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Farmers' Satisfaction with Dramatized Presentation Regarding Safe Use of Pesticides

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ABSTRACT

The present study was undertaken with the objectives to study reaction and satisfaction level of farmers with technical street play and gain in knowledge of the respondents. Five districts of Malwa region i.e. Ludhiana, Faridkot, Fazilka, Patiala and Mansa were selected purposively. From each district one village was selected and from each village thirty farmers were selected randomly to make a sample of 150 farmers. The data were collected by personal interview method with the help of questionnaire. Majority of the farmers gained information regarding harmful effect of pesticides on human health, harmful effect of pesticides on environment, seed treatment and safe use of pesticides etc. The socio-personal characteristics of the respondent were having significant association with their reaction towards street play on safe use of pesticide.

Keywords: Awareness, Dramatization, Pesticides, Reaction, Satisfaction

INTRODUCTION

Indian Agriculture contributes approximately 17-18 per cent of nation's economy. About 60 per cent labour workforce come from agriculture sector. Indian agriculture played important role to meet the food demand with the support of fivefold increased food grain production from that of independence to current production level for addressing food security in the rapid growing population of India. Rapid growing population has also increased the challenges to use remunerative measures for barren land so as to make them fertile and thus can be used for agricultural purposes. To meet these demands and for better production, farmers are dependent on pesticides and fertilisers. The excessive use of pesticides can result pesticide resistance in pests, resurgence of pests, outbreak of secondary insects, killing of natural enemies/ pollinators etc. This may result in destruction of micro environment around the crop. Ecological sustainability of intensive cultivation seems to uncertain due to allied problems of soil degradation, pesticide accumulation, gene erosion, atmosphere and water pollution (Arjun, 2013). The herbicides, fungicides and bactericides use and cost / benefit ratio has declined with time since 2007. During 2010 and 2014, mean pesticide cost / benefit was 0.645 g pesticide use (total) / kg crop production, and mean annual pesticide use (total) was 2.784 kg/ha. Mean cost / benefit of insecticides, herbicides, fungicides and bactericides use between 2010 and 2014 were 0.051, 0.16 and 0.074 g / kg crop production, respectively. In the perspective to India, the relation shown by the pesticide use, crop production and the area harvested in different states, cost / benefit of pesticide use (total) increased with time during 1990 to 2007, and declined since 2007. Global insecticides, herbicides, and fungicides & bactericides use and cost / benefit declined with time since 2007.

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Punjab has been affected by upright development of agriculture where the ecosystem gets ravaged diminution of soil fertility and water level, and excess use of pesticides affects farmers and soil health. The excess use of pesticides also increases cost of production which in turn puts pressure on the farmers (Gill *et al.,* 2017). For educating farmers, awareness methods such as traditional media, folk media, nukkar nataks, songs, clowning, dialogue, TV programmes, and short films can be used along with precise management techniques to control adverse effect of pesticides. The exposure of social media is expected to enhance learning outcomes and develop skills (Nain *et al.,* 2019, Panday *et al.*, 2020). Also 80 per cent of the respondents had high level of satisfaction towards mera pind mere khet programme of doordarshan Kendra, Jalandhar (Gill *et al*., 2015). Folk songs, ritual performances, drumming and all other folk communication were used in a creative manner to create awareness to the farmers. At same time, there is a need for the awareness of the farmers regarding these useful traditional methods as these can work as a good source of dissemination of valuable information regarding agriculture (Sharma *et al.,* 2018).

METHODOLOGY

The study was conducted in five districts of Punjab state's Malwa region i.e. Ludhiana, Faridkot, Fazilka, Patiala and Mansa selected purposively to create awareness regarding safe use of pesticides. From each district one village was selected and from each selected village 30 farmers were selected randomly. The study comprises of 150 farmers from five districts of Punjab. An intervention i.e. *nukkad* natak (street play) was given to the respondents. The data for study was collected with the help of questionnaire before and after intervention. The statistical tests used for analysis of data include mean, standard deviation, chi-square, t-test, frequency, percentage and percent change.

