



EFFECTIVENESS OF COMMUNITY BASED COMPREHENSIVE LIFESTYLE PROMOTION PACKAGE ON PHYSIOLOGICAL RISK FACTORS AMONG ADULT WITH HYPERTENSION

Medicine

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ABSTRACT

Objective: To assess the effectiveness of community based comprehensive lifestyle promotion package on physiological risk factors among adult with hypertension. **Methodology:** Quantitative approach, true experimental design was adopted in the study. 200 samples in experimental and 198 samples in control group who fulfilled the inclusion criteria were selected using simple random sampling technique. Physiological risk factors include height, weight, BMI, systolic blood pressure and diastolic blood pressure by using calibrated weighing scale and sphygmomanometer. **Results:** The chi-square analysis showed that there was no statistically significant difference between the experimental and control group in the pre test. The repeated measures ANOVA F-test for the experimental group regarding weight and BMI was $F=18.96$ and 20.59 respectively at $p<0.001$ level which showed statistical difference when compared to F score of control group $F=1.90$ and 2.01 . For the experimental group regarding systolic blood pressure and diastolic blood pressure was $F=104.96$ and 136.89 respectively at $p<0.001$ level which showed statistical difference when compared to F score of control group $F=2.40$ and 2.59 . **Conclusion:** The results revealed that the community based comprehensive lifestyle promotion package was effective in reducing the cardio-vascular risk and thus preventing the cardiovascular diseases hence can be utilized as a step in prevention of cardiovascular risk among adult with hypertension.

KEYWORDS

Community based comprehensive lifestyle promotion package, Cardio-vascular risk, Adult with hypertension.

INTRODUCTION

Hypertension is a major public health problem and important area of research due to its high prevalence and being major risk factor for cardiovascular diseases and other complications.¹

The incidence of hypertension has doubled in the last 5 years in all social strata. It is estimated that between 20% and 40% of the adult population in the region of America suffers from hypertension. At the global level, it is estimated that of the people with hypertension, only 57% knows their condition, 40.6% receives antihypertensive drug treatment but only 13.2% achieves controlled blood pressure. This gap between the number of hypertensive patients, the access to treatment and the achievement of control is accentuated in the middle and low income countries where 80% of the burden attributed to cardiovascular diseases occurs.²

High blood pressure is the main risk factor for suffering and dying as a consequence of premature cardiovascular events and is the second leading cause of disability in the world. It is also the main cause of ischemic heart disease and stroke. Other complications are less significant due to poor blood pressure control are dilated heart disease, heart failure and arrhythmias.³

Cardiovascular diseases play a major part nearly 50% in burden of the countries. Cardiovascular diseases burden was high in males compared to females. CVD risk factors are widely distributed among south Asians. The diversity and difference in CVD risk factors in native North Asians compared to South Asians are due to difference in culture and life style, difference in dietary practices, tobacco use and physical inactivity and also variations in economic development between and within different states of India.^{4,5}

In India, undiagnosed and non reporting of cardiovascular diseases are common among the poor and economically under privileged people. The risk factors occurred at younger age in South Asians, leading to an early onset of myocardial infarction. The comparison of rural and urban areas showed that the prevalence rate was high in urban areas when compared to rural area.^{6,7}

METHODS & MATERIALS:

Researcher adopted an experimental study. Ethical committee approval was received from the International Centre for Collaborative Research (ICCR) Omayal Achi College of Nursing. The villages were categorized as experimental and control group by simple randomization, lottery method.

The investigator assured the adults with hypertension about the anonymity and confidentiality. The samples were made to sit

comfortably in a well ventilated place. After brief introduction about the purpose and usefulness of the study and after obtaining the informed consent, the demographic details were collected. After gaining their confidence, pretest was conducted among 398 adults with hypertension (Experimental -200 and Control -198). Physiological risk factors were assessed by measurement of BMI and blood pressure. The height was measured with a standard measuring tape. The weight was assessed with a standard weighing machine. Body Mass Index was calculated using the formula weight in kilograms divided by height in meters square. Blood pressure was assessed by using a Sphygmomanometer.

Every day the investigator selected 10 to 15 adults with hypertension to collect the data. The intervention package, community based comprehensive life style promotion package were administered only to experimental group which consisted of IEC package, counseling of diet and healthy habits and demonstration of exercises. No intervention was given after pretest for the control group. In both experimental and control group, post test was conducted at 1st, 3rd and 5th month and data were prepared and analyzed.

Ethical Considerations

Ethical committee approval was received from the International Centre for Collaborative Research (ICCR) Omayal Achi College of Nursing. To execute the study, a written permission was obtained from The Director of Public Health and Director of Medical Education and Primary Health Centre Incharge Medical Officer.

Data Analysis

The data were entered into Excel sheet and analyzed through statistical package for social science/ Pc⁺ Ver.17.

RESULTS & DISCUSSION

With regard to BMI, majority of samples in both groups were Grade II category in pre test. In the post test, there was an increase in the number of samples in the normal category only in experimental group. The chi-square test revealed that there was no significant difference in the pre ($\chi^2=0.93$, $p=0.81$) and post test1 ($\chi^2=3.90$, $p=0.27$). However, at the level of post test 2 ($\chi^2=8.60$, $p=0.04$) and 3 ($\chi^2=9.62$, $p=0.02$), there was a high level statistical significance difference found between experimental and control group.

