

Empowering rural women through distance education

■ Soujanya S. Hiremath and Uma S. Hiremath

Department of Extension and Communication Management, College of Home Science, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA (Email : hiremathuma57@gmail.com)

ARTICLE INFO:

Received : 22.08.2012
Revised : 18.03.2013
Accepted : 21.04.2013

KEY WORDS:

Empowering, Rural women, Distance education

HOW TO CITE THIS ARTICLE :

Hiremath, Soujanya S. and Hiremath, Uma S. (2013). Empowering rural women through distance education, *Adv. Res. J. Soc. Sci.*, 4 (1) : 17 - 22.

ABSTRACT

Distance Education is a field of education that focuses on teaching methods and technology with the aim of delivering teaching. Often on an individual basis, to students who are not physically present in traditional educational system such as a classroom. An experimental study was conducted on Empowering rural women through distance education with the objective to assess the knowledge of selected rural school dropout girls and women at pre and post stage of the distance education. The sample consisted 120 school dropout girls and women who were selected from four villages viz., Harobelawadi, Uppinbetagri, Mansur, Garag of Dharwad taluka. After the education the results revealed that 78 per cent of the respondents gave correct answer about fat followed by water and fibre (76.66%), vitamins (75%), minerals (74.16%), protein (67.50%) and carbohydrate (56.67%). The knowledge about fat shows that majority of respondents gave correct answer for fat and energy, fat storing parts in body and deficiency of essential fatty acids. Above 90 per cent of the respondents answered rightly for functions of kidney and water, and name of fruits containing more water. High majority of the respondents answered correctly with respect to poor man's almond, causes for deficiency of vitamin A and D. Majority of the respondents were able to answer about deficiency features of iron, iodine, minerals and thyroid gland. More than 80 per cent of the respondents gave correct answer for role of protein in body immunity and protein rich foods. Similarly, the knowledge about carbohydrate showed that more than 50 per cent of the respondents answered rightly for sources and functions of carbohydrate.

INTRODUCTION

Higher literacy and education levels are thought to address several chronic problems high population growth, high income inequality, limited access to education for women and other socially disadvantaged groups, and lower economic growth-of many developing nations. In the recent past, distance education by dispersing education to rural areas, by providing access to minority groups, and by reducing the cost of education has been seen as an effective way of improving education. Countries such as India and South Africa, once considered less-developed countries, are increasingly using advanced technologies in business, industry and government (Eastmond, 2000).

The distance education mode was adopted by many universities to meet the ever-growing demand of those students who lacked means to pursue higher education through the

regular stream. Also, there were economic constraints. Consequently, many universities in India in various regions started correspondence courses or programmes by providing notes, developing a system of evaluation of response sheets. The success of these courses led to the establishment of Indira Gandhi National Open University (IGNOU), which is now rated as one of the best distance courses university in the world. Hence, the present study was planned with the objective to study the change in knowledge of rural girls and women about nutrients before and after the distance education.

METHODS

The study was carried out during the year 2011 -2012 in randomly selected four villages viz., Harobelawadi, Uppinbetageri, Mansur, Garag of Dharwad taluka. Purposive random sampling method was used to select 120 school

dropout girls and women, 30 in each village to know the knowledge level of nutrients before and after the distance education. To study the impact before and after type of experimental study was adopted. To know the level of knowledge about nutrients, pre test of the selected respondents was conducted with the help of structured schedule through Multiple choice and True or False type of questions.

A booklet on Nutrients of Food was prepared by the researcher with elaborated information in local simple language Kannada. To make it effective and attractive, relevant pictures and live photographs about food were taken. Every care was taken to understand the content easily by the readers. The booklet consisted of six chapters *viz.*, carbohydrates, protein, fat, vitamins, minerals and water and fibre. At the end of each chapter some simple questions were asked in the form of exercise and all chapters were summarized in the form of Important points to be remembered.

