International Journal of Agriculture Sciences
ISSN: 0975-3710&E-ISSN: 0975-9107, Volume 10, Issue 1, 2018, pp.-4972-4975.
Available online at http://www.bioinfopublication.org/jouarchive.php?opt=&jouid=BPJ0000217

Research Article

AWARENESS AND ADOPTION OF DRUDGERY REDUCING TECHNOLOGIES AMONG FARM WOMEN OF DANTIWADA TALUKA

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Received: November 02, 2017; Revised: January 08, 2018; Accepted: January 09, 2018; Published: January 15, 2018

Abstract- Women are the backbone of agricultural workforce because they perform more than 80.00 per cent of farm activities. Many farming and allied activities performed by women involve a lot of physical strain which adversely affect their work efficiency and lead to several types of occupational health hazards like mechanical hazards, chemical hazards, musculoskeletal disorders, environmental hazards, physical hazards, biological hazards *etc.* The health of farm women is one of the important resources for agricultural development. Therefore, drudgery reduction measures need to be initiated to avoid occurrence of health hazards among farm women. One of such measures is utilization of drudgery reducing tools by farm women. Hence, an urgent need to make women aware about latest drudgery reducing tools, equipment and other technologies and motivate them to adopt the same was felt. Therefore, present research study was conducted to find the awareness and adoption level about drudgery reducing tools and equipment among farm women.

Keywords- Drudgery, farm women, socio economic variables, communicational variables, communicational variables

Citation: Sumitra Sundhesha, *et al*., (2018) Awareness and Adoption of Drudgery Reducing Technologies among Farm Women of Dantiwada Taluka. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 10, Issue 1, pp.-4972-4975. DOI: http://dx.doi.org/10.9735/0975-3710.10.1.4972-4975

Academic Editor / Reviewer: Dr K. A Thakkar, Gogoi Bonti, R C Chaudhary

Introduction

Women are the backbone of agricultural workforce because they perform more than 80.00 percent of farm activities. Many farming and allied activities performed by women involve a lot of physical strain which adversely affect their work efficiency and lead to several types of occupational health hazards like mechanical hazards, chemical hazards, musculoskeletal disorders, environmental hazards, physical hazards, biological hazards *etc.* These health hazards create serious health problems in the long run. Incidences of chronic skeletal muscular and postural health problem such as strain/sprain, neck pain, joint pain, back pain, hand and leg pain, shoulder pain, chest pain, accidents like cut/wounds, scratches, injury and respiratory diseases such as asthma are indicative of work related health disorders [1]. Farm women often lack education and information on the health hazards and habitually view pain as a normal part of work and seek care only when the condition becomes severe or disabling. Usually, they do not understand the association of a health problem with its source. Further, Women being overburdened with so much work load both on farm and at home; they usually neglect their health [2].

The health of farm women is one of the important resources for agricultural development. Therefore, drudgery reduction measures need to be initiated to avoid occurrence of health hazards among farm women. Hence, an urgent need to make women aware about latest drudgery reducing tools, equipment and other technologies and motivate them to adopt the same was felt. If appropriate drudgery reducing technologies are made available to the farm women at home and farm, it would definitely contribute in reducing their drudgery, increasing their working capability, increasing farm production resulting in improved quality of life. Several types of drudgery reducing technologies are available in market but to what extent these are being used by farm women and whether farm women are aware about these technologies or not are the questions of investigation.

