tables reveal the impact of intervention on their nutrient intake and work participation

The Table 4 gives information about impact of nutrition education on food consumption pattern of the farm women. The analysis of the data reveal that cereal consumption of farm women before was 339g, but after intervention it was 397g, the t and p value also confirm that there is a significant difference in cereal consumption at 0.01 level of significance. The protein consumption increased from 27.8 g to 48.6 g after the nutrition education programmes on food groups. The average consumption of vegetables before intervention was 23g per day and it increased to 35.2g after intervention. The consumption of green leafy vegetables among the farm women was very low before intervention (32.6g/day) the nutrition education and knowledge about the balanced diet helped to increase the consumption to 63.1g/day. The study noted that the consumption of roots and tubers also increased and showed a significant differences before and after intervention. The consumption of other food groups like fruits, nuts, milk and jaggery also increased and the differences in consumption before and after intervention were found to be significant at 0.01 level.

The study concludes that nutrition education among the farm women helped them to understand the importance of balanced diet, functions of food groups. The knowledge changed their attitudes and increased the consumption of food groups as per the body requirements.

The impact of nutrition education on nutrient intake of farm women was presented in Table 5. From the table it was inferred that energy intake of farm women increased from 1478.34 kcal to 1897.32kcal. The protein intake was 28.04g before and 48.98 g after which showed

Table 4 : Impact of nutrition education on food consumption of farm women

Food groups	Before intervention		After intervention		t/pvalue
	Mean	SD	Mean	SD	
Cereals	339	7.8	397	3.75	63.57(0.00**)
Pulses	27.8	5.3	48.6	2.67	33.25(0.00**)
Vegetables	23	3.98	35.2	1.98	26.03(0.00**)
Green leafy vegetables	32.6	1.76	63.1	3.24	78.4(0.00**)
Other roots and tubers	73	4.8	75.7	1.32	5.14(0.00**)
Fruits	11.2	3.25	23.6	2.89	27.04(0.00**)
Nuts, oils and fats	27.8	6.72	35.6	2.64	10.24(0.00**)
Milk	132	6.98	198.5	3.53	80.04(0.00**)
Sugar and jaggery	26.8	8.21	29.8	2.09	3.3(0.01**)

Table 5 : Impact of nutrition education on nutrient intake of farm women

Nutrients	Mean	SD	Mean	SD	T value/p value
Energy (Kcal)	1478.34	10.98	1897.32	2.75	66.7(0.00**)
Protein (g)	28.04	9.78	48.98	4.67	18.3(0.00**)
Fat (g)	14.89	6.34	18.67	1.98	5.39(0.00**)
Calcium(mg)	226.78	2.76	305.78	3.09	8.8(0.00**)
Iron(mg)	18.87	1.97	24.56	5.71	8.9(0.01**)
Vitamin C (mg)	22.45	2.73	32.02	4.23	18.03(0.00**)

a significant difference. The fat consumption increased from 14.8 g to 18.67 g while intake of and iron showed significant differences between before and after intervention at 0.01 significance level. The vitamin intake was 22.45mg before intervention and increased to 32.02mg showing a significant difference. From this it was concluded that due to intervention the farm women started taking balanced diet it showed significant increase nutrient intake.

The work participation of farm women after intervention was given in Table 6. From this it was inferred that the farm women who worked in the field mostly once or twice in a week, 96.6% of them started working in fields daily. The duration of time spent by majority *i.e.* 71.1% of them was 8-10hours per day. It was interesting to note from the study that farm women who felt fatigue easily before intervention expressed that they were not getting tired easily and work related pains also were found to be less. The farm women (86.6%) perceived that their work participation in fields were to full extent.

Conclusion :

Agriculture being the main occupation of rural people, majority of rural women work in farms of their own or as agricultural labourers. The farm women come

Table 6 : Work participation of farm women after intervention

Attributes	n=90	%
Frequency of going to farm		
1. Daily	87	96.6
2. Twice/thrice a week	13	14.4
3. Weekly once	-	-
4. Fortnight	-	-
Duration of time spent in farm		
1. 8-10hrs	64	71.1
2. 5-6hrs	20	22.2
3. >5hrs	6	6.7
Fatigue experience		
1. Always	-	-
2. Sometimes	9	10
3. Never	81	90
Work related pains		
1. Always	-	-
2. Sometimes	20	22.2
3. Never	70	77.8
Participation in farm related activities		
1. Full	78	86.6
2. Periodic	12	13.4
3. Half	-	-
4. Less	-	-

under moderate worker category, the present study found that the nutrient intake of farm women was not adequate as per the ICMR recommendations. The work participation was also not full extent by these women as they experienced fatigue very easily. The nutritional education programme on balanced diet, food groups and its functions and the importance of correct diet to meet the body requirements was conducted for the farm women. The diet survey and 24 recall method revealed the after intervention the food consumption of farm women changed and nutrient intake was increased. The work participation of farm women also increased with better nutrition.

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