



Acceptability of functional clothing by farm women designed for harvesting activities

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ABSTRACT India has world's largest number of agriculture workers. Most of the farmers have small land holdings therefore activities like sowing, transplantation, weeding, manure and pesticide application, harvesting etc. are performed manually. Workers are at increased risk for a variety of illnesses including respiratory disorders, dermatologic problems and cancer. Considering the occupational health problems of farm workers faced during performing different farm activities, it was felt necessary to design appropriate protective clothing for them. They were designed and constructed in accordance with farm workers' needs to reduce their health problems. Thus this study was conducted to test the acceptability of functional clothing designed for farm women for harvesting activity. The objective of the study was to study the suitability, comfortability, functionality and acceptability of apron, hand gloves, mask and head gear for harvesting activity by farm women. The results of the study revealed that the functional clothing was far better than their existing practice of tying old torn clothes. They suggested a little refinement in the hand gloves as the size of the fingers varies for different women.

KEYWORDS : Acceptability, farmwomen, harvesting, functional clothing

Introduction:

India has world's largest number of agriculture workers as 58.4% of population is dependent on agriculture (Anonymous, 2010). Most of the farmers have small land holdings therefore activities like sowing, transplantation, weeding, manure and pesticide application, harvesting etc. are performed manually. As per National Safety Council, agricultural workers are at increased risk for a variety of illnesses including respiratory disorders, dermatologic conditions and cancer. This is because of exposure to extreme weather conditions, dust and husk, difficult working postures, lengthy working hours and use of hazardous agricultural tools, machinery and chemicals. Like pesticide application, threshing also poses various health problems. Threshing though performed by machines, leads to lots of organic dust in the atmosphere causing respiratory problems and skin allergies. This was due to the reasons that farm workers did not wear appropriate protective clothing while performing these activities. Considering the occupational health problems of farm workers faced during performing different farm activities, it was felt necessary to design appropriate protective clothing for them. They were designed and constructed in accordance with farm workers' needs to reduce their health problems. Desai (2006) stated that safety and protective clothing refer to the garments and other fabric related items designed to protect the wearer from harsh environment that may result in injury or death. Protective clothing are used to protect the wearer from mechanical hazards which include cut, tear, puncture, abrasion and to isolate parts of the body from direct contact with hazardous chemicals used for various purposes. Thus this study was conducted to test the acceptability of functional clothing designed for farm women while harvesting of chickpea with the following objective.

Objective

1. To study the suitability, comfortability, functionality and acceptability of apron, hand gloves, mask and head gear for harvesting activity by farm women.

Methodology:

The study was carried out in Hitnalli farm of Vijayapur district with a sample of 30 farm women for harvesting chickpea. Suitability, comfortability, functionality and acceptability of designed apron, hand gloves, mask, headgear was assessed using a questionnaire. Suitability referred to the style of the garment and size and fit of the garment. Comfortability referred to easy doning and doffing, comfortable for one hour, two hours, three hours, more than three hours of activity and adequate aeration. Functionality referred to protection from dust, dirt and thorny substances and functional for the activity performed and finally the acceptability of the apron, hand gloves, mask and head gear by the farm women. Five point scale i.e., not, less, moderate, fair and high was used to take the observations. Further observations of the respondents were used to calculate the weighted mean score between the existing practice and the designed functional clothing.

Results and Discussion:

Table-1 reveals the comparison between existing practice and designed functional clothing for harvesting chickpea. In the existing practice, farmwomen use old shirt of their husband to cover their body, tie old clothes to their palm, use the pallu of their saree to cover their head and face whereas in the functional clothing apron, hand gloves, mask and head gear is designed to protect the women from the scorching heat, dust, thorns, cuts, abrasions etc.

Table-1: Comparison between existing practice and designed functional clothing

Crop	Name of the activity	Parameter	Existing practice (Mean)	Designed Functional clothing (Mean)
Chickpea	Harvesting	Suitability		
		Apron (A)	3.2	5.0
		Hand gloves (HG)	2.0	4.5
		Mask (M)	1.8	5.0
		Head Gear (HG)	1.4	5.0
		Comfortability		
		Apron (A)	2.9	5.0
		Hand gloves (HG)	2.3	4.0
		Mask (M)	1.8	5.0
		Head Gear (HG)	1.4	5.0
		Functionality		
		Apron (A)	3.2	5.0
		Hand gloves (HG)	3.2	5.0
		Mask (M)	1.4	5.0
		Head Gear (HG)	1.4	5.0
		Acceptability		
Apron (A)	3.2	5.0		
Hand gloves (HG)	3.2	4.0		
Mask (M)	1.4	5.0		
Head Gear (HG)	1.4	5.0		

The farm women expressed that the functional clothing was far better than their existing practice of tying old torn clothes. The mean scores also indicated the same. They suggested a little refinement in the hand gloves as the size of the fingers varies for different women. The results of the study is in line with the study conducted by Gandhi et.al (2012) who conducted a study on 20 farm workers to find out occupational health hazards and efficacy of protective masks in threshing operation. Respondents reported respiratory health problems which were mainly due to heat and organic dust in the surroundings. All respondents reported irritation in eyes and throat followed by nose (85%) and ears (75%). Musculo-skeletal problems were reported showing severe to very severe discomfort in lower arms, upper back and upper arms. Overall discomfort score was 7.6 depicting high level of discomfort. To protect them from occupational health hazards, four protective

masks (face mask, beak mask, hood mask and scarf mask) were given to them and tested on various parameters. Hood mask was highly acceptable. Hence, use of hood mask would be helpful for reducing health problems and improving performance.

In another study by Mahale et.al.(2011) clothing is a primary need of mankind throughout the world. Wearing proper clothes at work can help to prevent various injuries to the body. A variety of human problems have been attributed to occupational exposure to hazardous environments. Farm activities are one of the most vulnerable segments as the farm workers are constantly exposed to multiple hazards during pesticide application. The present study was undertaken to design protective clothing for pesticide applicators and other agricultural workers. The results revealed that the designed protective clothing was found to be highly suitable and comfortable.

Similarly Rani and Pruthi in 2013 designed protective clothing for female farm workers for wheat threshing such as apron, scarf mask, hood mask. Coloured/plain glasses, gloves and shoes were procured from the market. These were given to 15 females for a period of one month for field trials for assessment of suitability and acceptability. The result highlighted that Apron having Chinese collar and sleeves with elasticized cuffs provided protection against dust and wheat husk to upper body ($=2.78$). Hood mask ($=2.92$) as well as scarf mask ($=2.84$) were found to be highly suitable as these were easy to wear, provided protection to neck & face against husk, dust and sun rays. Protective glasses and gloves were found to be highly suitable as these protected their eyes from husk, dust and sunlight ($=3.00$) and protected hands from itching, irritation and cuts & sores ($=2.77$), respectively. Protective clothing /accessories were highly acceptable by the female farmers because these do not have 'adverse effect on work efficiency' ($=1.95$).

Conclusion:

Farm women expressed that that the functional clothing was very comfortable compared to their traditional method of using old clothes and tying it to their hand, face and head. They also suggested little refinement in hand gloves.

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