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Impact of Intervention on Innovative Strategies to Optimize Mental Health of Farmers

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ABSTRACT

An experimental research was conducted to know the impact of intervention on innovative strategies to optimize mental health of farmers of experimental group in comparison with control group. The total sample of the study comprises 475 farmers. Depression Anxiety Stress Scale developed by Lovibond & Lovibond (1995), Stress- Perceived Stress Scale developed by Sheldon Cohen, (1994), Beck's Depression Inventory (2004) were used to assess mental health problem such as anxiety disorder and depression, stress and depression level among farmers. Results revealed that the effect scores (Pre test - Post test I) on stress: the farmers of experimental group showed significant decrease in stress score compared to the scores of control group. However, the decrease in the retention scores (Post test I – Post test II) was found to be less among experimental group. In depression, the effect scores of the farmers of experimental group showed significant decrease (14.83) in the depression level compared to the farmers of the control group (6.32). The significant decrease in the retention scores was also found among experimental group. In mental health problems, the decrease in the effect scores of experimental group was found to be -23.00 and for control it was only -7.88, which showed significantly high decrease in the experimental group. The difference in the retention scores was also more in experimental group. However, interactionary effect was found to be significant with both tests and groups. These results highlighted the need for intervention on familial aspects to enhance their overall mental health status.

Key words: Coping strategies, depression, farmers, intervention, mental health, stress,

INTRODUCTION

Agriculture is a largest economic sector and plays a significant role in the overall socio economic development of our country. More than 80 percent of the farmers working in this sector are marginal and small scale farmers. They depend on loan from private money lenders or from financial institutions for the cultivation of their land. They depend on agricultural income for their family expenses, education and marriage of the children. The agriculture in India is in crisis and farmers of various states, Karnataka in particular are facing an array of stressors related to the physical environment, structure of farming families and economic difficulties due to indebtedness, repeated failure of crops, increasing cost of production, poor quality of seeds, exploitation by money lenders and businessmen and the other factors are the main causes for their distress which has contributed to a sharp increase in social and mental health problems. Mental health problems such as stress, anxiety, depression, and psychological distress were identified as risk factors at the individual farmer level l (Gregoire 2002). The most important stresses in farmers' lives identified in several studies in India and abroad, appear to be worries about finance. Time pressures emerged as the second most important factor associated with illness in the study by Eberhardt and Pooyan (1990). Time pressures are not only related to the amount of work that farmers have to do, as illustrated by long working hours, but are rendered particular stressful because of the unpredictability and the seasonal variation in the workload.

Farmers' mental illness and suicide results in immeasurable social, psychological and economic costs to families and rural communities who experience a serious injury and or a fatality while farming. Mental illness among farmers is likely to increase the risk of injury, accidental death and suicide (WHO, 2010). The incidence of suicide has been on the rise as well as the suicidal attempts. Farmers' suicide is a cause of concern and government figures, though conservative, predict an impending epidemic. Various measures to curb this

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calamity are being made in a piecemeal manner. Suicide is usually associated with mental illness, which, in farming communities, appears to be particularly stigmatized and poorly understood. This affects health-seeking behavior, which is compounded by the geographical isolation and inaccessibility of many services in rural areas.

Mental health promotion interventions can include family approaches to supporting mental health and wellbeing, skills in self management of illness and promoting positive messages about mental health in the workplace. Early intervention services identifies key strategic objectives including promoting health and wellbeing, intervening early when needed, and creating collaborative partnerships to support the development of healthier communities, foster safer and healthier families, higher educational achievement; improved interpersonal relationships and personal dignity.

So, considering this as an issue of mental health concern, the study has been undertaken with the objectives like, to study the mental health status, stress and depression level of the farmers, to develop innovative strategies to optimize mental health status of farmers and to test the efficacy of the developed strategies.

