

A comparative study- impact of nutrition education on dietary fibre knowledge in urban and rural women of Nainital district

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Abstract

The present investigation was undertaken with the objective to assess the nutrition status and to provide education material (viz. Booklet and entitled Aahar Fibre, Fibre Ka Swasthya Jeevan Me Yogdan) to urban and rural women and to assess its impact in terms of knowledge scores. A total of 100 subjects out of 50 from urban and 50 from rural women (aged 20-55 years) were selected from Haldwani Block of Nainital District in Uttarakhand. Gain in knowledge in terms of percentage increases in knowledge score of urban was more than rural women. It was found that nutrition status of urban women was better than rural women and the booklet used for imparting nutrition education was effective among both the subjects.

Key words: Dietary Intake, Dietary Fibre, Anthropometry, Clinical Assessment, Nutritional Adequacy

Introduction

The nutritional and health status of women is of great concern in the contemporary world because the multiple role played by women gives rise to serious health and nutritional problems. The importance of nutrition education as a mean for improving the nutritional status of the country has been increasingly realized. Education for women is the best way to improve the health, nutrition and education status of a household that constitute a micro unit of a nutritional economy. Dietary fibre is a necessary component of human diet and the knowledge about fibre in the light of its health benefits can lead to reduction in the number of diseases. Fibre or roughage as it also known as carbohydrates and is found naturally in plant. Nutrition education as an education measure for inducing desirable behavioral changes for ultimate improvement in the nutritional status of individual to learn about the essential of nutrition for health and to take improve the quality of their diets.

Keeping the above factors in view the present study has conducted with the following objectives:

1. To assess the nutritional status of urban and rural women.
2. To assess the knowledge related to dietary fibre among urban and rural women.
3. To analyze the impact of nutrition education on nutrition knowledge of urban and rural women.

Materials and Methods

The present study was conducted in Haldwani block of Nainital district Uttarakhand. Total 100

samples of women were randomly selected from urban (50 each) and rural (50 each) of Haldwani block. The study was conducted during March- April 2013. The entire study was carried out in two phases. In phase I general information about anthropometry measurements, clinical measurements, nutrition knowledge test were taken and booklet containing "Importance of Dietary fibre" was distributed among women. In Phase II after the interval of 15 days, again same knowledge test was taken by questionnaire methods were related to dietary fibre. Well structured interview schedule questionnaire was prepared. The Performa consists of questions related to socio-economic details, food frequency intake and dietary fibre knowledge.

Anthropometry measurements include height and weight of subjects. Clinical assessment was done by recording the nutritional deficiency signs and symptoms on skin, eyes, hair, tongue, lips, nails etc.

Results and Discussion

1. General profile

General profile of the subjects was taken including family type, family size, food habits, education status of women, occupation of male head member, occupation of women, income as depicted in Table 1.

The study shows that the percentage of most of families were of nuclear type. The percentage of nuclear families was 74 and 78 among urban and rural women respectively. Literacy rate among urban was higher than rural women i.e. 60% and 70%.

Table 1: General profile of urban and rural women (percent of subjects)

S. No.	Particulars	Urban woman (N=50)	Rural woman (N=50)
1.	Age (year)		
	20-25	6	6
	25-30	16	22
	30-35	14	26
	35-40	16	10
	40-45	14	14
	45-50	34	18
	50-55	-	4
2.	Family type		
	Nuclear	74	78
	Joint	26	22
3.	Family size		
	1-4	48	36
	5-8	48	60
	>8	2	4
4.	Food habits		
	Vegetarian	28	48
	Non-vegetarian	72	52
5.	Educational status of woman		
	Illiterate	-	-
	Primary	2	22
	Secondary	8	8
	High school	18	22
	Intermediate	12	18
	Graduation	60	30
6.	Occupation of male head member		
	Service	66	44
	Business	34	4
	Labour	-	-
	Farmers	-	52
7.	Occupation of woman		
	Service	22	-
	Business	6	-
	Labour	-	-
	Farmers	-	6
	House wife	72	94
8.	Income		
	Class-I	50	20
	Class-II	38	22
	Class-III	12	58
	Class-IV	-	-
	Class-V	-	-

Table 2: Distribution of urban and rural women according to Body Mass Index (BMI) (percent of Subjects)

S. No.	Nutritional status	Urban woman (N=50)	Rural woman (N=50)
1.	Severe	2.0	4.0
2.	Moderate	2.0	4.0
3.	Mild	2.0	4.0
4.	Low weight normal	8.0	4.0
5.	Normal	32.0	28.0
6.	Obese grade - I	32.0	22.1
7.	Obese grade - II	22.0	12.1

2. Assessment of Nutritional Status:

Anthropometry methods for nutrition status assessment are particularly used in circumstances, where chronic imbalances of protein and energy are likely to exist. Body Mass Index (BMI) provides a reasonable indication of the nutritional status of adults. BMI has good correlation with fatness and may also be used as an indicator of health risk. On the basis of BMI, the subjects was categorized into those having severe, moderate and mild malnutrition, normal and obese category as depicted in Table 2. There was little difference in the percentage of BMI of both the subjects (urban and rural women)

3. Dietary Information regarding frequency of consumption of foods by both the subjects

Frequency of consumption of foods among urban and rural women (percent of the subjects) was presented in Table 3 and 4. In Table 3 and 4 food items with their daily, twice a week, monthly, frequently intake was given. Frequency of consumption of cereals, pulses, green leafy vegetables, fruits, nuts and oilseeds, spices and condiments, meat/fish and poultry products. It was found that cereals, pulses, nuts and oilseeds, spices and condiments and milk and milk products were consumed daily while the consumption of other food groups vary from twice/a week, weekly frequently and never. Consumption of fruits was found less by rural women due to lower economic reason.