Therefore, a research study was conducted with the following specific objectives:

Objectives of the study

- To study the socio-economic and communicational characteristics of farm women
- To identify the farming and allied activities perceived by farm women as most drudgery prone
- To find the awareness and adoption level about drudgery reducing tools and equipment among farm women
- To find correlation coefficient of Socio-economic, communication characteristics of farm women with the awareness and adoption of drudgery reducing technologies

Research Methodology

The present study was conducted in the twelve randomly selected villages of Dantiwada Taluka on 160 farm women selected by proportionate random sampling procedure. Socio-economic characteristics of respondents were studied as independent variables, whereas, awareness and adoption level of drudgery reducing tools and equipment were studied as dependent variables. An interview schedule was developed, validity of which was checked by jury of experts. Data were collected by personal interview technique. Data on drudgery perceived by farm women during performance of farming and allied activities were collected on three-point scales *i.e.,* most drudgery prone, moderately drudgery prone and least drudgery prone and were scored as 3, 2 and 1 respectively. Data on awareness level about drudgery reducing tools were collected on three-point scale *i.e.,* fully aware, somewhat aware and not aware and scored as, 3, 2 and 1, respectively. Similarly, data on adoption level were collected on three-point scales *i.e.*, always used, sometime used and never used which were scored as, 3, 2 and 1

respectively. Frequency and percentage were calculated to measure independent and dependent variables. Correlation coefficient ('r') values were computed to find out the correlation between the dependent and independent variables.

Results and Discussion

Personal and social variables of farm women

Table-1 *Distribution of respondents according to the personal and social profile n=160*

Personal and Social Variables	Frequency	Percent
Age		
Young (18-35 years)	20	12.50
Middle (36-55 years)	94	58.75
Old (Above 55 years)	46	28.75
Education		
Illiterate	98	61.25
Primary school education (up to 7th standard)	50	31.25
Secondary school education (8th to 10th standard)	12	7.50
Type of Family		
Joint family	31	19.37
Nuclear family	129	80.63
Size of family		
Small (up to 4 members)	46	28.75
Medium (5 to 8 members)	82	51.25
Large (Above 8 members)	32	20.00
Caste		
General	50	31.25
OBC	72	45.00
SC / ST	38	23.75

The data in [Table-1] reveal that majority (58.75%) of farm women belonged to middle age group. Only 12.50 percent were of young age group. Majority (61.25%) of farm women were illiterate, only few had secondary school education. High Majority (80.63%) of farm women had nuclear family. Little more than half (51.25%) of respondents had medium size family and maximum (45.00%) of them belonged to other backward caste category.

It can be inferred from the findings that majority of the farm women who were involved in farming were of middle age group. No farm woman was educated above secondary level. Trend of nuclear type and medium size family was prevalent.

Economic Variables of Farm Women

Table-2 *Distribution of respondents according to economic variables. n=160*

Sr.No	Economic Variables	Frequency	Percent
1	**Annual family income (Rs.)**		
	Low (< 1,50,000)	134	83.75
	Medium (1,50,000 to 3,00,000)	20	12.5
	High (> 3,00,000)	06	3.75
2	**Type of farmers**		
	Marginal farmer (< 1.00 ha)	26	16.25
	Small farmer (≥ 1.00 to 1.99 ha)	34	21.25
	Medium farmer (2.00 to 9.99 ha)	94	58.75
	Big farmer (> 10.00 ha)	06	3.75
3	**Herd size**		
	Small (< 7)	18	11.25
	Medium(7 to 12)	96	60.00
	Large (> 12)	46	28.75
4	**Type of house**		
	Kuchha	36	22.50
	Semi Pucca	102	63.75
	Pucca	22	13.75

Data given in [Table-2] clearly indicate that high majority (83.75%) of farm women had relatively low level of annual family income. Only few (3.75%) farm women had relatively high level of annual family income. Majority (58.75%) of the farm women' family had medium size of land holding; only few (3.75 %) were big farmers. Majority (60.00 percent) of the farm women had medium size of herds. Majority (63.75%) of the farm women had the semi pucca type of houses. The finding leads to conclude that only few farm women had relatively high level of annual income and were from big farmers' families. A little more than one fourth farm women had large size of herds and only few had completely pucca house. All these findings indicate that economic status of farm women was low.