RESULT AND DISCUSSION

The data shown in the Table 1 indicates that the reaction of respondents increased from pre to post testing stage with regard to judicious use of pesticides. Some of the main reactions which were found to be more significant were: headache are caused by pesticides (10.38), followed by nausea and vomiting are caused

Table 1: Comparative analysis of reaction of the respondents about the judicious use of pesticides (n=150)

Aspects	Mean reaction score		t-value
	Pretesting	Post testing	
Pesticides have harmful effect on human health	0.40	0.77	9.28**
Pesticides have harmful effect on animal health	0.35	0.66	8.18**
Pesticides have harmful effect on environment	0.27	0.52	7.1**
Pesticides can enter body through eyes	0.40	0.78	9.56**
Pesticides can enter body through nose	0.50	0.67	5.59**
Pesticides can enter body through skin	0.34	0.73	9.69**
Headache & eye irritation are caused by pesticides	0.38	0.80	10.38**
Nausea & vomiting are caused by pesticides	0.34	0.74	9.96**
Difficulty in breathing, chest pain & skin irritation are caused by pesticides	0.40	0.65	7.1**
Seed treatment should be done to control seed borne diseases	0.44	0.83	9.32**
Use of herbicides should be according to recommendations	0.62	0.87	6.98**
Only recommended insecticides to be used	0.47	0.74	7.36**
For disease control only recommended pesticides used	0.44	0.77	7.96**
Flood zet nozzle used for weedicides control	0.37	0.71	8.63**
Red mark reflects that chemical is very dangerous	0.44	0.81	9.03**
Blue mark reflects that chemical dangerous	0.36	0.71	9.74**

by pesticides (9.96) blue mark reflects that chemical dangerous (9.74) and pesticides can enter body through skin (9.69), pesticides can enter body through eyes (9.56), seed treatment should be done to control seed borne diseases (9.32). While, the reactions which were least reacted by the respondents but significant were pesticides can enter body through nose (5.59) followed by use of herbicides should be according to recommendations (6.98) and Pesticides have harmful effect on environment, skin irritation caused by pesticides jointly has a value of (7.1). Farmers used methods like TV programme, folk media, traditional media, farm literature, newspaper etc. also enhanced their knowledge level (Gill *et al.,* 2018). There was great difference in knowledge level of respondents in pre-testing and post-testing results of training programme in different villages of tehsil Rishikesh of District Dehradoon (Sharma and Gill, 2018).

In the Table 2, the data reveal that the respondents were aware about the instruction given on insecticides' box should be followed as it has the mean score value of 4.32. The respondents were also aware that the use of overdose of pesticide pollute the environment as it has the mean score value of 4.22. They also know about excess use of pesticides can cause bad impact on human health and to use only pesticides recommended by university with the mean score value of 4.10 and 4.04 respectively. While, they did not understand that why empty containers of the pesticides after their use should be kept properly as it has the mean score value of 3.20 and also they were not able to understand that how excessive use of pesticides give birth to resistance in pests. The awareness that farmers had regarding the potential negative effects of pesticides on the environment was much lower compared with their understanding of the effects of the chemicals on human health (Ajayi *et al.,* 2007).

The data further reveal that the respondents after watching the drama became aware that excessive use of pesticides can cause effect on human health with mean score value of 4.56. The respondents also became aware that use of overdose of pesticide pollutes the environment with the mean score value of 4.55. They also became aware after watching the drama that they should wear cotton clothes, trousers, full sleeve shirts and goggles while spraying and they should follow recommended doses of pesticides by the experts of university with mean score value of 4.53 and 4.43

Table 2: Distribution of respondents according to their understanding of instructions made on pesticides pack (n=150)

Statements	Before exposure			After exposure		
	SD f (%)	Mean score	Rank	SD f (%)	Mean score	Rank
Instruction given on pesticides box should be followed	4 (2.66)	4.32	1	2 (1.33)	4.48	5
Only use pesticides recommended by university	3 (2.00)	4.04	4	–	4.46	6
Concentration recommended by university is to follow	15 (10.00)	3.82	7	1 (0.66)	4.52	4
Use of overdose of pesticide pollute environment	5 (3.33)	4.22	2	1 (0.66)	4.55	2
Cotton clothes, trousers and full sleeve shirts and goggles to be used while spraying	25 (16.66)	3.67	9	1 (0.66)	4.53	3
To be washed hands properly after spraying	15 (10.00)	3.84	6	–	4.45	7
Empty containers of the pesticides after their use should kept properly	30 (20.00)	3.20	13	4 (2.66)	4.38	9.5
Different nozzles to be used for pesticides and weedicides	23 (15.34)	3.43	11	3 (2.00)	4.43	8
Excess use of pesticides adversely affect the friendly insects	15 (10.00)	3.71	8	6 (4.00)	4.38	9.5
Excess use of pesticides can cause human health	11 (7.34)	4.10	3	3 (2.00)	4.56	1
Excessive use of pesticides lead to resistance in pests	26 (17.34)	3.39	12	5 (3.34)	4.22	11
Excessive use of pesticides will pollute the underground water	11 (7.34)	3.90	5	4 (2.66)	4.22	12
Excessive use of pesticides may cause new emergence of pests	26 (17.34)	3.44	10	22(14.66)	3.93	13

respectively. While, they did not understand that how excessive use of pesticides cause new emergence of pests as it has the mean score value of 3.93 and excessive use of pesticides will pollute the underground water with the mean score value 4.21. There was considerable increase in the knowledge level of farmers after watching the street play and transfer of knowledge to farmers after staging the technical street play through traditional media. After watching the street play it led a significant rise in the knowledge level of farmers was also found by Dhawan and Sharma, 2008.