Course outline developed for the syllabus of nutrients of food:

Chapters
I. <i>Protein</i> : Importance, functions, sources, deficiency diseases, Preventive measures through diet.
II. <i>Carbohydrate</i> : Importance, functions, sources, deficiency diseases.
III. <i>Fat</i> : Importance, functions, sources, deficiency diseases.
IV. <i>Vitamins</i> : Importance, sources, functions, classification, water soluble and fat soluble vitamins, deficiency diseases of vitamin A, B (Thiamin, Riboflavin, Niacin, Folic acid, B12) C and D.
V. <i>Minerals</i> : Importance, classification, functions, sources, deficiency diseases of - calcium, iron, iodine, zinc.
VI. <i>Water and fibre</i> : Importance, sources, functions, Questions: Multiple choice and True or False type. - Important points to be remembered

The booklet was distributed to each of the selected respondents and they were given two months time to read, understand and clarify the doubts of the contents of the distributed booklet. During these two months time, contact classes were conducted in each village at the end of each week to clarify the doubts in the lessons of reading material supplied. After two months of study duration, post-test was conducted with the help of schedule developed for pre test to know the impact of distance education. Change in knowledge about nutrients was measured by assessing pre and post-test results of distance education by using frequencies, mean, percentage and paired 't' test .

OBSERVATIONS AND ANALYSIS

Table 1 depicts knowledge of the respondents before and after distance education about nutrients. It included six chapters on protein, carbohydrate, fat, vitamins, minerals and water and fibre.

In protein chapter, there was good increase in the number of respondents from 69.16 to 83.34 per cent after the education for protein and body immunity. Similarly, there was increase from 47.50 per cent to 53.34 per cent and 41.66 per cent to 71.66 per cent for deficiency of protein and marasmus and for functions of protein, respectively. The lowest number of respondents found in recommended quantity for adults (26.66%) and protein deficiency disease in children (22.50%) which was increased to 60.84 per cent and 54.16 per cent, respectively. The knowledge about protein rich foods increased by about 20 per cent after the education (Table 1).

In carbohydrate chapter, there were more number of respondents who had scored very low before the education, scored high with respect to nutrients in potato (14.16 % to 46.66%), carbohydrate rich foods (15.84% to 54.16%), sources of carbohydrate (20.84% to 54.16%) and functions of carbohydrate (26.66% to 58.34%). About 75.83 per cent of the respondents gave correct answer towards carbohydrate rich food grains in post test which was 30.84 per cent in pre-test.

In the next chapter knowledge regarding fat, majority of the respondents (65.84%) answered rightly for fat storing parts in body followed by fat and energy (60.00%) before the education which was increased to 86.66 per cent and 87.50 per cent, respectively after the education. More than 55 per cent of the respondents gave correct answer with regard to protective foods after the education which was very low (16.66%) before the education. Less number of respondents scored very low with respect to deficiency of essential fatty acids (26.67%), source of fat (32.50%) and 'use of stored fat' (36.66%) which were increased to 84.16, 70.84 and 82.50 per cent, respectively after the education.

In vitamins chapter, after the post-test there was increase in the number of respondents from 75.00 to 95.00 per cent who answered correctly for poor man's almond. Similarly there was an increase in the respondents from 60.84 to 80.00 per cent and 58.33 to 90.00 per cent with respect to rickets and marasmus and deficiency of vitamin A causes, respectively. The number of respondents answered for vitamin C and vitamin D found to be 20.84 per cent and 38.33 per cent which was increased to 43.34 per cent and 83.34 per cent, respectively after the education.

In minerals chapter, very few of the respondents answered for iron and haemoglobin (19.16%) and minerals and anaemia (24.16%) before the education which were increased to a high percentage of 62.50 and 65.84,

