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## Effectiveness of educational intervention on knowledge on management of hypertension among the fishermen living in Cuddalore district

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### Abstract

Hypertension is a one of the non-communicable disease highly prevalent at globally. A study to assess the knowledge on management of hypertension among the fishermen living in Cuddalore district. Multi stage random sampling technique was used to select 60 samples for interventional and 60 for control group from villages where fishermen with hypertension assessed knowledge by using structured interview questionnaire. In the interventional group mean knowledge score was 8.02 with SD of 1.97 in pretest. After the educational intervention the subjects mean knowledge score was 11.17 with SD of 3.58 in post test I, 12.38 with SD of 3.57 in post test II and the subjects had increased the mean knowledge score 14.05 with SD of 2.19 in post test III. Therefore, it was evident that the educational intervention was effective in increasing the mean knowledge score in the interventional group than in control group.

**Keywords:** Fishermen, educational intervention, management of hypertension

### Introduction

Hypertension can increase the risk of heart, brain, kidney and other diseases. Hypertension is a major cause of premature death worldwide. The burden of hypertension is felt disproportionately in low- and middle-income countries, where two thirds of cases are found, largely due to increased risk factors in those populations in recent decades. WHO reported an estimated 1.28 billion adults aged 30-79 years worldwide suffer with hypertension, out of which two-third of them were living in low and middle income countries. An estimated 46% of adults with hypertension are unaware that they were hypertension. Hypertension is also the highest diseases in coastal areas (Yulia Fatma & Khodijah Ismail 2015) <sup>[19]</sup>.

Tai Mooi Ho *et al* (2016) reported educational intervention results in hypertensive patients at primary care centres and specialised hypertension units which includes poor baseline knowledge about the risks of hypertension was related to kidneys (54%) and eyes (58%). After educational intervention knowledge increased to 100%. Pushpamala Ramaiah (2015) reported structured teaching on hypertension was given to 50 hypertensive patients at different hospitals in Dharmapuri Dt. The post-test knowledge on hypertension score (84%) was higher than pretest knowledge score (54%). Post test knowledge score on life style modification (88%) was higher than pretest score (46%). The findings showed that most of the hypertensive patient had inadequate knowledge regarding life style modifications of hypertension and structured teaching was effective in improving knowledge on hypertension.

### Methodology

Quantitative research approach was selected for this study. Multi stage random sampling technique was used to select 60 samples for interventional and 60 for control group from villages where fishermen live in Parangipettai Panchayat Union, Cuddalore district, Tamilnadu. Ethical approval received from the institutional human research ethics committee. Formal permission was obtained from the panchayat union president and village leaders of the selected fishermen villages. The level of knowledge on management of hypertension among the fishermen was assessed by using structured interview questionnaire.

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After pretest educational intervention was given for the subjects in interventional group. The educational intervention includes video teaching, flash card and instructional module. After the intervention the post test was done at periodical interval of after 2 week, 6 week and 10 week by using same structured interview questionnaire.

**Results and Discussion**

Table no 1 shows the demographic variables of the subjects such as age, education, religion, type of family, number of family members and monthly income of the family in the interventional and the control group. Most of the subjects 43.33% in the interventional and 48.33% in the control group between the age group of 46 to 59 years. In case of educational status 50% were in the interventional and 65%

of the subjects were illiterate in control group. With regard to marital status 93.33% of the subjects were married in the interventional group and 91.67% of them were married in the control group. It was found that 85% of them were Hindus in the interventional group and 86.67% were participated in control group. Around 70% of the subjects were from nuclear family in the interventional group and in the control group 71.67% subjects were from nuclear family. Nearly 56.67% of the subjects in the interventional group and 58.33% of the subjects in the control group said that their monthly income range between Rs.5001 to Rs.7000. The chi square analysis revealed that no significant difference between both the interventional group and the control group in terms of age, education ect. Therefore both groups were homogenous and comparable.

