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KNOWLEDGE OF RURAL WOMEN ABOUT HOME SCIENCE TECHNOLOGIES

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ABSTRACT

Women in rural areas undertake many non-farm activities both inside and outside their homes. They have many responsibilities right from crop cultivation to processing, storage and marketing of food products. They also collect fuel, fodder and water from long distances. Women shoulder these responsibilities along with reproductive and nurturing roles. They are, therefore contributing directly as well as indirectly to the family income, welfare and living. Many women undertake these responsibilities with little or undervalued knowledge and with poor, out-dated tools and equipments. Women need new technologies and practices to improve upon the old ones, which necessitates the transfer of appropriate home science technologies. The study was carried out in the two villages of Dharwad Taluk of Dharwad district of Karnataka state. Eight home science technologies were diffused in the two villages through lectures, demonstration and exhibition. The entire social system was studied now to the acceptance. Eighty rural women, who accepted these technologies constituted the sample size of the present study. The results of the study indicated that the knowledge of rural women about the home science technologies was low before the knowledge intervention and this knowledge increased to medium and high level after the intervention. The‘t’ values showed that there is a significant difference in the mean scores before and after intervention (0.05 percent). The study found significant and positive relationship between knowledge and scientific orientation.

KEYWORDS: Knowledge, Home Science, Technology, Rural Women, Intervention

INTRODUCTION

Women, in rural areas suffer from many disadvantages, and are subjected to a great deal of hardship and drudgery. The jobs done by them are often physically arduous, time consuming and repetitive, resulting in fatigue and drudgery. Therefore, women need appropriate technologies not only to reduce their drudgery in households and other economic activities but also to improve sanitation, health, environmental conditions, nutritional level and overall well being and empowerment of women. Home science technologies are those technologies that assist home makers in performing jobs in the house an efficient and effective manner. Home science technologies are viewed as a complex blend of scientific information, materials, technical methods and process for improving skill and task performance (Verma and Kuashik, 2006).

Development of new technology is not generally a major problem, but dissemination by competent persons and acceptance of these technologies by intended beneficiaries pose problems. Technology transfer is a very complex process. When the technology is disseminated among the members of the social system, the individual is exposed to the innovation’s existence and gains some understanding of how and why it works. This is nothing but seeking information

about the technology, and this in turn, influences the acceptable behavior of the diffused technologies. In view of the above facts, the present study attempts to disseminate useful home science technologies for adoption by the rural women.

MATERIAL AND METHODS

The study was conducted during 2016-17 in Dharwad Taluk, Dharwad district of Karnataka state. Two villages with small populations, i.e., Veranagalavi with 124 households and Belur-Heggeri with 94 households were selected for the study.

Eight technologies were selected from four disciplines of Home Science viz., Food Science and Nutrition, Textile and Apparel Designing, Family Resource Management and Human development and family studies. The eight selected technologies were (i) Balanced diet (ii) Weaning foods (iii) Stain removal techniques (iv) Care and storage practices of clothing (v) Boiling water and water softening methods (vi) Dust mite control (vii) Toys for stimulating cognitive development (viii) Health and safety practices for women. These were diffused in the two villages by lectures, demonstrations and exhibitions. The knowledge of rural women was studied before diffusion, with the help of a pretested interview schedule. The technologies were then diffused by subject experts on the college of rural Home Science Dharwad. For the post-test, eighty women who accepted the technologies were interviewed.

The knowledge test comprised of five statements for each technology, making a total of 40 statements. The answers to the questions were quantified by giving one score to the correct answer and zero score to the wrong answer. Hence, the minimum and maximum scores one could obtain for each technology was 5 and 0, respectively. The overall knowledge scores ranged between 0-40. Further, for each of the technology, the total knowledge score for individual respondents was calculated by summing up the number of items correctly answered. The respondents were then classified into three categories following the equal distribution method based on class interval as follows.

$$\frac{\text{Maximum score} - \text{Minimum score}}{3} = \text{Class interval}$$

$$\frac{5-0}{3} = 1.66$$

Taking class interval as 2, the following three categories were made.

Category	Range of scores
Low knowledge level	Less than 2
Medium knowledge level	Between 2 to 4
High knowledge level	Above 4

RESULTS AND DISCUSSIONS

Socio-Economic Characteristics of the Rural Women

Table 1 reveals that the majority of the (43.80 %) respondent rural women belonged to middle age group (36-50 years) followed by the young age group up to 35 years. About 69 per cent of the rural women were illiterate, 15 per cent of them were educated up to high school and 12.50 per cent were educated up to the middle school.