METHODOLOGY

An experimental research design was used to know the impact of intervention on experimental group in comparison with control group. Men farmers residing in villages of Dharwad taluk were formed the population of the study. The study was taken up in Dharwad taluk which consists of 119 villages. To select the subjects, 10 per cent of villages i.e., eleven villages of Dharwad taluk, namely, Govankoppa, Gogadikoppa, Somapur, Maradagi, Kotur, Devarhubballi, Murakatti, Honnapur, Mummigatti, Mugad and Kalkeri situated within the radius of 15-20 km were selected for the study purpose. The list of marginal and small farmers of selected villages was obtained from the Tahesildar's office. With the help of the list nearly 40-50 small farmers (age between 25-60) from each the villages were selected as the subjects for the study. The total sample of the study comprises 475 men farmers. DASS- Depression Anxiety Stress Scale (2002) developed by Lovibond & Lovibond (1995) was used to mental health problem such as anxiety disorder and depression, among the subjects. It measures the core signs of stress, anxiety and depression. The scale consists of 42 statements; each statement is scored as 0, 1, 2 or 3 which indicates how much the statement applied to the respondent over the past week. It is a 4 point rating scale having options of 'Never', 'Sometimes', 'Often', and 'Always' with a score of 0, 1 , 2, 3 respectively. The total score ranges from 42 to 126. Based on the total score, the respondents classified into three categories viz., Good Mental Health (1-42), Average Mental Health (43-84) and Poor Mental Health (85-126). The reliability was assessed by pilot study on 50 subjects, with split half technique and it was found 0.84 developed by Sheldon Cohen, (1994) was used to assess stress level of the farmers. It is the most widely used psychological instrument for measuring the perception of stress. The scale also includes a number of direct queries about current levels of experienced stress during the last month. The scale consists of 10 statements. It is a 5 point rating scale having options of 'Never', 'Almost never', 'Sometimes', 'Fairly often', and 'Very often' with a score of 0, 1, 2, 3, 4 respectively. The total score ranges from 0 to 40. Based on the total score, the respondents classified into three categories. Low level stress (0-10), Medium level stress (11-25) and High level stress {26-40).

The reliability was assessed by pre testing on a sample of 50, with split half technique and was found 0.87. Beck's Depression Inventory (2004) was used to find out the level of depression among farmers. The tool consists of 21 items with four alternatives of score form 0-3. A persistent score of 17 or above indicates that respondent may need medical treatment. Respondents classified in to four groups as Normal (1-10), Mild level depression (11-16), Moderate level depression (17-30) and Severe depression (30 and above). The reliability was assessed by conducting pilot study on a sample of 50, with split half method and it was found 0.82. The study was planned and conducted in three phases.

Assessment of Mental health, Stress and Depression levels of selected farmers.

Farmers were interviewed personally by house to house visit to collect the information on selected variables using standardised tools. In first visit, they were interviewed to obtain general information and socio-economic status of their family. In the second visit, same respondents were contacted and assessed for their mental health, stress and depression levels by administering selected tools.

Phases- II. Developing a module consisting of innovative strategies to optimize mental health of farmers

Many of the Government and non Govt. programmes will take care of the problems of the farmers with regard to their loan, economic burden, by providing some incentives, planning programmes etc., but they are not actually looking at the grass root level problems i.e., most of them are facing lot of problems within themselves and with their spouses and other family members. If this

problem gets solved, 75 per cent of their condition will get improved.

So, with this in mind, the following strategies are developed identified and planned to enhance the mental health of farmers. A module was prepared including a series of lectures, live stories, active games, group activities, video shows, action plays etc. to impart these strategies to the selected farmers through intervention programme. Developed innovative strategies, mainly includes, Understanding about 'a good family' and its responsibility, Improving the relations among the family members, Teaching value of good family life , Importance of education in understanding life, Reducing stressors-effective management of stress, Conflict management and health management, Decision making and listening skills, Effective handling of finance problems and Improving health by exercise and yoga

Phase – III. Planning and Implementation of the Educational Intervention Programme:

Looking in to the farmers condition, working nature, feasibility, approach and participation of the farmers, four villages were selected for detailed study. Honnapur and Kalakeri two villages were selected as experimental group and Govankoppa and Somapur were kept as control group.

Suitable resource persons/ technical experts from the "Connect" a well known organization of south India are assigned to deal with these following topics. 30 farmers from Honnapur and 40 farmers from Kalakeri villages attended intervention programme.

The intervention programme was carried out for the farmers of experimental groups (two villages) continuously for 15 days with duration of 2-3 hrs daily. Programme was planned on the bases of farmer's convenience that is 6.30 to 9.00 pm daily.

RESULTS AND DISCUSSION

Identification of Mental health, stress and depression levels among farmers

Mental health of the farmers: Distribution of men farmers by levels of mental health was depicted in table 1. Selected farmers were categorized in to good, moderate and poor mental health levels. Majority of the farm men (41%) belonged to moderate level of mental health problems and about 27% of them were noticed under poor category. Highest number of farmers with more mental health problems (moderate and poor) was found in Mummigatti – Kalkeri – Honnapur & Devarhubballi, Kalkeri and Honnapur villages.