In regard to systolic blood pressure, the chi-square test revealed that there was no significant difference in the pre ($\chi^2=1.76$, $p=0.62$) and post test1 ($\chi^2=6.20$, $p=0.10$). However, at the level of post test 2 ($\chi^2=18.63$, $p=0.001$) and 3 ($\chi^2=22.98$, $p=0.001$), there was a high level statistical significance difference found between experimental and control group.

In regard to diastolic blood pressure, the chi-square test revealed that there was no significant difference in the pre ($\chi^2=1.74$, $p=0.63$) and post test 1 ($\chi^2=7.26$, $p=0.06$). However, at the level of post test 2 ($\chi^2=21.33$, $p=0.001$) and 3 ($\chi^2=28.88$, $p=0.001$), there was a high level statistical significance difference found between experimental and control group.

There was statistically significant association found for the demographic variables such as age ($F=2.75$, $p=0.05$), education ($F=2.83$, $p=0.03$), family monthly income ($F=3.24$, $p=0.02$), type of family ($F=3.04$, $p=0.03$), chronicity of hypertension ($F=2.67$, $p=0.05$), family history of hypertension ($t=6.61$, $p=0.001$) and history of smoking ($F=3.72$, $p=0.01$).

Table 1: Comparison of pre and post test level of anthropometric variables within experimental and control group N=398

Anthropometric Variables		Comparison At Various Levels								Mean Difference	Repeated measures ANOVA F-test
		Pre test		Post test 1		Post test 2		Post test 3			
		M	SD	M	SD	M	SD	M	SD		
EXPERIMENTAL	Height	154.0	4.37	154.6	4.37	154.79	4.38	154.87	4.51	-0.17	F=1.12 p=0.13(NS)
	Weight	71.02	12.2	70.04	12.6	68.83	12.38	67.61	12.25	3.41	F=18.96 p=0.01**(S)
	BMI	29.74	5.41	29.31	5.31	28.79	5.38	28.25	5.31	1.49	F=20.59 p=0.001*** (S)
CONTROL	Height	154.5	3.64	154.8	3.66	154.0	3.72	154.3	3.71	-0.08	F=0.52 p=0.66(NS)
	Weight	70.42	12.7	70.28	12.2	70.16	12.4	70.08	12.5	0.34	F=1.90 p=0.12(NS)
	BMI	29.57	5.07	29.50	5.07	29.44	5.12	29.40	5.16	0.17	F=2.01 p=0.10(NS)

** highly significant at $p \leq 0.01$ *** very high significant at $p \leq 0.001$

Table 2: Effectiveness of community based comprehensive lifestyle promotion package on blood pressure among adults with hypertension N=398

Group	Blood Pressure	Blood pressure score								Mean Difference	Repeated measures ANOVA F-test
		Pre test		Post test1		Post test2		Post test3			
		M	SD	M	SD	M	SD	M	SD		
EXPERIMENTAL	SBP	130.2	10.52	126.10	8.77	121.3	6.8	118.90	7.82	11.2	F=104.96 p=0.001(S)
	DBP	88.25	9.17	85.1	8.6	79.6	4.0	78.2	3.39	9.43	F=136.89 p=0.01***(S)
CONTROL	SBP	128.3	14.22	128.27	14.6	127.2	14.63	127.57	13.6	1.36	F=2.40 p=0.07(NS)
	DBP	87.76	9.02	86.85	8.43	86.86	8.60	86.63	8.60	1.13	F=2.59 p=0.06(NS)

** highly significant at $p \leq 0.01$

Physiological risk reduction score was high among adult with hypertension aged 46-50 years, who had higher secondary education, earned Rs.>10,000 as family monthly income, had family size <3 members, had chronicity of hypertension of 0-6 months and had family history of hypertension and no history of smoking in the experimental group.

The above findings were consistent with the study conducted by Bai G, Zhang J and Wang Y (2017) on associations between each of the risk factors. The study results revealed that BMI between 12.5 and 24, a moderate or heavy physical activity and DASH diet were necessary to prevent cardiovascular diseases.⁸

Another study conducted by Singh S et al (2017) revealed that the prevalence of hypertension was 32.9% (male: 40.9%, female: 26.0%). Mean systolic and diastolic BP were 124.25 ± 15.05 mmHg and 83.45 ± 9.49 mmHg, respectively. Higher odds of being hypertensive were found in male subjects, eldest age group, married subjects, subjects of upper socioeconomic status, illiterate subjects, and retired subjects.

Tobacco and alcohol consumption, overweight, obesity, and abdominal obesity were also associated with hypertension. Out of the total hypertensive 211 subjects, only 81 (38.4%) were aware about their hypertension status; out of those, 57 (70.4%) were seeking treatment and 20 (35.08%) had their blood pressure adequately controlled.¹

CONCLUSION

The study was aimed to assess the effectiveness of community based comprehensive lifestyle promotion package on physiological risk factors among adult living with hypertension. The findings revealed that there was reduction in the BMI, SBP, DBP score among experimental group after administration of community based comprehensive lifestyle promotion package and there was no difference found in the control group.

Conflict of Interest: None declared

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