The others 1.20 per cent included education up to primary school, PUC and graduation. The majority (57.50 %) of rural women were from the families, who themselves or family members were involved in subsidiary activities like factory

workers, stone cutting, construction workers, maids *etc*. About 16 per cent were from agriculture labor families. About 42.50 per cent of rural women had an annual income of Rs. 17,001 – 34,000/- *i.e*., semi-medium income category, 47.50 per cent of the rural women belonged to medium family size (5-8 members) and 77.50 per cent of the rural women were from families that do not own any land.

Most of the respondents (97.50 %) had low mass media participation, majority (83.80 %) of them had medium cosmopolitanisms, and most of them (81.20 %) had medium scientific orientation. Most of the respondents (88.80 %) had medium economic motivation and while 58.80 per cent had medium risk orientation.

Knowledge of Rural Women towards Diffused Home Science Technologies

It is clear from the Table 2 that, the majority of the respondents (52.50 %) had a low level of knowledge score followed by medium (45.00 %) and higher (2.50 %) before exposure to the technologies on a balanced diet. After the knowledge intervention on balanced diet, the majority (77.50 %) of respondents belonged to medium knowledge scores followed by high (15.00 %) and low (7.50 %).

Regarding weaning foods before the diffusion majority (87.50 %) of respondents possessed a low level of knowledge, whereas, only 7.50 and 5.00 per cent of them were in the medium category and high categories, respectively. However, after the knowledge intervention on weaning foods 42.50 percent moved to medium category, a large percentage were in the low category (52.50 %) and the rest five per cent continued to be in the high category.

Regarding stain removal techniques, before the knowledge intervention, majority (67.50 %) of respondents belonged to low knowledge level followed by medium (31.20 %) and high (1.20 %). Whereas, after introducing the technology, majority of respondents (78.80 %) possessed medium knowledge level followed by low (16.20 %) and high (5.00 %).

In case of care and storage practices of clothing, the majority of respondents (81.20 %) belonged to low level of knowledge followed by medium (17.50 %) and high (1.20 %) before the knowledge intervention, whereas, after the intervention, majority of the respondents (82.50 %) gained a medium level of knowledge followed by an equal (8.80 %) percentage in the low and medium categories.

Before the knowledge intervention, on boiling water for drinking and water softening methods, majority (63.80 %) belonged to medium knowledge level, while 36.20 per cent were in the medium category and none in the high category. At the post test, respondents in the low knowledge category moved to medium knowledge category, thereby increasing the percentage to 71.20. It could also be observed that 15 per cent moved to high category, with only 13.80 per cent in the lowest category.

Pre-test knowledge results on dust mite control technology showed that a high majority of respondents (86.20 %) belonged to low knowledge level followed by medium and high (13.80 and 0.00 per cent, respectively). After the transfer of knowledge on dust mite control technology, also, majority (66.20 %) of respondents continued to be in the low knowledge while few moved to the medium (33.80 %) category and again there were none in the low category.

With respect to toys for stimulating cognitive development, the pre-test knowledge results found that the majority of the respondents (98.80 %) had low knowledge level, while only 1.20 percent had high knowledge. After the knowledge intervention, nearly two third respondents (58.80 %) had low knowledge level followed by medium (40.00 %) and high

(1.20 %).

The pre-test knowledge scores on health and safety practices for women revealed that the majority of the respondents (95.00 %) possessed medium knowledge followed by low and large (2.50 % each). After the knowledge intervention, 50 per cent of the respondents each possessed medium and high knowledge. None were there in the low category.

It could be understood from the Table 3 s that, there was a significant difference between pre-test and post-test mean knowledge scores for all the selected home science technologies. The paired t-test results were found to have significant't' values at 0.05 percent probability level as follows: balanced diet (12.61*), weaning foods (9.71*), stain removal techniques (12.34*), care and storage practices of clothing (16.37*), boiling water and water softening methods (12.30*), dust mite control technology (6.57*), toys for stimulating cognitive development (10.26*) and health and safety practices for women (17.11*). Thus, indicating that the knowledge intervention through diffusion of home science technologies has been effective in helping women gain knowledge and better understanding of the said technologies. Improved knowledge translates to acceptance, and finally. adoption women could improve the quality of themselves and their families.

