# Knowledge level of Rural Women regarding Home Science Technologies in Andhra Pradesh

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## ABSTRACT

Women play a key role in food production and form a large proportion of the agricultural work force globally. Knowledge empowerment is crucial in women development. Rural women can create wonders in their society with knowledge gain about different Home Science Technologies. A study was conducted in three randomly selected districts of Andhra Pradesh with sample size of 270 Krishi Vigyan Kendra trained respondents with an objective to measure the knowledge level of rural women regarding Home Science Technologies. Knowledge level was measured in seven different areas – Value addition to millets. Nutrition garden, Fruit & Vegetable preservation, Tailoring & Embroidery, Seed bag technology, Vermicompost technology and Backyard poultry. The study revealed that average knowledge scores obtained by respondents were medium. The knowledge scores in the high category in areas of Fruit & Vegetable preservation, value addition to millets. Nutrition Garden, tailoring and embroidery, vermicompost technology and backyard poultry were in an ascending order. Knowledge scores were significantly related with age, social capital, information source utilisation, innovativeness, value orientation, perception about dissemination method, input availability, market facility and institutional support. The degree of contribution and influence exerted by the different precursor variables than studied variables was observed. Further studies to explore other correlated factors are suggested.

**Key words:** Home science Technologies, knowledge level, krishi vigyan kendra, rural women.

## INTRODUCTION

Rural women are key agents for development. They play a catalytic role towards achievement of transformational economic, environmental and social changes required for sustainable development. But limited access to credit, health care and education are among the many challenges they face. The net productivity of the women is definitely much more than the men, as they manage both the home and outside work in a well-balanced way. Krishi Vigyan Kendra's (Farm Science Centers), an innovative science based institutions were thus established mainly to impart vocational training to the farmers and farm women. The prime goal of KVK is to impart training as per needs and requirements in agriculture and allied enterprises to all farmers, farm women and farm youths including school drop-outs in the rural area. Imparting knowledge for rural women about home science technologies and conducting vocational trainings on those technologies will help them in their overall empowerment. Such vocational trainings help them to sustain themselves through self-employment and to make them self-reliant economically and thus discourages them to migrate to the urban areas. Knowledge acquirement certainly leads to adopt the technologies along with the support of various profile characteristics of rural women. Therefore, a systematic study was conducted in the Andhra Pradesh state to measure the knowledge level of the rural women about home science technologies.

## METHODOLOGY

The study was conducted in three districts purposively selected from each of the three regions of Andhra Pradesh *i.e.* Nizamabad District from Telangana Region, YSR Kadapa District from Rayalaseema Region and West Godavari District from Coastal Andhra Region where the selected technologies were present. Three KVK's were selected for the study purposively because these KVK's were in operation in the selected districts under the authority of ANGRAU i.e. Rudrur, Utukur and Undi K.V.Ks. One village was selected randomly where the KVK conducted activities from each of the selected

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mandals for the study, i.e. Rudrur village from Varni mandal Thimmapur village from Birkur mandal Hegdoli village from Kotagir mandal of Nizamabad district, Bina palli village from Chinta Komma Dinne mandal, Kotur from Vallure mandal and Uppar pally from Chennur mandal of YSR.Kadapa District, Adavi kolanu village from Nidamarru mandal, Undi village from Undi mandal and Aakuveedu village from Aakuveedu mandal of West Godavari District thus making a total of nine villages for the study. From each village, 30 rural women drawn randomly from trained women and thus, a total of 90 rural women from Coastal region, 90 rural women from Rayalaseema region and 90 rural women from Telangana region thus, a total of two hundred seventy (270) respondents constitute the sample size.

Schedule was developed for study to measure respondents knowledge level regarding selected home science technologies along with profile characteristics as the universe of content. Knowledge was measured in seven different areas – value addition to millets, Nutrition Garden , Fruit & Vegetable preservation, tailoring and embroidery, seed bag technology, vermicompost technology and backyard poultry. 27 of them were included in questionnaire comprised of 3 types of the question *viz.* fill in the blanks, multiple choice, true or false and dichotomous questions to measure the knowledge on seven selected Home Science Technologies.

