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EFFECTIVENESS OF A LIFE STYLE MODIFICATION PROGRAM ON LIFESTYLE PRACTICES AMONG PREHYPERTENSIVE CLIENTS IN A SELECTED COMMUNITY.

Health Science

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ABSTRACT

Back ground: Prehypertension is a warning sign that the individual may get high blood pressure in the future. Prehypertension was highly prevalent in recent years, especially for males. The magnitude of this problem in India and the importance of recognizing prehypertension are slowly growing and getting established.

Aim and Objective: To evaluate the effectiveness of life style modification program on lifestyle practices among prehypertensive clients.

Materials and Methods: Evaluative research approach was undertaken using an experimental two group pre-test and post-test design involving 156 prehypertensive clients (experiment-78 and control-78) who were enrolled for the study. Clients from Koduvalli, vellacherry and Kilkondaiyar for experimental group, and Karani, Veerapuram, and Tamaraipakkam for control group by convenient sampling technique.

Results: In experimental group, the lifestyle practice mean score was 70.12 with SD of 6.09 in pre test and 89.62 with SD of 4.48 in post test (F=621.85 P=0.001). In control group, the lifestyle practice mean score was 70.58 with SD of 4.69 in pre test and 72.79 with SD of 4.63 in post test (F=9.70 P=0.001). Results revealed that, there was a significant difference was found in lifestyle practice score between experimental and control group among prehypertensive clients.

Conclusion: Health care professionals have a greater role in the promotion of healthy lifestyle practices, which is supported by constant education, reinforcement and empowering the clients. If this is adopted by the health care professional involving healthy life style practices in treating prehypertensive clients, can promote the holistic health of each individual.

KEYWORDS

Blood pressure, lifestyle modification program, lifestyle practices, prehypertension.

INTRODUCTION

Prehypertension is a warning sign that the individual may get high blood pressure in the future. In prehypertension the systolic blood pressure reading is 120-139 mmHg and the diastolic blood pressure reading is 80-89mmHg. High blood pressure increases the risk of heart attack, stroke, coronary heart disease, heart failure and kidney failure. There is no cure for high blood pressure but there is treatment with diet, lifestyles and medications. The disease associated with lifestyle factors are increasing rapidly globally. Multiple lifestyle factors such as physical inactivity, excessive intake of calories, sodium, saturated fats and cholesterol, inadequate intake of fruits, low fat dairy products are etiologically related to the development of these diseases. The lifestyle diseases include cardio vascular diseases, cancer, renal problems and certain neurological problems. Hypertension is scientifically proved that the first stepping stone towards the development of many lifestyle diseases.

The prevalence of prehypertension in India was found more than 45% (of the 2,007 people studied, 47.4% had Prehypertension and 34.7% had hypertension. Prehypertension was found in 46.6% of the men and 49.8% of the women). In India, during 2012-14, the newly detected prehypertensive clients among 15,662 population as follows, in Tamilnadu 47%, Karnataka 54%, Andhra Pradesh 41%, Madhya Pradesh 38%, West Bengal 39%, Gujarat 40%, Delhi 39% and Maharashtra 34% .

Education and creating awareness to the prehypertensive clients is the best strategy to prevent many cardiovascular and other disorders. A recent study defined classification of prehypertension is going to be meaningful; behavior-change counseling should be supplemented by mass health education and information that reinforces sound choices about nutrition, smoking, alcohol use, and healthy weight. Managing prehypertension is challenging, but has much to offer in the prevention of cardiovascular disease. In health promotion, health care professionals can intervene earlier with behavioral and pharmacologic means to prevent the onset of hypertension, the public and patients will benefit.

The need to develop comprehensive and integrated approaches to minimize the risk among the people with prehypertension was the main purpose of the study. Various research studies were conducted using various approaches but adherence to the interventions suggested was not properly confirmed. This study has components of reducing blood pressure which can decrease cardiovascular risk and this can be achieved by lifestyle measures in mild cases and should be the initial approach to hypertension management in all cases. This includes dietary interventions weight reduction, tobacco cessation, and physical activity. Dietary interventions include; reducing salt, increasing potassium, and alcohol avoidance. But unlike in Western countries, stress management is often given greater emphasis in India.

Health promotion is one of the important and cost effective strategies of health care personnel. Positive health behaviour changes are the key aspect of health promotion programs. The individuals are going through various stages of changes, when he is implementing a health behaviour change. The researcher adopted a true experimental study was found to be suitable to assess the effectiveness of nursing strategies to promote the health status by preventing prehypertension.