Table 1: Distribution of men farmers by levels of mental health

Villages	Selected Farmers		Mental Health Levels					
			Good		Moderate		Poor	
	N	%	N	%	N	%	N	%
Mummigatti	37	7.79	5	1.05	**17**	3.58	15	3.16
Kotur	37	7.79	6	1.26	22	4.63	9	1.89
Maradagi	50	10.53	18	3.79	20	4.21	12	2.53
Somapur	50	10.53	10	2.11	28	5.89	12	2.53
Govankoppa	54	11.37	17	3.58	22	4.63	15	3.16
Gongadikoppa	42	8.84	22	4.63	12	2.53	8	1.68
Kalakeri	40	8.42	11	2.32	15	3.16	14	2.95
Mugad	50	10.53	22	4.63	16	3.37	12	2.53
Honnapur	36	7.58	8	1.68	16	3.37	12	2.53
Devarhubballi	39	8.21	16	3.37	12	2.53	11	2.32
Murakatti	40	8.42	17	3.57	15	3.16	8	1.68
	475	**100**	**152**	**31.99**	**195**	**41.06**	**128**	**26.96**

Stress among farmers: Data presented in Table 2, revealed that, majority of farmers (63%) belonged to medium level of stress followed by lower level (32%) few of them (5%) belonged to high level of stress. Farmers of Kotur, Kalkeri, Devarhubblli and Honnapur had more stress.

Table 2: Distribution of Farmers by different levels of Stress

Villages	Selected Farmers		Stress Levels					
			Low		Medium		High	
	N	%	N	%	N	%	N	%
Mummigatti	37	7.79	10	2.11	21	4.42	6	1.26
Kotur	37	7.79	1	0.21	32	6.74	4	0.84
Maradagi	50	10.53	14	2.94	34	7.16	2	0.42
Somapur	50	10.53	18	3.79	28	5.89	3	0.63
Govankoppa	54	11.37	23	4.84	30	6.32	1	0.21
Gongadikoppa	42	8.84	14	2.94	26	5.47	2	0.42
Kalakeri	40	8.42	5	1.05	34	7.16	1	0.21
Mugad	50	10.53	30	6.32	22	4.63	1	0.21
Honnapur	36	7.58	9	1.89	26	5.47	1	0.21
Devarhubballi	39	8.21	4	0.84	32	6.74	3	0.63
Murakatti	40	8.42	24	5.05	16	3.37	0	0.00
	475	**100**	**152**	**31.98**	**301**	**63.37**	**24**	**5.04**

Depression level of the farmers: Depression scores from Table 3 indicate that, 49 per cent of the farmers did not have any kind of depression symptoms. About 14% of farmers belonged to highly depressed and followed by medium level (22%). Farmers of Kalkeri, Honnapur, Somapur and Govankoppa were found to have high level of depression.

Table 3: Distribution of Farmers by different levels of Depression

Villages	Depression Levels									
			Normal		Low		Medium		High	
	N	%	N	%	N	%	N	%	N	%
Mummigatti	37	7.79	18	3.79	6	1.26	7	1.47	6	1.26
Kotur	37	7.79	16	3.37	5	1.05	11	2.32	5	1.05
Maradagi	50	10.53	28	5.89	4	0.84	11	2.32	4	0.84
Somapur	50	10.53	21	4.42	8	1.68	18	3.79	8	1.68
Govankoppa	54	11.37	28	5.89	7	1.47	12	2.53	8	1.68
Gongadikoppa	42	8.84	24	5.05	6	1.26	5	1.05	4	0.84
Kalakeri	40	8.42	19	4.00	5	1.05	12	2.53	8	1.68
Mugad	50	10.53	21	4.42	12	2.53	9	1.89	4	0.84
Honnapur	36	7.58	19	4.00	4	0.84	8	1.68	9	1.89
Devarhubballi	39	8.21	18	3.79	6	1.26	6	1.26	5	1.05
Murakatti	40	8.42	22	4.63	8	1.68	5	1.05	5	1.05
TOTAL	**475**	**100**	**234**	**49.25**	**71**	**14.95**	**104**	**21.9**	**66**	**13.86**

Impact of Intervention

Stress among farmers: Mean scores for stress of the control and experimental groups at pre and post tests were shown in table 4. At pre test, the stress scores of experimental group was 18.44 and it was 14.30 for control. These were reduced to 9.8 and 7.41 respectively at post test –I. The decrease in the stress scores was significantly more in experimental group compared to control group which highlights the impact of intervention. At post test –II the retention scores of experimental group also showed the significant decrease, which means the farmers have retained the information provided during the intervention. But difference in the scores of experimental and control group was found same, this may be due to fact that, the cause of the stress may not retain for longer time in the individuals. When they find solutions they may be free from stress. Robyn and Sheehan (2004) conducted a survey on Utilisation of Mental Health Services in Rural and Remote Communities, where in eight hundred participants were interviewed in their homes and classified according to the nature of their most serious illness. The results indicate that professional services are less likely to be sought for mental health problems than for physical illnesses by persons living in rural and remote areas.

