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Effect of Informative Videos on Knowledge Gain of the Wheat Growers

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ABSTRACT

A study was conducted during the year of 2019 in Ludhiana district of Punjab to assess the impact of informative videos on gain in knowledge of respondents related to recommended wheat production technologies. A multi-stage sampling procedure was followed, a quasi-experimental pre and posttest, and control group was selected. The experimental group was exposed to the informative videos on wheat production technologies whereas no treatment was given to the control group. Three stages contact was made i.e., before treatment, at the time of treatment (video exposure) and after treatment to know the gain in knowledge. The findings of the study showed that a positive and significant difference between before and after exposure to the informative videos ($t = 10.2$, $p < 0.05$) whereas the control group was found to be non-significant ($t = 1.61$, $p < 0.05$).

Keywords: Informative videos, Gain in knowledge, Wheat cultivation practices, Pre and posttest

INTRODUCTION

India being the country of 1.35 billion people requires more than 2000 million tons of food grain. The country is having the second largest agricultural land in the world (179.9 million hectares), where, agriculture and allied activities contribute the most (~33%) to the GDP. According to FAO World Agricultural Statistics (2010), India is the second largest producer of wheat, rice and pulses. The Punjab state having only 1.5 per cent of the total geographical area of the country contributes 13-14 percent towards the total food grain production. The state is known as granary of India (Khatkar *et al.,* 2016). Lack of good extension services and poor access to data has hindered the exchange of innovation at the farm level. Although there are number of communication technologies available but video is the most effective medium to convey information in an attractive way and also effectively supports educational efforts (Rani and Rao, 2014). Chowdhury *et al.,* 2010 studied farmer-to-farmer video and participatory video-mediated learning approach which shows that the video build rural women's capacity for sustainable local seed innovation in Bangladesh. Participatory videos were found to be effective in enabling learning pathways for resource-poor women (Van Mele *et al.*, 2009). Zossou *et al.* (2009) also observed that sharing of new ideas, information and new technologies with farmers through videos become a favored and new approach of dissemination. Nutrition videos have been observed to have the potential to improve the nutritional knowledge of the less literate population, especially rural women (Singh *et al.,* 2017). The video can be used to reflect the way in which actions are performed and to stimulate thinking about how peers can imitate and change their lives (Barron, 2007). Thus, overall, it can be considered

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that videos can play vital role in creating awareness, developing motivation and to enhance adoption of improved practices among the viewers.

METHODOLOGY

The study was conducted in Ludhiana district of Punjab. Multistage sampling was followed in which two blocks out of a total of thirteen blocks of the district were randomly selected. From these selected blocks, three villages from each block, one as control and two as experimental villages were randomly selected. Thus a total of six villages were selected for the study. From each selected village, forty (40) wheat growers were randomly selected, thus 160 respondents were selected as experimental and 80 respondents as control group for the study. The study was carried out in the year of 2019 in which Quasi-experimental design was used to estimate the impact of informative video on the gain in knowledge of the farmers. The quasi-experimental design aimed to evaluate intervention without the randomization of subjects.

As the Punjab Agricultural University, Ludhiana has developed varieties of informative videos for disseminate innovations, technologies and information among farmers. Thus, in order to examine the effect of these videos on gain in knowledge regarding various recommended practices in wheat crop, videos showing practices of seed treatment, weed management, integrated nutrient management and safe use of agrochemicals were selected as treatments to conduct this experimental study. Gain in knowledge was operationalized as quantum of information or message newly learnt by an individual farmer as a result of watching the informative videos. In order to assess gain in knowledge, four knowledge tests covering the important aspects of informative videos viz. seed treatment, weed management, integrated nutrient management and safe use of agrochemical were prepared. These knowledge tests were consisted of 9, 12, 9 and 12 items respectively. In these tests each item was assessed by taking the response from the respondents in the form of yes or no, fill in the blank and multiple choice questions. A score of 1 was given to right answer and 0 for the wrong answers. Thus for each informative video a total knowledge score was worked out and gain in knowledge categories were made on the basis of the mean ± standard deviation score. The total knowledge score was categorized into three categories of the level of knowledge i.e. low, medium and high.

RESULT AND DISCUSSION

The data in given in Table 1 reveal that before exposure to the informative video there were 22.5 per cent of the respondents falling in low, 46.3 per cent in medium and 31.3 per cent of respondents falling in high knowledge category in experimental group, whereas after exposure to seed treatment video, the proportion of respondents decreased in low (-8.1%) and medium (-11.9%) category while respondents percentage significantly increased by 20 per cent in high knowledge level category, whereas in the same span of time in case of control group in posttest evaluation, a non-significant increase of 5 per cent of respondents was observed in high and 3.7 per cent in medium knowledge level category.

In case of weed management, before exposure to the informative video 46.9 per cent of the of the respondents falling in low, 41.3 per cent in medium and 11.9 per cent of respondents in high knowledge level category in the experimental group, whereas after exposure to weed management video, the proportion of respondents decreased in low (-11.9%) and medium (-5.7%) category while respondents percentage increased significantly by 17.5 per cent in high knowledge level category. However, in case of control group in posttest evaluation, a non-significant increase of 5 per cent in high and 2.5 per cent of respondents in medium knowledge level category was observed.