Communication variables of farm women:

It is evident from data given in [Table-3] that high majority (80.00%) of the farm women had low level of mass media exposure. Only few (3.75%) farm women had high level of mass media exposure. Similarly, majority of (78.75%) of the respondents had low level of contact with extension personnel's; only a few (7.50 percent) of the respondents had high level of contact with extension personnel's. Majority (82.50%) of the respondents had low level of contact with extension institutions; only a few (3.75 percent) of them had high level of contact with extension institutions.

Table-3 *Distribution of respondents with according to the communication profile n=160*

Sr.No	Communication Variables	Frequency	Percent
1	**Mass media exposure level**		
	Low exposure (< 10)	128	80.00
	Medium exposure (10 to 13)	26	16.25
	High exposure (> 13)	06	3.75
2	**Contact with extension personnel's/agents**		
	Low contact (< 9)	126	78.75
	Medium contact (9 to 11)	22	13.75
	High contact (> 11)	12	7.50
3	**Contact level with extension Institutes**		
	Low contact (< 7)	132	82.50
	Medium contact (7 to 9)	22	13.75
	High contact (> 9)	6	3.75

It can be inferred that majority of the farm women had low level of mass media exposure, low contact with extension personnel's as well as extension institutions. Hence, their communication exposure level was low.

Results Regarding Drudgery Level Perceived by Farm Women in Performance of Farming and Allied Activities

Table-4 *Drudgery level perceived by farm women during performance of farming activities. (n = 160)*

Sr. No.	Farming activities	Level of drudgery					
		Most drudgery Prone		Moderately drudgery prone		Least drudgery prone	
		frequency	%	frequency	Percent	frequency	%
1.	Clod breaking	-	-	36	22.50	14	8.75
2.	Digging	-	-	46	28.75	16	10.00
3.	Seed treatment	-	-	12	7.50	92	57.50
4.	Sowing	25	15.63	38	23.75	-	-
5.	Irrigation	-	-	6	3.75	35	21.87
6.	Weeding	138	86.25	34	21.25	-	-
7.	Manual Harvesting	137	85.62	15	9.38	-	-
8.	Machine Harvesting	-	-	38	23.75	-	-
9.	Threshing	136	85.00	-	-	-	-
10.	Cleaning of farm produce	-	-	92	57.50	68	42.5
11.	Drying of farm produce	-	-	-	-	152	95.00
12.	Storage of farm produce	-	-	74	46.25	31	19.37

The data clearly indicate that farming activity which was perceived as most drudgery prone by high majority of farm women were weeding (86.25 percent)

followed by manual harvesting (85.62 percent) and threshing (85 percent) [Table-4]. Farming activities which were perceived as moderately drudgery prone by majority (57.5%) of farm women were cleaning of farm produce. 46.25 percent of farm women perceived storage of farm produce as moderately drudgery prone activity. Whereas least drudgery prone activity perceived by high majority (95.00 %) of farm women was drying of farm produce and 57.50 percent perceived seed treatment as least drudgery prone activity. It can be inferred that among the farming activities weeding and manual harvesting were perceived as the most drudgery prone activities by farm women. It might be due to the fact that weeding and manual harvesting activities are mostly performed by farm women and even today with old type of tools and equipment. It is clearly reflected from [Table-5] that among the livestock activities high majority (86.88%) of women perceived dung collection and making of dung cakes as most drudgery prone activity, followed by fodder collection (82.50%) and cleaning of shed (72.50%). Taking animals for grazing and watering the animals were perceived as moderately drudgery prone activities by majority (56.25%) and 42.50% percent of farm women respectively. Whereas, the least drudgery prone activities perceived by high majority of farm women were stall feeding (97.50%), cleaning of utensils (92.50%), care of new born calf and ghee making (81.25%). Other activities perceived by majority of farm women as least drudgery prone were hand milking (70.00 %), bathing of animals (63.75%) and chopping of straw and fodder (58.75 %).