Table 1 : Knowledge of respondents before and after distance education about nutrients (n=120)					
Sr. No.	Subject particulars	Distance education			
		Before		After	
		Correct answer		Correct answer	
		F	%	F	%
Chapter I : Protein					
1.	Recommended quantity of protein per day for adults	32	26.66	73	60.84
2.	Functions of protein	50	41.66	86	71.66
3.	Protein deficiency disease in children	27	22.50	65	54.16
4.	Protein rich foods	75	62.50	99	82.50
5.	Protein and body immunity	83	69.16	100	83.34
6.	Deficiency of protein and Marasmus	57	47.50	64	53.34
Chapter II : Carbohydrate					
1.	Functions of carbohydrate	32	26.66	70	58.34
2.	Carbohydrate rich foods	19	15.84	65	54.16
3.	Nutrients present in potato	17	14.16	56	46.66
4.	Carbohydrate rich food grains	37	30.84	91	75.83
5.	Sources of carbohydrate	25	20.84	65	54.16
6.	Energy yielding food sources	32	26.66	62	51.66
Chapter III : Fat					
1.	Protective foods	20	16.66	68	56.66
2.	Sources of fat	39	32.50	85	70.84
3.	Use of stored fat	44	36.66	99	82.50
4.	Deficiency of essential fatty acids	32	26.67	101	84.16
5.	Fat and energy	72	60.00	105	87.50
6.	Fat storing parts in body	79	65.84	104	86.66
Chapter IV : Vitamins					
1.	Deficiency of vitamin A causes	70	58.33	108	90.00
2.	Poor man's almond	90	75.00	114	95.00
3.	Vitamin 'C' rich fruits	25	20.84	52	43.34
4.	Deficiency of vitamin 'D' causes	46	38.33	100	83.34
5.	Rickets and Marasmus	73	60.84	96	80.00
6.	Bow legs in Rickets	29	24.16	69	57.50
Chapter V : Minerals					
1.	Calcium rich food grain	56	46.66	90	75.00
2.	Minerals and thyroid gland	54	45.00	94	78.34
3.	Iodine deficiency	90	75.00	97	80.84
4.	Minerals and anaemia	29	24.16	79	65.84
5.	Iron and haemoglobin	23	19.16	75	62.50
6.	Features of iron deficiency	74	62.66	99	82.50
Chapter VI : Water and fibre					
1.	Per day requirement of drinking water	23	19.17	85	70.84
2.	Fruits containing more water	101	84.16	111	92.50
3.	Food advised during vomiting and diarrhoea	23	19.16	70	58.33
4.	Excrete of waste products from the body	30	25.00	80	66.67
5.	Water and digestion	25	20.84	86	71.66
6.	Functions of kidney and water	113	94.16	119	99.16

respectively. There was an increase in the number of respondents who answered correctly for calcium rich food and minerals and thyroid gland, from 46.66 to 75.00 per cent and 45.00 to 78.34 per cent, respectively among all women.

In water and fibre chapter, the lowest scored respondents with respect to food during vomiting and diarrhoea (19.16%), per day requirement of drinking water (19.17%), water and digestion (20.84%) and excrete of waste products from the body (25%) increased to high number *i.e.*, 58.33, 70.84, 71.66, and 66.67 per cent, respectively after the education among all women.

Table 2 depicts the chapter wise knowledge of respondents before and after the distance education with regard to nutrients. Out of 6 chapters, less per cent of respondents (22.50 and 40.00) gave correct answer with respect to the II and III chapters carbohydrate and fat which increased to 56.67 per cent and 78.33 per cent after the education. With regard to IV, V and VI chapters vitamins minerals and water and fibre number of respondents who gave correct answers increased from 45.83 to 75.00 per cent, 45.00 to 74.16 per cent and 43.33 to 76.66 per cent, respectively.

Chapter wise knowledge of the respondents after the education reveals that 78 per cent of the respondents gave correct answer about fat followed by water and fibre, vitamins, minerals, protein and carbohydrate. The knowledge about fat shows that majority of respondents gave correct answer for fat and energy, fat storing parts in body and deficiency of essential fatty acids. Above 90 per cent of the respondents answered rightly for functions of kidney and water, and name of fruits containing more water. High majority of the respondents answered correctly with respect to poor man's almond, causes for deficiency of vitamin A and D. Majority of the respondents were able to answer about deficiency features of iron, iodine, minerals and thyroid gland. More than 80 per cent of the respondents gave correct answer for role of protein in body immunity and protein rich foods. Similarly the knowledge about carbohydrate showed that more than 50 per cent of the respondents answered rightly for sources and functions of carbohydrate.

The possible reasons for the good impact on these

subjects after the education might be that, selected respondents are growing locally and using cereals and pulses in their daily diet, which may lead to elicit more information about the advantages of consuming such food grains.

