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Nutritional status and physical activity pattern of rural farm women

¹Rashmi Singh and ²Deepti Singh

¹Department of Food Science and Nutrition College of Home Science, CSAUA&T., Kanpur, Uttar Pradesh, India

²SMS Home Science, KVK, Agra, Uttar Pradesh, India

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Corresponding Author: Rashmi Singh

Abstract

Women regarded as “Creator of all green things”. Besides performing domestic duties she provides crucial support to the family through the earning wages doing labor and carrying out household production activities. Agriculture is the largest industry in India and women constitute 50 per cent of the agricultural work force in our country. Women participate in almost all agricultural operations and recognized as backbone of Indian agriculture.

The present study was conducted to assess the nutritional status and physical activity pattern of rural farm women of Kanpur district. To achieve the objective of the study sixty farm women from *singhpur* village were selected. Information regarding general profile, nutrient intake by 24 hour recall method was collected. Measurement of body weight, height, MUAC, waist and hip circumference were recorded (Gibson, 1990). Physical activity pattern of subjects was assessed by IPAQ and 24 hour physical activity recall method. Statistical analysis of the data was done and the result revealed that daily average nutrient intake of farm women was found to be less than RDA. Mean Body Mass Index (BMI) was found to be 19.39 ± 1.52 which indicates energy deficit in rural farm women studied. Physical activity pattern revealed that rural farm women perform various activities related to agriculture; it was found that they spend maximum time in harvesting of crops during season. The study concludes that it is required to raise the nutritional status of farm women so that their efficiency can be increased.

Keywords: Farm women, nutritional status, physical activity, anthropometry, nutrient intake

Introduction

Agriculture is the largest industry in India and women constitute 50 per cent of the agricultural work force in our country. It is estimated that women are responsible for 70 per cent of actual farm and constitute up to 60 per cent of the farming population. Women participate in almost all agricultural operations and recognized as backbone of Indian agriculture.

The women in India like in many other developing countries are silent workers labouring hard from dawn to dusk on the interest of their farm and home. Rural women often manage complex households and pursue multiple livelihood strategies. Irrespective of their degree of affluence, they provide 14-18 hours of productive physical labour every day in a wide variety of activities directly connected with agriculture, allied and domestic chores (Swarupa and Ashlesha, 2019)^[5].

Women are usually vulnerable to malnutrition for both social and biological reason throughout their life cycle (Yadav and Revana, 2017)^[8]. Health status of women affect their productivity and thereby their roles in society and their own development (Vats, 2006)^[6]. A normal balanced diet must include daily foods from the various food groups in sufficient amount to meet the needs of an individual and to increase the immunity. Although women are food producers at farm and household level their own nutrition situation is not encouraging all over the developing countries including India (Misra and Singh, 2017)^[4].

Considering the importance of nutritional status of farm women, the present study was carried out with the objective to assess the nutritional status and physical activity pattern of farm women

Objectives

1. To assess the anthropometric measurements of the rural farm women
2. To assess the food habits and nutrient intake of the rural farm women
3. To assess the physical activity pattern of the rural farm women

Methodology

Present study was carried out in district Kanpur of Uttar Pradesh. Sixty rural farm women who were performing agricultural and allied activities were selected from block *Kalyanpur* and village *Singhpur*. General information of the respondents was collected using structured questionnaire. Survey was done using a cross sectional study design. Nutritional status of all selected rural farm women was assessed by determining the nutrient intake using 24 hour recall method. The nutrient intake was compared with recommended Dietary allowances (RDA) given by ICMR 2020^[1]. Height, Weight, MUAC, Waist and Hip circumference was measured using standard instruments and technique (Lohmann 1988)^[3]. Body Mass index (BMI) was calculated and was categorised as per classification given by

WHO (2004) [7]. Waist Hip Ratio (WHR) was calculated by dividing waist circumference and hip circumference. Physical activity pattern of subjects was assessed by The International Physical activity Questionnaire (IPAQ) method.

Results and Discussion

Survey results of the study revealed that maximum 83.3 per cent women surveyed were between 30 to 50 years of age. All of the subjects (100%) were married and 80 per cent were literate. Family Size varied from 3-12 members about 56.6 per cent of the women had medium family size having 5-8 members in the family. Most families had agriculture as their main occupation (Table 1). It was found that 95 per cent of selected farm women were vegetarian and 63.3 per cent of women had twice meal consumption pattern. Table 2 clearly depicts the average daily intake of energy, protein and iron by the farm women is lower than the RDA values. Energy is essential for carrying out both voluntary and involuntary work. Certain amount of energy is used in basal metabolism like respiration, blood circulation, digestion, absorption and excretion. It is also used in rest, activity and growth. Average energy intake by rural farm women was found to be 1805±163.5 kcal per day which is only 80 per cent adequate when compared with RDA. Low protein intake and energy intake less than RDA results in malnutrition and invariably low productivity. Average protein intake was only 51 per cent adequate. In the present study protein intake was significantly less in the subjects as compared to energy. Iron intake was less than 50 per cent of RDA which indicates lack of green leafy vegetables and plant and animal protein in the diet.