Table-6 *Drudgery level perceived by farm women during performance of household activities (n = 160)*

Sr. No.	Household activities	Level of drudgery					
		Most drudgery prone		Moderately drudgery prone		Least drudgery prone	
		frequency	%	frequency	%t	frequency	%
1.	Cleaning and maintenance of house	122	76.25	38	23.75	-	-
2.	Washing cloths	114	71.25	46	28.75	-	-
3.	Grinding of grains	-	-	26	16.25	88	55.00
4.	Repair of house (Daubing)	76	48.75	62	38.75	-	-
5.	Electricity bill	-	-	-	-	6	3.75
6.	Food preparation	12	7.50	70	43.75	78	48.75
7.	Washing utensils	-	-	30	18.75	130	81.25
8.	Purchase of fruits and vegetables	-	-	14	8.75	110	68.75
9.	Purchase of grocery item	-	-	12	7.50	54	33.75
10.	Feeding of children	-	-	-	-	114	71.25
11.	Bathing of children	-	-	-	-	114	71.25
12.	Paying fee of children	-	-	-	-	16	10.00
13.	Helping children in homework	-	-	-	-	62	38.75
14.	Care of children during sickness	-	-	32	20.00	128	80.00
15.	Looking after old members	-	-	32	20.00	128	80.00
16.	Purchase of clothing	-	-	14	8.75	108	67.5
17.	Purchase of Jewelry	-	-	12	7.50	110	68.75

The data in [Table-6] reveal that among household activities most drudgery prone activities perceived by majority of farm women were cleaning and maintenance of house (76.25 percent) and washing clothes (71.25 percent). Whereas, washing utensils, care during sickness and looking after old members were perceived as least drudgery prone household activities by high majority of women (81.25 percent) and (80.00 percent) respectively. Food preparation and repair of house were perceived as moderately drudgery prone activities by 43.75 percent and 38.75 per cent of farm women respectively. Other household activities which were perceived least drudgery prone by majority of farm women were feeding of children and bathing of children (71.25 percent), purchase of fruit and vegetables, purchase of jewelry (68.75 percent), purchase of clothing (67.50 percent) and grinding of grain (55.00 percent). All these activities are part of women' daily life and well accepted by them from generations so they might not have perceived these as much drudgery prone.

Table-7 *Difference in the level of drudgery perceived by farm in performance of farming and allied activities*.

Sr. No.	Activities	Cumulative Means Score	Rank	'F' value
1.	Farming activities	0.89	2	0.134^{NS}
2.	Livestock activities	0.82	3	
3.	Household activities	1.01	1	

From the ranks given in [Table-7] it is evident that highest level of drudgery was perceived by farm women in household activities followed by farming activities and least in livestock activities. But the calculated 'F' value was observed as non-significant. It means that, there is no significance difference in farming, livestock and household activities with regard to level of drudgery, all activities are at par.

Result Regarding Awareness and Adoption Level among Farm Women about Drudgery Reducing Tools and Equipment

Table-8 *Distribution of the respondents according to awareness level regarding drudgery reducing tools and equipment (n = 160)*

Sr. No.	Awareness level	frequency	Percent
1.	Low (< 56)	119	74.38
2.	Medium (56 to 59)	34	21.25
3.	High (> 59)	7	4.37
Total		160	100.00

It is revealed from data presented in [Table-8] that a majority (74.38 percent) of farm women had low level of awareness about drudgery reducing tools and equipment followed by medium level (21.25 percent). Only few (4.37 percent) women were highly aware about drudgery reducing tools and equipment. It can be concluded from findings that about seventy five percent farm women had low level of awareness about improved drudgery reducing tools and equipment.

Table-9 *Distribution of the respondents according to adoption level of drudgery reducing tools and equipment (n = 160)*

Sr. No.	Adoption level	frequency	Percent
1.	Low (< 48)	136	85.00
2.	Medium (48 to 50)	20	12.50
3.	High (> 50)	4	2.50
Total		**160**	**100.00**

It is evident from [Table-9] that a high majority (85.00%) of farm women had low level of adoption of drudgery reducing tools and equipment. Only 12.50 percent of respondents had medium level of adoption of drudgery reducing equipment. Only few (2.50 %) respondents had high level of adoption of drudgery reducing tools and equipment.