**Table 1:** Demographic profile of the subjects in the interventional group and in the control group, N=120

Demographic variables		Interventional group (N=60)		Control group (N=60)		Chi square Test ( $\chi^2$ )	P value
		No	%	No	%		
Age in years	21-35 years	16	26.67	17	28.33	0.61	0.71 (NS)
	36-45 years	18	30.00	14	23.34		
	46-59 years	26	43.33	29	48.33		
Education	Illiterate	30	50.00	39	65.00	2.82	0.24 (NS)
	Primary	21	35.00	14	23.33		
	Higher secondary	9	15.00	7	11.67		
	Graduate	0	0.00	0	0.00		
Marital status	Married	56	93.33	55	91.67	0.12	0.73 (NS)
	Unmarried	4	6.67	5	8.33		
	Divorced	0	0.00	0	0.00		
	Separated	0	0.00	0	0.00		
Religion	Hindu	51	85.00	52	86.67	0.09	0.96 (NS)
	Muslim	0	0.00	0	0.00		
	Christian	9	15.00	8	13.33		
Type of family	Nuclear family	42	70.00	43	71.67	0.04	0.84 (NS)
	Joint family	18	30.00	17	28.33		
No of family members	2 -4 members	38	63.33	39	65.00	0.07	0.96 (NS)
	5 -6 members	13	21.67	13	21.67		
	7 -10 members	9	15.00	8	13.33		
Monthly income of the family	> Rs.20001	4	6.67	6	10.00	1.14	0.77 (NS)
	Rs.10001-20000	14	23.33	10	16.67		
	Rs.7001-10000	8	13.33	9	15.00		
	Rs.5001-7000	34	56.67	35	58.33		
	Rs.3001-5000	0	0.00	0	0.00		
	<Rs.3000	0	0.00	0	0.00		

NS - non significant

**Table 2:** Level of Knowledge of the subjects regarding management of hypertension in the interventional group and in the control group before and after educational intervention, N=120

Assessment	Level of Knowledge	Interventional Group (N=60)		Control Group (N=60)		Chi-square value ( $\chi^2$ )	P value
		No.	%	No.	%		
Pretest	Inadequate	52	86.67	53	88.33	0.08	0.78 (NS)
	Moderate	8	13.33	7	11.67		
	Adequate	0	0.00	0	0.00		
Post-test-I After 2 weeks	Inadequate	17	28.33	50	83.33	40.68	0.001*** (S)
	Moderate	25	41.67	10	16.67		
	Adequate	18	30.00	0	0.00		
Post-test-II After 6 weeks	Inadequate	5	8.33	47	78.33	66.02	0.001*** (S)
	Moderate	29	48.33	13	21.67		
	Adequate	26	43.33	0	0.00		
Post-test-III After 10 weeks	Inadequate	0	0.00	45	75.00	80.93	0.001*** (S)
	Moderate	28	46.67	15	25.00		
	Adequate	32	53.33	0	0.00		

NS - Non significant S- \*\*\* highly significant at  $p < 0.001$

Table No 2 revealed that pretest level of knowledge nearly 52 (86.67%) of the subjects had inadequate knowledge on

management of hypertension in interventional group and 53 (88.33%) of the subjects had inadequate knowledge in the

control group. None of the subjects had adequate knowledge on management of hypertension in both the interventional and the control group. The calculated ( $\chi^2$ ) value was 0.08, which was found to be statistically non significant at level of  $p>0.78$ . After 2 weeks followed by the educational intervention regarding management of hypertension in post test I, 17 (28.33%) of the subjects had inadequate knowledge in the interventional group and 50 (83.33%) of the subjects had inadequate knowledge in the control group. The calculated ( $\chi^2$ ) value was 40.68, which was found to be statistically significant at  $p<0.001$  level. During post test II after 6 weeks of educational intervention, 5 (8.33%) of the subjects had inadequate knowledge in the interventional group and 47 (78.33%) of the subjects had inadequate

knowledge in the control group. Nearly 26 (43.33%) of the subjects had adequate knowledge in the interventional group and none of them had adequate knowledge in the control group. The calculated ( $\chi^2$ ) value was 66.02, which was found to be statistically significant at  $p<0.001$  level. During post test III after 10 weeks, no one of the subjects had inadequate knowledge in the interventional group and 45 (75%) of the subjects had inadequate knowledge in the control group. Nearly 32 (53.33%) of the subjects had adequate knowledge in the interventional group and none of the subjects had adequate knowledge in the control group. The calculated ( $\chi^2$ ) value was 80.93, which was found to be statistically significant at  $p<0.001$  level.