MATERIALS AND METHODS

Researcher adopted two group pre test-post test design. A total of 154 prehypertensive clients were chosen from Koduvalli, Vellacherry and Kilkondaiyar for experimental group, and Karani, Veerapuram, and Tamaraipakkam for control group. The prehypertensive participants were selected by convenient sampling, random allocation sampling technique based on inclusion criteria. Informed oral and written consent was obtained from the prehypertensive clients. The clients aged between 30 to 50 years, both gender and who had Systolic blood pressure between 120 to139mmHg and diastolic blood pressure between 80 to 89mmHg as criteria, willing to participate in the study and to communicate were included in the study. Participants who are on antihypertensive medications and other medications that can influence blood pressure, participants who are having previous history of cardiac problems, renal problems and other such medical problems, and the participants who were not willing to participate were excluded. The necessary permission was obtained from the local administration of the community and the ethical committee. The screening of the community was done to identify the pre-hypertensive clients. The written consent was obtained from the identified and selected clients after explaining about the study. Researcher collected the demographic profile; lifestyle practice includes diet, habits in both the groups. Life style modification program was taught to the experimental group which encompasses topics on - description, causes, symptoms, diagnostic evaluation, and management complication and prevention. Prevention consists of diet, exercise, harmonious relationship with others and stress management. Post test 1, 2 and 3 was conducted after every month. Reinforcement of teaching component was done. At the

end data were compiled, coded.

Ethical approval

The study was conducted after getting approval from Institutional Human Ethics Committee of Saveetha University (IEC No:001/11/2013/IEC/SU dated 15/11/2013). Permission also was obtained from the selected setting of selected community areas. Participant information sheet and informed consent forms were translated to Tamil. Informed consent was obtained after clarification of doubts. Data collected were kept confidential and all the ethical principles were followed throughout the study. No risks were encountered during the study.

Statistical methods

Statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS, version 16) and STATA (version 12) software's and Epi info (Version 3.5.1).The data collected from 156 pre-hypertensive clients were coded into Microsoft excel spread sheet. The data was analyzed, whereas, demographic variables in categorical/dichotomous were given in frequencies with their percentages. Life style practices were given in mean and standard deviation. Similarity of demographic distribution among experiment and control group was tested using chi square test. Level of life style practice score between experiment and control group was analyzed using chi square test. Quantitative data difference between experiment and control was analyzed using student independent t-test. Quantitative data Difference between pretest and posttest was calculated using student paired t-test. Quantitative differences between Pretest, 1st month, 2nd month and 3rd month are assessed using repeated measures analysis of variance F-test. Post hoc multiple comparisons are calculated using Bonferroni t-test. Association between reduction score/gain score and demographic variables are analyzed using One-way ANOVA F-test and student independent t-test.

RESULTS AND DISCUSSION

All pre-hypertensive clients aged between 36 and 40 (in experimental group 35% and in control group 28%), majority were females (in experimental group 65% and in control group 78%), belonged to Hindu religion (in experimental group 67% and in control group 74%), most of them were married (in experimental group 96% and in control group 95%) and were living in nuclear family (in experimental group 79% and in control group 84%). Majority of them had primary school education in experimental group (32%) and non-literate in control group (41%). Most of the experimental group clients were semi-skilled employees (46%) and in control group were home makers (47%).

Comparison of overall lifestyle practice score among experiment and control group was depicted in table 1. In experimental group, there was no significant difference found in pretest whereas in post test 1st month, 2nd month and 3rd month there was a significant difference found and it was confirmed using independent t-test. In control group, difference between pretest and post test 1st month, 2nd month and 3rd month lifestyle practice score was not significant.

Lifestyle practice mean difference score between experimental and control group was depicted in table 2. In experiment group, the mean difference score was 19.50 and control group score was 2.21. Statistical significance was calculated using repeated measures ANOVA F-test. Multiple comparison of pretest, posttest1 and posttest2 posttest3 Life style practice score was depicted in table 3. Effectiveness and generalization of life style modification on life style practice score was depicted in table 4. On an average score, among experiment, pre-hypertensive participants had gained 15.5% from baseline and control group participants gained only 1.8% of score. Pretest and Posttest life style practice gained score was calculated using mean with 95% confidence interval and percentage with 95% confidence interval. Correlation between systolic and diastolic blood pressure reduction score with lifestyle practice gain score in experimental group was depicted in table 5.