Also, it is evident from the data that in case of experimental group before exposure to the informative video there were about 52 per cent of the respondents falling in low knowledge level category, 36.3 per cent in medium and 11.9 per cent of respondents in high knowledge level category for Integrated Nutrient Management. While after exposure, a percentage shift of -16.3 was observed in low, 1.8 in medium and

Table 1: Distribution of Experimental and Control group according to the level of knowledge at before exposure and after exposure to informative videos

Type of informative content in video	Level of knowledge	Experimental group (n=160)				Control group (n= 80)			
		Before f(%)	After f(%)	% shift	'z' test	Before f(%)	After f(%)	% shift	'z' test
Seed treatment	Low (0-3)	36(22.5)	23(14.4)	-8.1	1.87	26(32.5)	19(23.8)	- 8.7	1.23
	Medium (4-6)	74(46.3)	55(34.4)	-11.9	2.16*	31(38.8)	34(42.5)	+ 3.7	0.48
	High (7-9)	50(31.3)	82(51.3)	+20.0	3.63*	23(28.8)	27(33.8)	+ 5.0	0.68
Weed management	Low (0-4)	75(46.9)	56(35.0)	-11.9	2.16*	35(43.8)	29(36.3)	- 7.5	0.97
	Medium (5-8)	66(41.3)	57(35.6)	- 5.7	1.03	24(30.0)	26(32.5)	+ 2.5	0.34
	High (9-12)	19(11.9)	47(29.4)	+17.5	3.57*	21(26.3)	25(31.3)	+5.0	0.69
Integrated nutrient management	Low (0-3)	83(51.9)	57(35.6)	- 16.3	2.93*	36(45.0)	34(42.5)	- 2.5	0.32
	Medium (4-6)	58(36.3)	61(38.1)	+ 1.8	0.34	30(37.5)	28(35.0)	- 2.5	0.33
	High (7-9)	19(11.9)	42(26.3)	+14.4	9.94*	14(17.5)	18(22.5)	+ 5.0	0.79
Safe use of agrochemical	Low (0-4)	44(27.5)	31(19.4)	- 8.1	1.71	23(28.7)	21(26.3)	- 2.4	0.73
	Medium (5-8)	71(44.4)	62(38.8)	- 5.6	1.02	36(45.0)	33(41.2)	- 3.8	0.48
	High (9-12)	45(28.1)	67(41.8)	+13.7	2.57*	21(26.3)	26(32.5)	+ 6.2	0.87
Overall	Low (0-14)	60(37.2)	42(26.3)	- 10.9	2.06*	28(35.0)	26(32.5)	- 2.5	0.33
	Medium (15-28)	67(42.0)	58(36.2)	- 5.8	0.91	32(40.0)	30(37.5)	-2.5	0.32
	High (29-42)	33(20.8)	60(37.5)	+16.7	3.32*	20(25.0)	24(30.0)	+ 5.0	0.71

* Significant at 0.05 level

significant enhancement of respondents i.e. 14.4 per cent was observed in high knowledge level category. In the same span of time in posttest evaluation of control group only 5 per cent increase in proportion of respondents was noticed in high knowledge level category.

Further the results indicate that before exposure to the video 27.5 per cent of the respondents had low level of knowledge followed by medium (44.4%) and high (28.1%) in experimental group whereas after exposure to safe use of agrochemicals video, the percentage of respondents decreased in low (-8.1%) and medium (5.6%) category while respondents percentage increased significantly (13.7%) in high knowledge level category. In case of control group in posttest evaluation, it was observed that a little (6.2%) increase in proportion of respondents was observed in high knowledge level category. This implied that the knowledge gained by experimental group respondents' about safe use of agrochemicals was considerable because of their exposure to the informative video.

Overall after exposure to the informative videos, the percentage of respondents decreased in low (-10.9%) and medium (-5.8%) category while respondents percentage increased in high knowledge level (16.7%) category was observed. In case of control group in posttest evaluation, it was observed that a little about 5 per cent increase in proportion of respondents was observed in high knowledge level category. The results are in line with Ongachi *et al.* (2018) who found an average of 18 per cent difference between video group participant and Farmer Field School group participant. From these findings it can be concluded that video education has a lot of potential to change the knowledge level of farmers. Many agricultural universities, research institutes and other training centers can use videos effectively to educate their clientele groups. This shows that the video has its role in the dissemination of information to the rural people and had positive and significant results. Therefore, it was concluded that the video method is an audio-visual medium, which reduces the monotony and increases the understanding by

involving more numbers of senses. It is clear from the study results that there is much larger scope of communicating agricultural information through agricultural technology capsule video lessons.