The data in the Table 3 indicate that the respondents were pretty much satisfied with the reaction regarding the content of technical play and practicability of the message given in play, language use in the play. They were pleased with the timing of street play, topic of the street play which was focused on agricultural problems and presentation of street play. As their mean score value was quite high. While, they find little bit difficulty in understanding the language/words used in the street play and the exhibition of drama thus it had the mean score value of 2.4 and 2.42 respectively. The indigenous media such as theatre, drumming, village cries and story teller orator has a very positive impact and changed their old idea (Mushengyezi, 2003). Although many useful steps have been taken in the direction of ensuring adequate adaptation in developing countries, much work still remains to fully understand the drivers of past adaptation efforts, the need for future adaptation (Brar *et al.,* 2020).

The data in Table 4 depict that the socio-personal characteristics of the respondent were having significant association with their reaction towards street play on safe use of pesticide by PAU students. Age (152.82*), family size (152.81*), operational land holding (189.42*), mass media exposure (156.23*), extension contact (157.65*) and ICT tools (155.91*) of the respondents were significantly associated with their reaction. Education (2.84NS), family type (1.52NS) of the respondents was non-significantly associated with their reaction of street play.

CONCLUSION

The study signifies the effectiveness of technical street play and gain in knowledge of the respondents. The results show that respondents shown positive response in post-testing then pre-testing for all the parameters related to pesticides. This shows positive result of intervention i.e. *nukkad* natak (street play) given to the respondents. Results also show increase in level of understanding during post exposure test. Respondents were highly satisfied from technical

Table 3: Satisfaction, reaction regarding the content of technical play, practicability of the message given in play and language use in the play

Statements	Very satisfied f(%)	Satisfied f(%)	Not satisfied f (%)	Mean score	Rank
About technical knowledge given through street play	79 (52.66)	60 (40.00)	11 (7.33)	2.46	7
Dialogue delivery in the street play	93 (62.00)	47 (31.34)	10 (6.66)	2.55	4
Language/words used in the street play	73 (48.66)	68 (45.34)	9 (6.00)	2.42	11
Street play focused on agricultural problems	101 (67.33)	39 (26.00)	10 (6.66)	2.60	2
Timing of street play	101 (67.33)	42 (28.00)	7 (4.66)	2.62	1
Presentation of street play	96 (64.00)	22 (14.66)	12 (8.00)	2.56	3
Effect of music in street play	73 (48.66)	64 (42.66)	13 (26.00)	2.43	10
Performance of the students in street play	91 (60.66)	50 (33.34)	9 (6.00)	2.52	5
Over-all effect of drama	76 (50.66)	66 (44.00)	8 (14.66)	2.44	8.5
Literature and material distribution of drama	84 (56.00)	59 (39.34)	7 (4.66)	2.51	6
Exhibition of drama	70 (47.66)	70 (46.66)	10 (6.66)	2.4	12
Is there play motivates the farmers about efficient use of resource	70 (47.66)	74 (49.34)	6 (4.00)	2.44	8.5

Table 4: Association between socio-personal characteristics of the respondents and their reaction

Variables	Reactions			χ^2
	Low	Medium	High	
Age				
Young	3	28	36	152.82*
Middle	5	21	27	
Old	1	12	17	
Education				
Illiterate	3	12	20	2.84
Primary	3	28	36	
Secondary	3	14	16	
Graduate	0	7	8	
Family type				
Nuclear	3	12	22	1.52
Joint	6	49	58	
Family size				
Low	5	27	34	152.81*
Medium	3	29	42	
High	1	5	4	
Operational land holding				
Marginal	1	4	4	189.42*
Small	4	13	16	
Semi-medium	2	19	26	
Medium	0	25	34	
Large	2	0	0	
Mass media exposure				
Low	0	7	9	156.23*
Medium	4	36	53	
High	5	18	18	
Extension contact				
Low	2	8	9	157.65*
Medium	7	30	36	
High	0	23	35	
ICT tools				
Low	1	10	6	155.91*
Medium	8	41	58	
High	0	10	16	

knowledge, dialogue delivery, language, timing, music, performance of students, literature and material distribution of street play.

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