The physical growth can be measured using various anthropometric parameters. The most widely anthropometric measurements of growth are height (stature) and body weight. The information on height indicates past nutritional status whereas body weight gives an indication of the current nutritional status to identify the individual as underweight, overweight or retarded growth. Indices could be constructed from raw growth measurements. Anthropometric indices are of increasing importance in nutritional assessment as these measurements are easy, quick and accurate. BMI is assessed by calculating the body weight and height to classify the subjects in to groups depending on their nutritional status. The pattern of physical growth is similar in all individuals but the rate varies depending upon various genetic and environmental factors. Rural farm women recorded mean height of 152.9±2.14cm and mean weight of 45.9±5.84kg which are below standards when compared at national level (Table 3). This could be due to type of food consumed by the selected population because the food consumption is one major factor which influences the nutritional status of the population. Mid upper arm Circumference (MUAC) indicates the muscle depot in the subject. Wasting of muscles occur in the condition of protein deficiency. Average MUAC was found to be 10.49±0.52 cm. Mean BMI was found to be 19.39±1.52 kg/m² which indicates low normal physiological status. Physical activity pattern of farm women revealed that 91.6 per cent were actively engaged in land and seed preparation and sowing activity. Seed preparation and sowing was being

carried out by 100 per cent of farm women (Table 4). Agricultural activities are energy demanding process creating a sort of psycho-physiological stress on the body, while working in agricultural field for six to eight hours. Kishtwaria *et al* (2009) [2] reported that majority of women were involved in performing various farm activities i.e. cutting (85.52% and weeding 79.32%. Present study also agrees that farm women were engaged in grass cutting, sowing, harvesting etc.

Table 1: Socio demographic Profile of Farm Women

Characters	Frequency	Percentage
Age (years)		
30-50	55	91.66
>51	05	8.33
Education		
Degree	0	0
Intermediate	03	5
High School	0	0
Middle School	27	45
Primary	18	30
Illiterate	12	20
Marital status		
Married	60	100
Unmarried	0	0
Type of Family		
Joint	50	83.33
Nuclear	10	16.66
Family Size		
Small 1-4	1	1.66
Medium 5-8	34	56.66
Large >8	25	41.7
Family Occupation		
Labour	08	13.33
Agriculture	42	70
Business	10	16.66

Table 2: Mean Nutrient intake of farm women in comparison with RDA

Nutrients	RDA	Mean±SD	% adequacy
Protein (g)	55	28.47±2.24	51.76
Fat (g)	30	27.85±4.87	92.83
Energy (kcal)	2230	1805±163.5	80.94
Iron (mg)	21	9.21±2.47	43.85

Table 3: Anthropometric Measurement of the farm women

Particulars	Mean±SD
Height (cm)	152.9±2.14
Weight (Kg)	45.9±5.84
BMI (Kg/m ²)	19.39±1.52
MUAC (cm)	10.49±0.52
Waist Circumference	27.33±1.41
Hip circumference	32.17±1.57
WHR	0.85±0.03

Table 4: Physical activity Pattern of Farm Women

S. No.	Activity	n	Percentage (%)
1.	Land preparation +seed preparation+ sowing	55	91.66
2.	Weeding +harvesting	40	66.66
3.	Carry load over the head+ harvesting	30	50
4.	Fertilizer application+ weeding	20	33.33
5.	Water Management+ sowing	30	50
6.	Seed preparation + sowing	60	100
7.	Water Management+ Hand pounding	20	33.33
8.	Grass Cutting + Hand pounding	30	50

Conclusion

The present study concludes that the nutrient intake of farm women was not adequate as per RDA and thereby their physical variables like height, weight and MUAC were also less than national standards. Physical activity pattern reveals that the farm women carry out various moderate energy consuming farm activities. The negative effects of malnutrition among women are compounded by heavy work demands and special nutritional needs of women resulting in increased susceptibility to illness and consequently higher morbidity. Therefore it is urgent and important to provide nutrition education to farm women so that they can provide balanced diet to their family and themselves too.

Farm women are still using traditional methods of agricultural work which are laborious and adds burden on the shoulders of women thereby increases the drudgery level affecting their nutritional status and reducing productivity. Therefore, the agricultural policies and programmes need to be more sensitive to make positive impact on health and productivity of farm families.

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