Table 1: Comparison of overall lifestyle practice score among experiment and control group

N=154

Group	Group				Mean difference	Independent t-test
	Experiment(n=78)		Control(n=76)			
	Mean	SD	Mean	SD		
Pretest practice	70.12	6.09	70.58	4.69	-0.46	t=0.52 P=0.59(NS)
Posttest 1st month practice	74.09	4.90	71.91	4.63	2.18	**t=2.83 P=0.01**(S)**
2nd month practice	81.19	4.49	72.61	4.56	8.58	**t=11.77 P=0.001***(S)**
3rd month practice	89.62	4.48	72.79	4.63	16.83	**t=22.91 P=0.001***(S)**

Table 2: **Lifestyle practice mean difference score between experimental and control group**

N=154

Group	LIFE STYLE PRACTICE SCORE								Mean Difference	Repeated Measures ANOVA F-test
	Pretest		1st month		2nd month		3rd month			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Experiment	70.12	6.09	74.09	4.90	81.19	4.49	89.62	4.48	19.50	**F=621.85 P=0.001*** (S)**
Control	70.58	4.69	71.91	4.63	72.61	4.56	72.79	4.63	2.21	**F=9.70 P=0.001** (S)**

Table 3: Multiple comparison of pretest, posttest 1 posttest 2 and post test3 lifestyle practice score

N=154

Group	Assessment	Group –I		ANOVA repeated test score		Bonferroni t- test		
		Mean	SD	F value	P value	Comparison	MD	P value
Experiment	Pretest	70.12	6.09	F=621.85	p=0.001***			
	1st month	74.09	4.90			Pretest Vs Posttest 1	3.97	.001
	2nd month	81.19	4.49			Pretest Vs Posttest 2	11.07	.001
	3rd month	89.62	4.48			Pretest Vs Posttest 2	19.50	.001
Control	Pretest	70.58	4.69	F=9.70	p=0.001***			
	1st month	71.91	4.63			Pretest Vs Posttest 1	1.33	.09
	2nd month	72.61	4.56			Pretest Vs Posttest 2	2.03	.01

	3rd month	72.79	4.63			Pretest Vs Posttest 2	2.21	.001

Table 4: **Effectiveness and generalization of life style modification on life style practice score**

N=154

Group		Maximum score	Mean ±SD	Posttest (3rd month)- Pretest = gain score with 95%CI	% practice gain score with95%CI
Experiment	Baseline	126	70.12±6.09	19.50 (18.25 -20.74)	**15.5% (14.5 -16.5)**
	1st month	126	74.09±4.90		
	2nd month	126	81.19±4.49		
	3rd month	126	89.62±4.48		
Control	Baseline	126	70.58±4.69	02.21 (0.98 -3.44)	**1.8% (0.8% - 2.7%)**
	1st month	126	71.91±4.63		
	2nd month	126	72.61±4.56		
	3rd month	126	72.79±4.63		

Table 5: Correlation between systolic and diastolic blood pressure reduction score with lifestyle practice gain score in experimental group.

N=154

Correlation between	Mean ± SE	Karl Pearson correlation coefficient	Interpretation
Systolic blood pressure **Vs** Life style practice	9.48±0.69	r=-0.36 p=0.01** significant	There is a significant, negative fair correlation between SBP reduction score and lifestyle practice gain score. It means lifestyle practice score increases their SBP decreases fairy.
	19.50±0.63		
Diastolic blood pressure **Vs** Life style practice	9.48±0.69	r= 0.26 p=0.01** significant	There is a significant, negative fair correlation between DBP reduction score and lifestyle practice gain score. It means lifestyle practice score increases their DBP decreases fairy.
	19.50±0.63		

The results have shown a significant difference in lifestyle modification on pre-hypertensive clients with lifestyle practices ($p<0.001$). Results were consistent with the study conducted by Bavikati W, in 2016 on therapeutic life style changes and blood pressure control. 21478 ethnically diverse [African, American n=448, Caucasians n=1,881] men (n=666) and women (n=1,812) were undergone therapeutic lifestyle changes after base line assessment of blood pressure. TLC induced exercise training, nutrition weight management, stress management and smoking cessation intervention showed a remarkable change in the baseline blood pressure as [125-10/-8/79+/-3mmhg] decreased by 6+/-12/3+/-3mmhg [p< or = 0.001], with 952 subjects (38.4%) normalizing their blood pressure [p< or = 0.001] . Continuous monitoring and reinforcement will help the individuals to maintain the life style changes. Family and community support also plays a major role in initiating and maintain the changes in life style practices.

CONCLUSION

Results revealed that, there a significant difference was found in lifestyle practice score between experimental and control group among prehypertensive clients. Health promotion is one of the important and cost effective strategies of health care personnel. Positive health behaviour changes are the key aspect of health promotion programs. Health care professionals have a greater role in the promotion of healthy lifestyle practices, which is supported by constant education, reinforcement and empowering the clients. If Health Care Professionals adopted this in the health care centers for care involving healthy life style practices then we shall promote the holistic health of every individual.

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