Table 4: Mean scores of Stress of control and experimental groups at pre and post tests

Variable	Control Group (66)		Experimental group (70)		't' value
	Mean	S.D	Mean	S.D	
Pre test	14.30	2.63	18.44	5.11	-5.892**
Post test I	7.41	3.831	9.80	2.81	-4.169**
Post test II	3.20	2.615	7.33	2.50	-9.419**

** -significant at 0.001 level

The results of the ANOVA shows that, the effect scores (Post test I – Pre test) of the farmers of experimental group showed significant decrease compared to the scores of control group. However, the decrease in the retention scores (Post test II – Post test I) was found to be less among experimental group which highlights the fact that the intervention given to these farmers was for less number of days yet they were not ready to face the stressful situations as and when they arises. Which indicates that there is need for long period of interventions and frequent supervisions by the experts? The difference in the score was found to be significant between tests and the groups however, interactionary effect was found to be non significant. Fragar et al. (2008) studied the process and outcome of development of a framework for planning and implementation of a range of interventions aimed at improving the mental health and wellbeing of farmers. Research has identified this population to be at high risk of suicide, and of having difficulty in coping with the range of pressures associated with life and work. Early intervention has identified 'steps' along 'pathways to breakdown' from the range of known mental health of farmers.

Table 5: Effect and retention scores of Stress of Control and Experimental groups

Test	Control	Experimental	Total
Effect (Post test I – Pre test)	-6.89	-8.64	-7.79
Retention (Post test II – Post test I)	-4.21	-2.47	-3.32
Total	-5.55	-5.56	-5.56

ANOVA

Source	'F'	SE	CD
A (Cont & Expt)	102.39**	0.309	0.85
B (Effect & Reten)	0.001**	0.31	0.85
AB	15.91NS	0.43	1.18

** - significant at 0.001 level
NS- Non significant

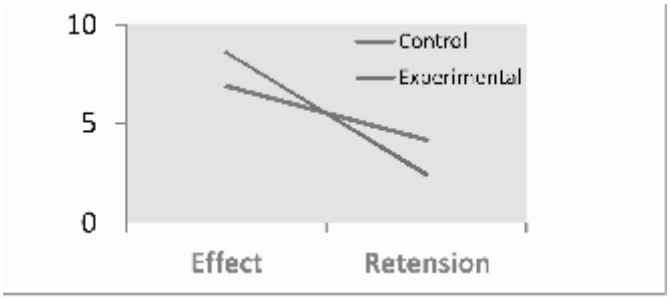

Figure : Retention scores on stress

Depression among farmers:

Regard depression among farmers, the mean scores at pre test was found 23.56 of experimental group and 18.53 for the control, which was decreased to the score of 8.73 at

post test –I in the experimental group and the difference was found significant with the scores of control group. Same trend was observed in the post test –II scores. Retention scores of experimental group showed significant decrease, whatever, the information provided during the intervention might have helped them in reducing their depression to the significant level.

Table 6: Mean scores of depression of control and experimental groups at pre and post tests

Tests	Control Group (66)		Experimental group (70)		't' value
	Mean	S.D	Mean	S.D	
Pre test	18.53	4.84	23.56	8.159	-4.336**
Post test I	12.21	2.55	8.73	4.21	5.788**
Post test II	8.74	2.30	5.11	3.13	7.666**

** -significant at 0.001 level

The results of the ANOVA test presented in the Table showed that the effect scores of experimental group farmers showed significant decrease (14.83) in the depression level compared to control group farmers (6.32). The significant decrease in the retention scores was found among experimental group which highlights the importance of intervention imparted to these farmers.