Attractive photographs have made them to remember the deficiency diseases caused by different nutrients like protein, carbohydrate, fat, vitamins and minerals. Workers of local anganawadi and primary health centre were also involved in organising mothers meeting and home visits where in they gave information about food, nutrition and deficiency diseases. Hence, this extension contact also might have helped them to remember more. Usually rural people maintain one or two milch animal and use ample of butter, ghee and cheese. Hence, they may be eager to know the effects of eating fat rich foods on their health.

Chapter I - Protein:

Table 3 reveals the impact of distance education on knowledge about nutrients. In chapter I, the pre test mean knowledge score of protein was found to be low in Mansur (7.80) followed by Uppinbetageri (8.26), Garag (8.40) and Harobelawadi (8.53), whereas, post-test mean score was found to be high in Uppinbetageri (10.13) followed by Harobelawadi (10.06), Garag (9.73) and Mansur (9.50). After the post-test, increase in the mean knowledge score about protein showed by the respondents of Uppinbetageri (8.26 to 10.13), Harobelawadi (8.53 to 10.06), Garag (8.40 to 9.73) and Mansur (7.80 to 9.50) villages and the increase was significant at 0.01 level.

Chapter II - Carbohydrate:

In carbohydrate chapter, pre test mean knowledge score was found to be low in Garag (7.10) followed by Uppinbetageri (7.13), Mansur (7.16) and Harobelawadi (8.00), whereas, post-test mean score found to be high in Mansur (9.50), equal in Uppinbetageri and Harobelawadi (9.43 each) and Garag (9.26). After post-test increase in the mean knowledge score showed by the respondents of Mansur (7.16 to 9.50), Uppinbetageri (7.13 to 9.43), Harobelawadi (8.00 to 9.43) and Garag (7.10 to 9.26) villages and the increase was

Chapter No.	Subjects	Distance education			
		Before		After	
		Correct answer		Correct answer	
		F	%	F	%
1.	Protein	54	45.00	81	67.50
2.	Carbohydrate	27	22.50	68	56.67
3.	Fat	48	40.00	94	78.33
4.	Vitamins	55	45.83	90	75.00
5.	Minerals	54	45.00	89	74.16
6.	Water and Fibre	52	43.33	92	76.66

significant at 0.01 level (Table 3).

Chapter III - Fat:

In chapter three, the values of fat exhibited low mean knowledge score in Garag (7.60) followed by Mansur (8.40), Uppinbetageri (8.46) and Harobelawadi (9.06). In post-test Harobelawadi (10.96) followed by Uppinbetageri (10.86), Mansur (10.60) and Garag (10.30) scored high. After the post-test increase in the mean knowledge score showed by the respondents of Harobelawadi (9.06 to 10.96), Uppinbetageri (8.46 to 10.86), Mansur (8.40 to 10.60) and Garag (7.60 to 10.30) villages and the increase was significant at 0.01 level (Table 3).

Chapter IV - Vitamins:

In vitamins chapter, the mean knowledge score of pre

test was found to be low in Uppinbetageri (8.96), equal in Garag and Mansur (9.06 each) and Harobelawadi (9.66), but post test mean score was found to be high in Uppinbetageri (10.56) followed by Mansur (10.53), Harobelawadi (10.50) and Garag (10.36). After the post-test increase in the mean knowledge score about vitamins showed by the respondents of Uppinbetageri (8.96 to 10.56) Mansur (9.06 to 10.53), Harobelawadi (9.66 to 10.50) and Garag (9.06 to 10.36) villages and the increase was significant at 0.01 level.

Chapter V - Minerals:

In the chapter five, the pre test mean knowledge score regarding minerals was found to be low in Uppinbetageri (8.23) followed by Mansur (8.63), Garag (8.76) and Harobelawadi (9.23), whereas post-test mean knowledge score was also found to be high in Uppinbetageri (10.66) followed