The data presented in Table 2 compares the mean knowledge score of respondents in experimental and control group as well as before and after exposure to informative video. The findings show that before exposure to seed treatment video there was non-significant difference in mean knowledge score of experimental and control group. However, after exposure to the informative video a significant difference (2.48) was observed in mean knowledge score between of experimental and control group. Effect of seed treatment video (as effect of treatment) on mean knowledge score was also calculated and found to be 2.03. In case of weed management video, it was found that before exposure to the weed management video there was non-significant difference in mean knowledge score of experimental and control group. However, after a significant difference was observed in mean knowledge score in experimental and control group. Impact of weed management video on knowledge score was also calculated which was found to be 2.24. Further, the data indicate that before exposure to the integrated nutrient management video there was non-significant difference in mean knowledge score of experimental and control group, however, after exposure to the video a significant difference was observed in mean knowledge score of experimental and control group and the impact of integrated nutrient management video on knowledge score was (as effect of treatment) was found to be 2.01. Also, the findings show that after exposure to the safe use of agrochemicals video a significant difference was observed in mean knowledge score of experimental and control group. Impact of safe use of agrochemicals video

Table 2: Effect of various video on the gain in knowledge of recommended practices

Type of informative video	Time	Experimental (n=160)	Control (n= 80)	Difference	't' value
		Gain in knowledge			
		Mean score ±SD	Mean score ±SD		
Seed treatment	Before	5.15 ± 2.16(X)	4.75 ± 3.02(A)	0.4	1.18
	After	7.32 ± 1.77(Y)	4.84 ± 3.01(Z)	2.48	8.02*
	Difference	2.17	0.09	Effect of treatment	
	paired 't' value	9.83*	0.18	(Y-X)- (Z-A) = 2.08	
Weed management	Before	5.85 ± 3.02(X)	6.49 ± 3.48(A)	0.64	1.46
	After	8.44 ± 2.57(Y)	6.68 ± 3.40(Z)	1.76	4.48*
	Difference	2.59	0.35	Effect of treatment	
	paired 't' value	8.26*	0.39	(Y-X)- (Z-A) = 2.24	
Integrated nutrient management	Before	3.63 ± 2.37(X)	3.88 ± 2.82(A)	0.25	0.72
	After	5.75 ± 2.34(Y)	3.99 ± 2.85(Z)	1.76	5.09*
	Difference	2.12	0.11	Effect of treatment	
	paired 't' value	8.05*	0.25	(Y-X)- (Z-A) = 2.01	
Safe use of agrochemicals	Before	6.26 ± 2.91(X)	5.83± 3.22(A)	0.43	1.04
	After	9.65 ± 2.10(Y)	6.05± 3.24(Z)	3.6	10.4*
	Difference	3.39	0.22	Effect of treatment	
	paired 't' test	11.9*	0.43	(Y-X)- (Z-A) = 3.17	
Selected recommended practices of wheat crop	Before	23.1 ± 9.28(X)	22.6 ± 7.6(A)	0.5	0.42
	After	32.9 ± 7.88(Y)	25.1 ± 11.6(Z)	7.8	6.14*
	Difference	9.8	2.5	Effect of treatment	
	paired 't' test	10.2*	1.61	(Y-X)- (Z-A) = 7.3	

* Significant at 0.05 level

on knowledge score was calculated as an effect of treatment which was found to be 3.17.

The results illustrated that before exposure to the informative videos there was non-significant difference in mean knowledge score of the experimental and control group. Whereas, after exposure to informative videos a significant difference was observed in mean knowledge score between of experimental and control group. Impact of informative videos on knowledge score was calculated as effect of treatment which was found to be 7.3. Hence, it could be concluded that there was a positive and significant difference between experimental and control group in respect to the mean knowledge levels of respondents after exposure to the informative videos. The results are similar with the results of Cia (2013), Duijn *et al.* (2014) and Cia *et al.* (2015). Also Rani and Lal (2019) revealed that the impact of CD was found to be significant for all messages related to the cultivation of vegetables in order to gain in knowledge and change attitudes in the selected villages. There was a significant difference in the knowledge of rural women at the pre and post-exposure stage for all messages.

The finding illustrated that informative video is very useful and fast for diffusion of innovations and farm information among the illiterate. This suggests that video is a great way to quickly disseminate agricultural information among the farmers. Respondents believe that the agricultural video encourages the adoption of recommended practices, that the agricultural video program brings about desirable changes in the Wheat production practices, and that the agricultural video raises knowledge about agricultural technology.

CONCLUSION

The videos have the potential to improve awareness, knowledge acquisition, and technology adoption. There was a significant gain in knowledge from before to after exposure mean scores which inferred that the informative videos had significant effect on the knowledge gain on wheat practices. By proving that an image is worth a thousand words, seeing the images makes the information clearer and more complete, which helps to create lasting impressions in the minds of the respondents. Therefore, efforts should be taken up by the extension agents to disseminate knowledge about recommended scientific farming practices by using information and communication technology tools especially video to educate farmers and thereby maximizing their benefits. Hence "video" might be helpful for making the 'wheat grower' into 'resource rich farmers'.

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