The correct response to each item was given a score of 'one' and incorrect response a score of 'zero', that the knowledge score of a respondent is the summation of scores of correctly answered items out of total test items. The possible knowledge score ranged from 0 to 27.

## RESULTS AND DISCUSSION

The average knowledge scores of respondents were 36.44 indicated that the overall knowledge level was on medium level (Table 1). The standard deviation of the total knowledge scores was 3.96 indicating significant variations in the knowledge level.

For further analysis the respondents were classified in three categories on the basis of knowledge scores. It was found that from the data, that majority *i.e.* 57.41 per cent (table 1) of the respondents belongs to medium level of knowledge category on selected Home science technologies. It was followed by 26.30 per cent and 16.30 per cent of the respondents under high and low knowledge level categories.

**Table 1: Distribution of respondents based on their overall knowledge level**

n=270

| Category | Frequency (f) | Percentage (%) |
|----------|---------------|----------------|
| Low | 44 | 16.30 |
| Medium | 155 | 57.41 |
| High | 71 | 26.30 |
| Total | 270 | 100.00 |

**Technology – wise Knowledge level of the respondents**

Value addition to millets - The findings of Table 2 inferred that majority *i.e.* 84.44 per cent of the respondents had high level of knowledge on value addition to millets. It might be due that the university KVKs conducted much trainings on this area and in Rayalaseema and Telangana regions it is mostly in use in different forms. Nutrition Garden It was observed from the Table 2 that majority *i.e.* 67.78 per cent of the respondents possessed high level of knowledge about Nutrition Garden, this might be due to the reason of that most of the rural women belonged to agriculture as main occupation and horticulture as subsidiary occupation.

Fruit & Vegetable preservation - The data of the table 2 highlighted that majority *i.e.* 84.81 per cent of the respondents had high level of knowledge about Fruit & Vegetable preservation. This might be due to the reason of that university KVKs conducted much trainings on this area to promote local and seasonal fruits and vegetable preservation. Tailoring & embroidery - It was noted that majority *i.e.* 60.00 per cent of the respondents had high level of knowledge about tailoring and embroidery, university KVKs conducted much trainings on this technology to support the rural women to start an enterprise for better livelihood.

Seed bag- It is noted that majority *i.e.* 88.52 per cent of the respondents had medium level of knowledge about seed bag technology this might be due to that very less number of trainings conducted on this technology by the KVK technical staff. Vermicompost technology- The data of the Table 2 highlighted that majority *i.e.* 58.52 per cent of the respondents had high level of knowledge about vermicompost technology. It was might be due to that KVK staff arranged result demonstration with their participation.

Backyard Poultry-The data of the Table 2 highlighted that majority *i.e.* 73.33 per cent of the respondents had medium level of knowledge about backyard poultry technology. It might be due to that it is difficult to the rural women to remember vaccination schedule and medicines names which must be given to the poultry birds. These findings were in contrary to the findings of Veenita (2015)

reported in her study that majority *i.e.* 65.78 per cent of respondents had medium knowledge about Homestead technologies of RAU. Technology-wise knowledge analysis revealed that knowledge level of majority of the respondents in case of stitching & embroidery, mushroom production vermicompost technology and apiculture were medium to low. Whereas knowledge level were low to medium among majority of the respondents on technologies such as Fruit & vegetable preservation, Art & Craft making and value added products from mushroom.

**Table 2: Distribution of respondents (technology–wise) based on their knowledge level**

| Home Science technology | Category | | |
|---|---|---|---|
| | Low | Medium | High |
| Value addition to millets | 7 (2.59) | 34 (12.96) | 228 (84.44) |
| Nutrition Garden | 58 (21.48) | 29 (10.74) | 183 (67.78) |
| Fruit & Vegetable preservation | 15 (5.56) | 26 (9.63) | 229 (84.81) |
| Tailoring & embroidery | 60 (22.22) | 48 (17.78) | 162 (60.00) |
| Seed bag | 31 (11.48) | 239 (88.52) | 0 (0.00) |
| Vermi compost | 98 (36.30) | 14 (5.19) | 158 (58.52) |
| Backyard Poultry | 59 (21.85) | 198 (73.33) | 14 (5.19) |