**Table 3:** Knowledge score of the subjects in Interventional group and the control group on management of hypertension before and after educational intervention, N=120

Group	Test	Mean	SD	Mean difference	One-way Repeated measures ANOVA F-test	P value
Interventional (N=60)	Pre test	8.12	1.97	5.93	64.22	0.001*** (S)
	Post test-I	11.17	3.58			
	Post test-II	12.38	3.57			
	Post test-III	14.05	2.19			
Control (N=60)	Pre test	7.92	2.20	0.45	1.99	0.16 (NS)
	Post test-I	8.03	2.25			
	Post test-II	8.27	2.38			
	Post test-III	8.37	2.41			

NS - Non significant S- \*\*\* highly significant at  $p<0.001$

Table No 3 revealed that in the interventional group the subjects mean knowledge score was 8.02 with SD of 1.97 in pretest. After the educational intervention the subjects mean knowledge score was 11.17 with SD of 3.58 in post test I, 12.38 with SD of 3.57 in post test II and the subjects had increased the mean knowledge score 14.05 with SD of 2.19 in post test III. The mean difference score was found 5.93 in the interventional group. Repeated measures F-test analysis shows that, overall mean knowledge score in the interventional group shows statistically significant difference between pre-test and post test I, post test II, post test-III ( $F = 64.22, p \leq 0.001$ ). Therefore, it was evident that the educational intervention was effective in increasing the mean knowledge score in the interventional group. The subjects mean knowledge score was 7.92 with SD of 2.20 during pretest in the control group. After 2 weeks the subjects mean knowledge score was 8.03 with SD of 2.25 in post test I and there was no improvement in mean knowledge score in post test II and post test III. One way ANOVA revealed that there was no significant difference in the control group.

The below study findings were congruent with current findings. Rajan *et al* (2019) reported knowledge regarding hypertension was inadequate among the study subjects. Chimberengwa, P. T., Naidoo, M., & cooperative inquiry group (2019) reported poor knowledge on the risk factors, causes and awareness on hypertension among people living with hypertension. Chellaswamy, Muthulakshmi & Karthick, D. (2020) reported that the mean knowledge score of the subjects was improved after educational intervention. The calculated paired t-test value of 29.170 was found to be statistically highly significant at  $p < 0.001$  level. Mandeep Kaur, Parampal Kaur Cheema (2020) identified mean pretest knowledge score was 13.87 and after intervention in post-test mean knowledge score was improved into 23.57. The t-test found, difference between mean post-test

knowledge score of both the interventional group and the control group was found statistically significant at  $p < 0.001$  level.

The Chi-square test was used to find out the association between level of knowledge with the selected socio demographic variables of the subjects such as age, education, marital status, religion, type of family, number of family members and monthly income. There was a significant association exist between the level of knowledge with educational status of the subjects at the level of  $p < 0.01$ . Where as other variables were had statistically non significant association.

**Conclusion**

The prevalence of hypertension was high among fishermen than the general population. The common modifiable risk factors such as alcoholism, smoking, less physical activities, poor dietary habits were responsible for high morbidity profile of the fishermen. Also some of the occupational factors like long working hours, stress, less sleeping hours, inadequate rest and lack of safety measures also may be the cause for hypertension. The fishermen need to be aware of the fact that lifestyle modification and cessation of alcohol and smoking can reduce the risk of hypertension. The community awareness programme was organized to sensitize the risk of hypertension and non-communicable diseases and periodical health camp need to be organized based on the availability of fishermen in their village.

**Conflict of Interest:** Not available.

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