Table 7: Effect and retention scores of depression of Control and Experimental groups

Test	Control	Experimental	Total
Effect (Post test I – Pre test)	6.32	14.83	-10.70
Retention (Post test II – Post test I)	3.47	3.61	-3.54
Total	4.89	9.22	-7.12

ANOVA

Source	'F'	SE	CD
A (Cont & Expt)	54.54**	0.41	1.09
B (Effect & Reten)	144.01**	0.41	1.09
AB	50.96**	0.58	1.60

** -significant at 0.001 level

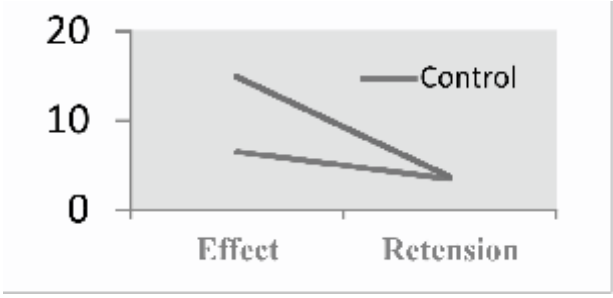

Figure 2: Retention scores on Depression

Mental health problems among farmers: The results of the Table showed the mean scores of mental health problems. At pre test it was found 20.88 and 32.66 for the control and experimental groups respectively, which decreased to 12.92 and 9.66 scores at post test –I In the experimental group and the difference was found highly significant with the scores of control group. Same trend was observed in the post test –II scores. Retention scores of experimental group showed significant decrease, might be due to the information provided during the intervention helped them in reducing their mental health problems to the significant level.

Table 8: Mean scores of Mental health problems of control and experimental groups at pre and post tests

Variable	Control Group (66)		Experimental group (70)		't'value
	Mean	S.D	Mean	S.D	
Pre test	20.88	8.50	32.66	11.07	-6.976**
Post test I	12.92	5.97	9.66	4.751	3.544**
Post test II	8.71	4.14	5.99	3.13	4.345**

** -significant at 0.001 level

The results of the ANOVA shows that, the effect scores of experimental group was found 23.00 and 7.88 for control group, which showed significantly higher decrease in the experimental group. The difference in the retention scores was also more in experimental group. However, the interactionary effect was found significant with tests and groups. These results highlight the importance of different strategies imparted during intervention in improving the mental health status of the farmers of the experimental group. A study of 84 English and Welsh farmers who died by suicide showed that the most common single factor of suicide was the presence of mental health problems especially depression which was found in 82 per cent of farmer suicides. Other common factors identified in the study included work, relationship, financial problems and physical illness (Hawton et al, 1998). Kolstrup (2013) found that farmers experiencing a high demand work environment coupled with low control and low social support can develop stress and strain, mental health problems and depression.

Table 9: Effect and retention scores of Mental health problems of Control and Experimental groups

Test	Control	Experimental	Total
Effect (Post test I – Pre test)	-7.88	-23.00	-15.66
Retention (Post test II – Post test I)	-4.21	-3.67	-3.93
Total	-6.05	-13.34	-9.80

ANOVA

Source	'F'	SE	CD
A (Cont & Expt)	74.52**	0.59	1.62
B (Effect & Reten)	185.36**	0.59	1.62
AB	85.98**	0.84	2.18

** -significant at 0.001 level

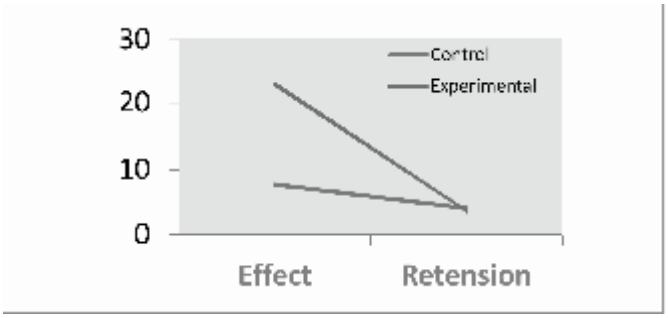

Figure 3: Retention scores on Mental Health Status

CONCLUSION

In stress, depression and mental health problems the pre test scores of farmers of the experimental group were found to be little higher compared to control group farmers. After the intervention to the farmers of the experimental group, the post test scores showed significant reduction in the stress, depression and mental health problems level whereas, among the farmers of control group, the reduction was much lower. With one month period of gap, retention of knowledge was tested through post test-II, which again indicates significant decrease in the scores of farmers of the experimental group except in the stress level. These results highlight the need for intervention on family based aspects to enhance their overall mental health status.

Recommendation: Health strategies and intervention programmes are most effective for improving the mental health of farmers and their families, helps in preventing the onset of mental health problems. Intervening early when the signs of mental illness become more apparent is most important in to reduce the problems and injuries which in turn helps the farmers and their families.

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