**The figures in parenthesis indicate percentage.**

Relationship of independents variables with the Knowledge: The observations of Table 3 revealed that variables such as Social capital, information source utilization, value orientation, market facility and institutional support were positively and significantly related with the knowledge level of the respondents at 1 per cent level of significance and innovativeness, perception about dissemination method, input availability of the respondents was significantly related to knowledge level at 5 per cent level of significance., but age had negative association at 1 per cent level of significance with knowledge level of rural women. Remaining of the independent variables *viz.* education, family income, socio economic status, media usage, economic motivation and management orientation were non-significantly correlated with knowledge level of the respondents.

It can be inferred that knowledge level of the respondents decreased with increase in age. It meant that younger to middle aged respondents had higher level of knowledge about Home science technologies than respondents who were older in age. This might be due to

that the young people were always more enthusiastic and interested to learn new information and skills which were reinforce them to support their family. Poonam et al. (2016) revealed results of their study that age significantly influenced the gain in knowledge and also that there is negative correlation between age and gain in knowledge, meaning that as age increases gain in knowledge decreases. Young people are more open to new ideas than the old ones.

A cursory look at the computed coefficient of correlation (r) between Social capital and Information source utilization knowledge level of the respondents were positively and significantly correlated at 1per cent level of significance. Social - capital can help the knowledge improvement process in many ways, i.e. the network of relationships possessed by a rural woman in a social network and the set of resources embedded within it strongly influence the extent to which interpersonal knowledge sharing. High information source utilisation of rural women i.e. frequently approached to KVK experts might enforced the rural women to gain more knowledge on selected home science technologies.

**Table 3: Relationship of independents variables with the Knowledge**

| Independent Variables | Coefficient of correlation (r) Knowledge ($Y_1$) |
|---|---|
| Age | -0.12815 * |
| Education | 0.00003 NS |
| Family income | 0.06300 NS |
| Socio economic status | -0.05714 NS |
| Socio-capital | 0.18688 ** |
| Information source utilization | 0.25266 ** |
| Media usage | -0.02453 NS |
| Economic motivation | -0.04566 NS |
| Management orientation | 0.07166 NS |
| Innovativeness | 0.15009 * |
| Value orientation | 0.24723 ** |
| Perception about dissemination method | 0.15205 * |
| Input availability | 0.14611 * |
| Market facility | 0.17912 ** |
| Institutional support | 0.18635 ** |

* - Significant at 5% level of significance
** - Significant at 1% level of significance
NS – Non-significant

Innovativeness, Perception about dissemination method and input availability of the respondents was positively and significantly related to their knowledge level at 5 per cent level of significance. This may be due to that most of the respondents belonged to young age and this age group were more exciting and challenging to learn new knowledge and skills for self evaluation while majority of the respondents expressed that television was the most useful method to get credible information, and

regularly they follow knowledge based programmes like annada, sakhi raithe raju, like farm and home based programmes in different television channels. It was observed that value orientation, market facility and institutional support of the respondents were positive and significantly correlated with their knowledge level at 1 per cent level of significance. This might be due to that most of the rural women poses the value orientation, who had this quality definitely accept any new information or skill which ultimately benefits their family assets while most of the respondents had poor market facilities, due to that they might be prone to acquire more knowledge and exposure to better their market facilities. Whereas continuous mutual follow-up of both respondents and KVK staff for technical support developed a positive relation. Young and more innovative women are more prone towards knowledge acquisition than other women and availability of inputs and more institutional support also supports them to acquire more knowledge and it definitely improves their adoption levels. Relative contribution of independent variables towards knowledge level of the respondents: The independent variables information source utilization and value orientation were found to be statistically significant at 1 per cent level of significance and were positively contributing to the knowledge level of the respondents. Economic motivation and innovativeness were found to be positively significant at 5 per cent level of significance. But Socio economic status, market facility and Institutional support were found to be statistically significant at 1 per cent level of significance and were negatively contributing to the knowledge level of the respondents All the variables collectively explained 28.13 per cent variability towards knowledge level of the respondents. It can be inferred from these results (Table. 4.1) that out of the fifteen selected independent variables, only seven of them were significantly contributing to the knowledge level of the respondents. It means that there are some other irrelevant variables that are contributing to the knowledge level of rural women and these variables should be consider in future research studies and while developing strategies or programs relating to the knowledge of rural women.