Table 4 explains the relationship between social-personal characteristics of the rural women with knowledge of selected home science technologies. The results of the test revealed that the independent variables *viz*., age, education, farm size, family size, annual income, mass media participation, cosmopolitanisms, economic motivation and risk orientation did not show a significant relationship with knowledge of selected home science technologies, whereas scientific orientation exhibited a significant relationship with the knowledge of home science technologies at 0.05 per cent of probability level.

Table 5 depicts the extent of the relationship between social-personal characteristics of the rural women with knowledge of selected home science technologies. The selected variables viz., age, education, farm size, family size, annual income, mass media participation, cosmopolitanisms, risk orientation, scientific orientation and economic motivation were together influencing the knowledge of home science technologies to the extent of 14.70 per cent only.

In the present study, the majority of the respondents had low knowledge scores about all the eight selected home science technologies before knowledge intervention. However, after the knowledge intervention, the knowledge scores of the respondents increased and respondents moved from the low category to medium and high categories. This difference was found to be significant. The reason for this change or the effect of intervention is because, since ages rural women have been bound by the four walls of the home and the rural cultural/traditional practices of rural areas. The traditions followed by them in their routine life or those which were handed over from the previous generations from mothers to their daughters. These technologies may or may not be scientifically sound. Women are also unaware about the science behind the existing practices either because of lack of education or localiteness. However, after the knowledge intervention by way of lectures and demonstrations rural women become more aware and knowledgeable about these home science technologies. This showed the positive effects of the intervention programme.

Similarly, on the impact of intervention Kumari *et al.* (2010) and Patil (2016) reported that there was a significant gain in knowledge after intervention of all the components of nutrition (balanced diet, weaning food, conservation of nutrients, preservation of nutrients, hygiene, deficiencies, source and food fallacies).

CONCLUSIONS

Technologies developed in the field of home science should reach the ultimate users. No technology has any inherent value, unless it is put to use for which it is created. At the same time, rural women will never expose themselves to innovations until and unless they feel the need or face problems with the previous practice. In the present study, after the intervention of home science technologies, there is an increase in the knowledge level of rural women about home science technologies. An increase in the knowledge about any technology is a welcome step in the process of Innovation-Decision of technology. After an increase in the knowledge of rural women forms, either favorable or unfavorable attitude towards the home science technologies, this further leads to acceptance and confirmation of the same.

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APPENDICES

Table 1: Socio-Economic Characteristics of the Rural Women (n=80)

Sl. No.	Variables	Category	Frequency	Percentage
1	Age	Young (Up to 35)	35	43.80
		Middle (36 – 50)	35	43.80
		Old (> 50)	10	12.40
2	Education	Illiterate	55	68.90
		Primary school	01	1.20
		Middle school	10	12.50
		High school	12	15.00
		PUC	01	1.20
		Graduate	01	1.20
		Post graduate	-	-
3	Family Occupation	Agriculture labour	13	16.20
		Agriculture	18	22.50
		Subsidiary	46	57.50
		Salaried (Government service)	03	3.80
4	Annual Income	Low income (Up to Rs. 17,000)	30	37.50
		Semi-medium income (Rs.17001 to 34000)	34	42.50
		Medium income (Rs. 34001 to 51000)	09	11.20
		High income (Above 51000)	07	8.80
5	Family Size	Small (Up to 4 members)	35	43.80
		Medium (5 to 8 members)	38	47.50
		Large (> 8 members)	07	8.70
6	Farm Size	No land	62	77.50
		Marginal farmers (Up to 2.5 Acres)	09	11.30
		Small farmers (2.51 to 5 Acres)	07	8.80
		Semi-medium farmers (5.01 to 10 Acres)	01	1.20
		Medium farmers (10.01 to 25 Acres)	01	1.20
		Big farmers (> 25 Acres)	-	-

Table 1: Contd.,				
Sl. No.	**Variables**	**Category**	**Frequency**	**Percentage**
7	Mass Media Participation	Low (less than 3)	78	97.50
		Medium (3 to 6)	02	2.50
		High (more than 6)	-	-
8	Cosmopoliteness	Low (< 3)	13	16.20
		Medium (3-6)	67	83.80
		High (> 6)	-	-
9	Scientific Orientation	Low (< 3)	11	13.80
		Medium (3-6)	65	81.20
		High (> 6)	04	5.00
10	Economic Motivation	Low (<7)	07	8.80
		Medium (7-14)	71	88.80
		High (>14)	02	2.40
11	Risk Orientation	Low (< 8)	33	41.20
		Medium (8-16)	47	58.80
		High (> 16)	-	-