It can be inferred from above findings that majority of farm women had low level of adoption of drudgery reducing tools and equipment.

Among the personal, socio-economic and communication variables, education, annual income, type of house and mass media exposure showed positive and highly significant co-relation with awareness and adoption level of drudgery reducing tools and equipment. Caste showed no significant correlation with both awareness and adoption level of drudgery reducing tools and equipment. Age, contact with extension personnel's and with extension institutions showed positive and significant correlation with awareness and adoption level of drudgery reducing tools and equipment. Type of family showed highly significant correlation with awareness but non-significant correlation with adoption level of drudgery reducing tools and equipment. Family size showed negative but significant correlation with awareness and adoption level of drudgery reducing tools and equipment. Size of land holding showed highly significant correlation with awareness level but

significant correlation with adoption level of drudgery reducing tools and equipment.

Table-10 *Correlation of personal socio-economic, communication variables with the awareness and adoption level of drudgery reducing tools and equipment*

Sr. No.	Independent variable	Dependent variables	
		Awareness level	Adoption level
		Correlation coefficient ('r' value)	
1.	Age (x_1)	0.190*	0.163*
2.	Education (x_2)	0.464**	0.374**
3.	Type of family (x_3)	0.228**	0.166^{NS}
4.	Size of family (x_4)	-0.236**	-0.172*
5.	Caste (x_5)	0.055^{NS}	-0.015^{NS}
6.	Annul Income (x_6)	0.306**	0.292**
7.	Size of land holding (x_7)	0.232**	0.192*
8.	Herd size (x_8)	0.180*	0.111^{NS}
9.	Type of house (x_9)	0.374**	0.234**
10.	Mass media (x_{10})	0.565**	0.299**
11.	Contact with extension personnel's (x_{11})	0.200*	0.155*
12.	Contact with institution (x_{12})	0.190*	0.157*

Conclusion

Among all farming activities, the most drudgery prone activities perceived by high majority of farm women were weeding, manual harvesting and threshing. Among livestock activities, dung collection & making dung cakes, fodder collection and cleaning of shed were perceived as most drudgery prone activities by high majority of farm women. Cleaning and maintenance of house and washing of clothes were perceived as most drudgery prone household activities by majority of farm women. Low level of awareness and low level of adoption of drudgery reducing tools and equipment was found among majority of farm women. Most of independent variables showed significant and positive correlation with awareness and adoption level of drudgery reducing tools and equipment except caste. Family type and herd size showed non-significant correlation with adoption level of drudgery reducing tools and equipment. Family size showed negative but significant correlation with awareness and adoption level of drudgery reducing tools and equipment.

Application of research

- Women friendly drudgery reducing tools and equipment need to be popularized primarily related to most drudgery prone faming, livestock and household activities.
- Farm women must be motivated to adopt drudgery reducing tools and equipment.
- Training must be organized for farm women about operation and handling of drudgery reducing tools and equipment and about safety measures to prevent different kinds of occupational health hazards.

Research Category: Agriculture Socio-economics

Acknowledgement / Funding: Author thankful to Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar, Dantiwada Taluka, Banaskantha, 385506, Gujarat, India.

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Research project name or number: Nil

Authors 'contribution

Author 1 prepared tools for data collection and collected the data. Author 2 designed the research study and wrote the manuscript. Author 3 helped in designing research study and writing manuscript.

Author statement: All authors read, reviewed, agree and approved the final manuscript

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors

References

[1] Chaoudhari M., Singh S., Rathor H. and Vyas R. (2009) Drudgery reduction technologies for women to enhance productivity and safety in agriculture on drudgery of Women Agriculture and its Management. From November 17th to December 7th, Udaipur. pp. 1-7.

[2] Menon S. and Sheshadri (2004) Report of the National Task Force on Technological Empowerment of Women Agriculture.