**Table 4.1: Relative contribution of independent variables towards knowledge level of the respondents**

| Independent Variables | b Values | Standard error | t-value |
|---|---|---|---|
| Age | 0.0881 | 0.0551 | 1.599 NS |
| Education | 0.0918 | 0.0595 | 1.543 NS |
| Family income | 0.0256 | 0.0582 | 0.440 NS |
| Socio economic status | -0.1091 | 0.0552 | 1.976* |
| Social capital | 0.0548 | 0.0578 | 0.948 NS |
| Information source utilization | 0.3215 | 0.581 | 5.531** |
| Media usage | -0.1267 | 0.0662 | 1.912 NS |
| Economic motivation | 0.1264 | 0.0549 | 2.302* |
| Management orientation | 0.0017 | 0.0610 | 0.027 NS |
| Innovativeness | 0.1131 | 0.0548 | 2.063* |
| Value orientation | 0.3188 | 0.0576 | 5.532** |
| Perception about dissemination method | 0.0456 | 0.0595 | 0.767 NS |
| Input availability | 0.0216 | 0.0617 | 0.349 NS |
| Market facility | -0.1350 | 0.0566 | 2.386 * |
| Institutional support | 0.2132 | 0.0621 | 3.435 ** |

$R^2$= 0.2813F calculated value= 8.38

Prediction of independent variables which contributed for maximum variation of independent variables towards knowledge level of the respondents: Step down regression analysis was done to identify the independent variables that accounted for variation in knowledge levels of the respondents.

**Table 4.2: Step down multiple regression analysis for analysis of the influence of selected profile characteristics with knowledge of rural women**

| Independent Variables | b Values | Standard Error | t-value |
|---|---|---|---|
| Socio economic status | -0.1038 | 0.0540 | 1.923 NS |
| Information source utilization | 0.3358 | 0.566 | 5.934** |
| Media usage | -0.0924 | 0.0593 | 1.558 NS |
| Economic motivation | 0.1148 | 0.0545 | 2.108* |
| Innovativeness | 0.1165 | 0.0548 | 2.125 * |
| Value orientation | 0.3268 | 0.0556 | 5.878** |
| Market facility | -0.1432 | 0.0561 | 2.551 * |
| Institutional support | 0.2359 | 0.0590 | 4.001 ** |

$R^2$= 0.2662F calculated value= 11.833

A cursory look at the Table 4.2 indicated that among all eight variables explained 26.62 per cent variation in knowledge level of the rural women. The variance ratio (11.833) test was found to be significant at 1 per cent level of probability. The variables information source utilization, value orientation and institutional support were positive and significant at 1 per cent level of probability whereas economic motivation and innovativeness were positive and significant at 5 per cent level. The variable market facility was negative and significant at 5 per cent level. The variables socio economic status and media usage contributed non-significantly to the variation in knowledge. Thus the above seven variables were crucial in explaining the variation in knowledge levels of rural women.

**CONCLUSION**

Medium knowledge level in overall is a positive result, while the technologies seed bag and backyard poultry were in medium knowledge level of respondents when it was analyzed individually. Rest of five technologies majority of the rural women were in high knowledge level. The KVK staff was in a mutual

understanding flow with rural women b conducting need based trainings.  Majority of the profile characteristics of the rural women had positive and significant relation. It shows that mostly knowledge acquisition levels depended on profile characteristics. The degree of contribution and influence exerted by the dependent variables on the knowledge scores. Further studies to explore other correlated factors are suggested. Also, studies to explore the knowledge acquisition as an active process on the part of the rural women can help improve the knowledge level and leads to increase of adoption levels for the family betterment.

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