Table 2: Knowledge Stage of Innovation-Decision-Process (n=80)

Technologies	**Knowledge Level**	**Pre-Test**		**Post-Test**	
		F	**%**	**F**	**%**
Balanced Diet	Low (< 2)	42	52.50	6	7.50
	Medium (2-4)	36	45.00	62	77.50
	High (> 4)	2	2.50	12	15.00
Weaning Foods	Low (< 2)	70	87.50	42	52.50
	Medium (2-4)	6	7.50	34	42.50
	High (> 4)	4	5.00	4	5.00
Stain Removal Techniques	Low (< 2)	54	67.50	13	16.20
	Medium (2-4)	25	31.20	63	78.80
	High (> 4)	1	1.20	4	5.00
Care And Storage Practices of Clothing	Low (< 2)	65	81.20	7	8.80
	Medium (2-4)	14	17.50	66	82.50
	High (> 4)	1	1.20	7	8.80
Boiling Water and Water Softening Methods	Low (<2)	29	36.20	11	13.80
	Medium (2-4)	51	63.80	57	71.20
	High (>4)	-	-	12	15.00
Dust Mite Control Technology	Low (< 2)	69	86.20	53	66.20
	Medium (2-4)	11	13.80	27	33.80
	High (> 4)	-	-	-	-
Toys for Stimulating Cognitive Development	Low (< 2)	79	98.80	47	58.80
	Medium (2-4)	-	-	32	40.00
	High (>4)	1	1.20	1	1.20
Health and Safety Practices for Women	Low (< 2)	2	2.50	-	-
	Medium (2-4)	76	95.00	40	50.00
	High (> 4)	2	2.50	40	50.00

Table 3: Mean Knowledge Scores about Selected Home Science Technologies (n=80)

Technologies	Mean Knowledge Score		Difference	Paired t-test
	Pre-test	Post-test		
Balanced Diet	1.62	3.26	1.64	12.61*
Weaning Foods	0.51	1.63	1.12	9.71*
Stain Removal Techniques	1.37	2.81	1.44	12.34*
Care And Storage Practices of Clothing	1.25	3.13	1.88	16.37*
Boiling Water and Water Softening Methods	1.85	3.06	1.21	12.3*
Dust Mite Control Technology	0.57	1.26	0.69	6.57*
Toys for Stimulating Cognitive Development	0.1	1.32	1.22	10.26*
Health and Safety Practices for Women	2.57	4.35	1.78	17.11*

* Significant at 0.05 per cent probability level

Table 4: Relationship between Independent Variables and Knowledge Stage of Innovation- Decision-Process of Home Science Technologies (n=80)

Sl. No	Variables	Correlation Coefficient 'R' Value
1	Age	0.021^{NS}
2	Education	0.022^{NS}
3	Farm Size	0.053^{NS}
4	Family Size	0.131^{NS}
5	Annual Income	0.084^{NS}
6	Mass Media Participation	0.038^{NS}
7	Cosmopoliteness	0.054^{NS}
8	Economic Orientation	0.077^{NS}
9	Scientific Orientation	0.229*
10	Risk Orientation	0.073^{NS}

* Correlation is significant at 0.05 per cent probability level
NS- Non-significant

Table 5: Multiple Regressions between Independent Variables and Knowledge Stage of Innovation-Decision-Process of Home Science Technologies (n=80)

Sl. No	Variables	Standardized Beta Coefficients	Standard Error	't' value
1	Age	0.128	0.066	0.877
2	Education	0.101	0.632	0.655
3	Farm Size	-0.055	0.305	-0.390
4	Family Size	-0.060	0.000	-0.477
5	Annual Income	0.128	0.199	0.896
6	Mass Media Participation	0.075	0.625	0.576
7	Cosmopoliteness	0.008	0.682	0.056
8	Economic Motivation	0.024	0.252	0.179
9	Scientific Orientation	-0.316*	0.410	-2.360
10	Risk Orientation	0.037	0.177	0.292

R square value= 0.147
F value=1.035* significant at 0.05 per cent probability level