Table 3 : Impact of distance education on knowledge about nutrients (n=120)			
Particulars	Pre test mean(SD)	Post test mean(SD)	Paired t-value
Chapter I : Protein			
Uppinbetageri	8.26(1.04)	10.13(1.10)	7.140**
Harobelawadi	8.53(1.35)	10.06(1.50)	4.138**
Garag	8.40(1.05)	9.73(0.98)	4.746**
Mansur	7.80(1.15)	9.50(1.10)	6.567**
Chapter II : Carbohydrate			
Uppinbetageri	7.13(0.89)	9.43(1.45)	6.519**
Harobelawadi	8.00(1.41)	9.43(1.47)	3.870**
Garag	7.10(0.92)	9.26(1.28)	7.740**
Mansur	7.16(0.87)	9.50(1.10)	8.694**
Chapter III : Fat			
Uppinbetageri	8.46(0.93)	10.86(0.86)	10.304**
Harobelawadi	9.06(1.50)	10.96(1.15)	5.279**
Garag	7.60(1.24)	10.30(1.29)	8.779**
Mansur	8.40(1.42)	10.60(0.77)	7.047**
Chapter IV : Vitamins			
Uppinbetageri	8.96(0.92)	10.56(0.89)	7.352**
Harobelawadi	9.66(1.15)	10.50(1.13)	3.878**
Garag	9.06(1.04)	10.36(1.21)	4.858**
Mansur	9.06(0.73)	10.53(0.86)	6.886**
Chapter V : Minerals			
Uppinbetageri	8.23 (1.10)	10.66(0.75)	10.014**
Harobelawadi	9.23(1.45)	10.46(1.30)	3.417**
Garag	8.76(1.22)	10.36(0.88)	6.352**
Mansur	8.63(0.96)	10.30(1.02)	6.210**
Chapter VI : Water and fibre			
Uppinbetageri	8.36(0.88)	10.63(1.03)	8.945**
Harobelawadi	9.10(1.42)	10.16(1.14)	4.000**
Garag	8.50(0.93)	11.03(0.96)	10.219**
Mansur	8.53(0.77)	10.53(0.93)	9.103**

** indicates of significance of value at P=0.01

Values in parenthesis indicate SD (Standard deviation)

by Harobelawadi (10.46), Garag (10.36) and Mansur (10.30). After post-test increase in the mean knowledge score about minerals showed by the respondents of Uppinbetageri (8.23 to 10.66), Harobelawadi (9.23 to 10.46), Garag (8.76 to 10.36) and Mansur (8.63 to 10.30) villages and the increase was significant at 0.01 level.

Chapter VI - Water and fibre :

In water and fibre chapter, the mean knowledge score of pre test was found to be low in Uppinbetageri (8.36) followed by Garag (8.50), Mansur (8.53) and Harobelawadi (9.10), whereas post-test mean score was found to be high in Garag (11.03) followed by Uppinbetageri (10.63), Mansur (10.53) and Harobelawadi (10.16). After the post test increase in the mean knowledge score showed by the respondents of Garag (8.50 to 11.03), Uppinbetageri (8.36 to 10.63), Mansur (8.53 to 10.53) and Harobelawadi (9.10 to 10.16) and villages and the increase was highly significant at 0.01 level (Table 3).

The distance education by use of booklet had good impact on knowledge scores of the respondents (Table 3). The increase in the knowledge score of selected school dropout girls and women of all villages found to be highly significant at 1 % level with respect to nutrients. Kolasa *et al.* (2003) reported that technology was a useful tool for providing nutrition educators with updated nutrition information. Sheikh (2004) analyzed that distance education has proved to be a very

effective mode of education for the people who do not have access to education through formal education system throughout the world.

Conclusion:

The experimental study conducted clearly shows that there was significant impact of distance education on gain in knowledge of rural school dropout girls and women about nutrients. Hence distance education has proved to be a very effective mode of education to empower the people who do not have access to education through formal education system.

REFERENCES

- Eastmond, D. (2000). Realizing the promise of distance education in low technology countries. *Educational Technology Res. & Development*, **48**(2): 100-110.
- Kolasa, K.M., Gaston, N.W. and Gallagher, M.L. (2003). The ABCs of the dietary guidelines for Americans, Experience with an online continuing education course nutrition communications. *Nutrition Today*, **38**(6): 232-235.

■ WEBLIOGRAPHY

- Sheikh, M.A. (2004). Rural women and distance education.pp.73-89. <http://www.westga.edu/~distance>.

2nd
Year
★★★★★ of Excellence ★★★★★