



EFFECTIVENESS OF COMMUNITY BASED COMPREHENSIVE LIFESTYLE PROMOTION PACKAGE ON CARDIO-VASCULAR RISK AMONG ADULT WITH HYPERTENSION

Nursing

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ABSTRACT

To assess the effectiveness of community based comprehensive lifestyle promotion package on Cardio-Vascular risk 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. Cardio-vascular risk was assessed by using Med India cardio-vascular risk assessment tool. **Results:** The chi-square analysis showed that there was no statistically significant difference between the experimental and control group in the pre test. In post test 3 there was statistically significant difference in the cardio vascular risk score between experimental and control group. In post test 3 cardio vascular risk reduction score was 2.37 among experimental group whereas in the control group risk reduction score was 5.01. Student independent t-test ($t=10.87$ at $p=0.001$) showed that there was a significant difference between the experimental and control group in the post test 3. Results also revealed that there was a statistically significant difference between pretest and post test 3 ($F=44.36$, $p=0.001$ level) only in the experimental group alone. **Conclusion:** The results revealed that the community based comprehensive lifestyle promotion package was effective in reducing the cardio-vascular risk score 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

CVD currently accounts for nearly half of non-communicable diseases (NCDs). NCDs have overtaken communicable diseases as the world's major disease burden, with CVD remaining the leading global cause of death, accounting for 17.3 million deaths per year, a number that is expected to grow to >23.6 million by 2030. Increasingly, the populations affected are those in low- and middle-income countries, where 80% of these deaths occur, usually at younger ages than in higher income countries.¹

Hypertension is a major public health problem due to its high prevalence all around the globe. Around 7.5 million deaths or 12.8% of the total of all annual deaths worldwide occur due to high blood pressure. It is predicted to be increased to 1.56 billion adults with hypertension in 2025.²

Hypertension (HTN) still remains one of the five leading cause of mortality globally, with more than 40% of deaths related to cardiac diseases. This accounts for 9.4 million deaths and a minimum of 45–51% cardiovascular diseases (CVDs). With nearly 70% deaths related to CVDs in the low- and middle-income countries (LMICs), the WHO data predict a 1.56 billion (60%) increase in the global burden by the year 2025, while almost 3 of every 4 hypertensive patients would be living in the LMICs. Hypertension prevalence has increased from almost 80 million adults in Sub-Saharan Africa from the year 2000 to an estimated increase of 150 million in 2025 based on current epidemiological data. Again in Sub-Saharan Africa, a study of four regions reveals a burden of 25.9% with associated risks factors such as older age, body mass index (BMI), level of education among others.³

Raised blood pressure is a major risk factor for chronic heart disease, stroke, and coronary heart disease. Elevated BP is positively correlated to the risk of stroke and coronary heart disease. Other than coronary heart disease and stroke, its complications include heart failure, peripheral vascular disease, renal impairment, retinal hemorrhage, and visual impairment. There are several factors predisposing to hypertension. It is clear that all the parameters are having higher prevalence in urban area as compared to rural area. Rapid urbanization, increasing elderly population, mechanization, sedentary life, and dietary changes act together as a web of risk factors which entangles people in it and leads to several chronic diseases. In order to take effective prevention measures, identification of the risk factors is an essential prerequisite. This study intends to generate information on cardio-vascular risk among adult with hypertension.⁴

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). A researcher has done an assessment of cardiovascular risk using the Med-India Cardio-Vascular Risk Assessment Tool.⁵

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. Written informed content was obtained from adults with hypertension after explaining the study purpose, type of data, nature of procedure and participants commitments. Confidentiality and anonymity pledge was ensured. Adults with hypertension in the control group were given the same intervention as wait list control group design.

Data analysis

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

RESULTS & DISCUSSION

The analysis revealed that in the pre test, majority of them both in experimental and control group had low risk. The chi-square test revealed that there was no significant difference in the pre and post test 1. But in the post test 2 and 3, there was an increase in the number of samples from moderate and high risk to low risk. In contrast, status of the control group remained same in the post test also. The chi-square value² = 8.16, $p < 0.001$ also revealed that there was a high statistical significant difference in the pre and post test among experimental group and there was no significant difference in the pre and post test among control group. This showed that community based

comprehensive lifestyle promotion package was effective in promoting lifestyle of adults with hypertension by reducing cardiovascular risk score in experimental group.

The comparison of overall pre and post test mean score of Med India cardio-vascular risk in experimental and control group. Repeated measures ANOVA F-test revealed that $F=44.36$ at $p<0.001$ level which indicated that there was a very high statistically significant difference in the pre and post test. But in control group, ANOVA F-test revealed that there was no significant difference in the pre and post test.

The comparison of overall pre and post test mean scores of Med India cardio-vascular risk between experimental and control group using student independent 't' test. The results revealed that the post test 2 and 3, 't' value was $t=5.79$, 10.87 respectively at $p<0.001$ which revealed that there was high significant difference in the post test 2 and 3 scores between experimental and control group. Therefore, it was noted that there had been a significant reduction on cardio-vascular risk of adults with hypertension after community based comprehensive lifestyle promotion package.

The above findings were consistent with the study conducted by Sanchez N, Simson S, and Rodriguez JI on effectiveness of lifestyle modification among people with intermediate cardiovascular risk. Interventions includes multi-factorial group approach such as healthy diet, moderation in alcohol consumption, daily physical activity, stress management, smoking cessation and two motivational follow-up calls. The study results concluded that multi-factorial group approach had a significant impact in reducing cardiovascular risk among intervention group and not shown any improvement in control group.^{6,7}

lifestyle promotion package and there was no difference found in the control group.

Conflict of Interest: None declared

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Table 1: Pretest and post test level of Med India cardio-vascular risk in experimental and control group N=398

Test	Risk classification	Group				Chi square test
		Experimental		Control		
		n	%	n	%	
Pre test	Low	140	70.0	138	69.7	2=1.88 p=0.39 (NS)
	Moderate	51	25.5	45	22.7	
	Severe	9	04.5	15	07.6	
Post test1	Low	157	78.5	139	70.2	2=4.79 p=0.09 (NS)
	Moderate	36	18.0	44	22.2	
	Severe	7	03.5	15	07.6	
Post test 2	Low	166	83.0	142	71.7	2=8.16 p=0.02 *(S)
	Moderate	28	14.0	41	20.7	
	Severe	6	03.0	15	07.6	
Post test 3	Low	175	87.5	142	71.7	2=15.98 p=0.001*** (S)
	Moderate	21	10.5	42	21.2	
	Severe	4	02.0	14	07.1	

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

Table 2: Comparison of overall pre and post test Med India Cardio-Vascular risk score between experimental and control group N=398

Group	Pre test		Post test 1		Post test 2		Post test 3		Repeated measures ANOVA F-test
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Experimental	4.62	2.70	4.30	2.58	3.36	2.49	2.37	1.55	F=44.36 p=0.001* ** (S)
Control	4.73	2.78	4.73	2.78	5.01	2.91	5.01	2.90	F=1.12 p=0.38 (NS)
Student independent t-test	t=0.40 p=0.68(NS)		t=1.61 p=0.11(NS)		t=5.79 p=0.001** *(S)		t=10.87 p=0.001** *(S)		

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

CONCLUSION

The study was aimed to assess the effectiveness of community based comprehensive lifestyle promotion package on cardio-vascular risk among adult living with hypertension. The findings revealed that there was reduction in the cardiovascular risk score among experimental group after administration of community based comprehensive