Table 3: Consumption frequency of foods among urban women (percent of subjects)

S. No.	Food items	Daily	Twice a week	Weekly	Frequently	Monthly	Never
1.	Cereals	100.0	-	-	-	-	-
2.	Pulses	98.0	2.0	-	-	-	-
3.	Leafy vegetable	28.0	22.0	44.0	6.0	-	-
4.	Root and tubers	22.1	6.0	52.0	20.0	-	-
5.	Nuts and oilseeds	98.0	-	-	2.0	-	-
6.	Spices and condiments	100.0	-	-	-	-	-
7.	Meat, fish, and poultry products	-	6.0	46.0	2.0	20.0	24.0
8.	Milk & milk products	100.0	-	-	-	-	-
9.	Fruits	50.0	2.0	24.0	14.0	30.0	30.0

Table 4: Consumption frequency of foods among rural women (percent of subjects)

S. No.	Food items	Daily	Twice a week	Weekly	Frequently	Monthly	Never
1.	Cereals	100.0	-	-	-	-	-
2.	Pulses	60.0	4.0	34.0	-	-	-
3.	Leafy vegetable	26.0	16.0	28.0	2.0	-	8.0
4.	Root and tubers	12.0	8.0	78.0	-	-	2.0
5.	Nuts and oilseeds	100.0	-	-	-	-	-
6.	Spices and condiments	100.0	-	-	-	-	-
7.	Meat, fish, and poultry products	-	-	22.0	28.0	28.0	50.0
8.	Milk & milk products	100.0	-	-	-	-	-
9.	Fruits	6.0	-	10.0	12.0	12.0	68.0

Table 5: Prevalence of clinical signs and symptoms among urban and rural women (Percent of subjects)

S. NO.	List of proteins, vitamins and minerals deficiency	Percentage of subject suffering from deficiency urban women (N=50)	Percentage of subject suffering from deficiency rural women (N=50)
1	Vitamin – A		
	Night blindness	18	14
	Bitot spots	16	8
2	Calcium		
	Osteoporosis	46	48
3	Vitamin – C (Scurvy)		
	Weakness	42	50
	Dry skin	22	18
	Bleeding gums	30	34
	Teeth loose	40	42
4	Vitamin B ₁ (Thiamine)		
	Knee jerk	44	32
	Ankle jerk	50	32
	Anorexia	32	42
	Weakness & pain of legs (Calf muscles)	38	42
5	Vitamins B ₂ (Riboflavin)		
	Chelosis	16	22
	Angular stomatis	10	24
	Burning of feet	60	52
	Scaliness of skin	26	40
6	Vitamin B ₃ (Niacin)		
	Dermatitis	24	50
	Dementia	32	24
	Diarrhea	5	10
7	Vitamins B ₆ (Pyridoxine)		
	Weakness	40	52
	Loss of sleep	28	36
8	Vitamin B ₁₂ (Cobalamine)		
	Heart burn	46	42
	Depression	20	28
	Mental confusion	8	20
9	Iron		
	Fatigue	46	60
	Dullness and pale skin	16	30
	Spoon shape Nails	36	42
10	Iodine		
	Goiter	-	1
	Weight gain	16	12
	Wrinkled	26	16
	Lethargic	16	26

4. Clinical Assessment:

Clinical examination is an important practical method for assessing the nutritional status of a community. The assessment of nutritional status of women were examined for over signs of malnutrition such as muscle wasting, angular stomatitis, bleeding gum, dermatitis, paleness of skin etc. prevalence of clinical signs and symptoms among urban and rural women (percent of the subjects) was representing in Table 5. The perusal of Table V clearly depicts lists of proteins, vitamin and mineral deficiency including vitamin A, vitamin D, Vitamin C (Scurvy), Vitamin B₁ (Thiamine), Vitamin B₂ (Niacin), Vitamin B₆ (Pyridoxine), Vitamin B₁₂ (Cobalamins), Iron and Iodine. Deficiency of Vitamin C, Vitamin B, Iron, Calcium, was found in both the subjects.

5. Impact of assessment of Nutrition Education

The impact of Nutrition education material viz. booklet was assessed on the knowledge of urban and rural women. The impact of booklet on knowledge level of urban and rural women at pre- exposure and post- exposure stage. At pre- exposure level the knowledge average scores percentage of urban and rural women was 54.35±3.26 and 68.10±2.22. After the distribution of booklet, the knowledge level of both the subjects was tested again on same test and average score percentage of urban and rural women was found to be increasingly significantly 89.74±1.62 and 70.84±6.24. It was observed that the percentage gain in knowledge after 15 days by urban women was 28.9 percent and rural women were 26.8. Table 6 shows the data of gain in nutrition knowledge of urban and rural women. Co-relation analysis revealed that gain in knowledge of urban and rural women was positive co-related with education of women.

Table 6: Pre-exposure, post exposure and gain in knowledge after 15 days by urban and rural women (percent of subjects)

Groups	Pre-exposure	Post-exposure	Gain in knowledge after 15 days
Urban women	62.4	90.9	28.9
Rural women	60.7	87.5	26.8

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