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Research Article

Effect of Nurse-led Educational Program on Knowledge of Lifestyle Modification among Patients with Hypertension in Selected Hospital

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Abstract

Introduction: Hypertension is the leading cause of cardiovascular disease and death in the world. A recent estimate suggests that approximately billions of people have hypertension. Hypertension is a major public health problem in India and its prevalence is rapidly increasing among both urban and rural populations. To prevent high blood pressure, everyone should be encouraged to make lifestyle modifications, such as eating healthier diet (DASH diet), weight reduction and stress management, quit smoking and alcohol consumption, and getting more exercise. Since nurse-led educational program has proved to be effective tool in educating people, the researcher felt that by providing nurse-led educational program to hypertensive patients would be highly benefitted as they form a very vulnerable group of people.

Aims: The aims of this study were to assess the effect of nurse-led educational program on knowledge of lifestyle modification among patients with hypertension in selected hospital.

Materials and Methods: One group pre-and post-test research design was adopted. A structured nurse-led educational program and questionnaire administered to asses pre-and post-test knowledge of lifestyle modification among patients with hypertension in selected hospital.

Results: The analysis of the study found that there was a significant change ($P < 0.05$) in knowledge of the hypertensive patients. There was no association found between the various demographic variables and their pre-test knowledge.

Conclusion: The nurse-led educational program proves to be effective in improving the knowledge regarding lifestyle modification among patients with hypertension.

Keywords: Effect, nurse-led educational programmed, dietary approach to stop hypertension.

Introduction

"We cannot change our genes or sex, but we can definitely modify our lifestyle there by protecting our self from hypertension." -Robert C Schlant (2000).

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Hypertension is known as high or raised blood pressure, which is global public health issue. Hypertension, the silent killer which remains asymptomatic until the damage effect of it can be seen. Hypertension is an important and common risk factor for considerable morbidity and mortality not only in the industrialized world but also in developing countries.[1]

It is an overwhelming global challenge; appropriate lifestyle modifications are the cornerstone for the prevention and control of hypertension. Thus, the problem of hypertension can be truly considered as pandemic. The factors contributing to the increased prevalence of hypertension is mainly based on environmental factors, genetic factors, and factors such as alcohol intake, high fat intake, body mass index, and hormonal problems.[2]

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The health consequences of hypertension can be compounded by other factors that increase the odds of heart attack, stroke, and kidney failure. These factors including tobacco use, unhealthy diet, harmful use of alcohol, lack of physical activities and exposure to persistence stress as well as obesity.[3] Hypertension, like any other cardiovascular disease, is managed partly through medication and partly through lifestyle changes. Globally, certain hypertension-related guidelines strongly recommended lifestyle modification in people with hypertension, which includes weight loss, eating a healthy diet, physical exercise, reduce salt intake, and reduce alcohol consumption. Making lifestyle changes can be challenging. It is easy to take a pill in the morning but hard to start jogging or meditating for 20 min daily.[4]

Lifestyle refers to someone's way of living; the things that a person or particular group of people usually do, modification is changed slightly, especially to improve it or make it more acceptable or less extreme. Lifestyle modification is indicated for all patients with hypertension, regardless of drug therapy, because it may reduce or even abolish the need for antihypertensive drugs. In addition to the immediate goal of lowering BP, the recommended lifestyle changes confer a range of health benefits, including better outcome of common chronic diseases.[5]

Losing weight, quitting smoking, eating a healthy diet including DASH diet (eating more fruits, vegetables, and low fat dairy products, less saturated and total fat), reducing amount of sodium intake, getting regular aerobic exercise, and limiting alcohol intake, in addition to lowering blood pressure, these measures enhance the effectiveness.[6]

Hypertension is a major public health problem in India and its prevalence is rapidly increasing among both urban and rural populations. It ranges from 20% to 40% in urban and 12–17% among rural adults.[7]

Materials and Methods

Research approach

The research method adopted for the present study is quantitative (Descriptive evaluatory) approach.

Research design

In the present study, the investigator selected one group pre-test post-test

Variables

Dependent variables

The dependent variable of this study is the knowledge of hypertensive patients in selected hospital.

Independent variables

The independent variable is nurse-led educational program on lifestyle modification.

Population

In this study, population is the hypertensive patients.

Target population

Target population selected for this study consisted of hypertensive patients in selected hospital.

Accessible population

In this study, sample consisted of 50 hypertensive patients.

Sampling technique

The sampling technique used in this research study is non-probability convenient sampling technique.

Sample size

In this study, the study samples consisted of the 50 hypertensive patients.

Criteria for sample selection

Inclusion criteria

The following criteria were included in the study:

- Hypertensive patients in selected hospitals
- Patients who are present at the time of data collection
- Patients who are willing to participant.

Data analysis

The collected data were coded, tabulated, and analyzed using descriptive statistics (mean, percentage, and standard deviation). The researcher planned to analyze the data in the following manner.

- The demographic data will be analyzed in terms of frequency and percentage and will be presented in the forms of tables and graphs
- Nurse-led educational program will be analyzed using frequency and percentage and will be presented in the forms of tables and graphs
- One-way analysis of variance (ANOVA) will be used to assess correlation of knowledge with selected demographic variables.

Data management and analysis procedure

- It was planned to analyze the data based on the objective of the study
- Demographic data were analyzed using frequency and percentage
- Analysis of knowledge score was done using frequency and percentage
- Comparison of knowledge score was done using paired t-test
- Association of knowledge score with selected demographic variable was done using ANOVA.

Results

The data were entered into master sheet for tabulation and statistical processing the obtained data were analyzed, organized, and presented under the following headings:

- Section I: This section deals with analysis of demographic data of hypertensive patients.
- Section II:

  - Assessment of knowledge score regarding lifestyle modification of hypertension.
  - Assessment of over-all knowledge
- Section III: This section deals with the evaluation of effect of nurse-led educational program on knowledge of lifestyle modification among patients with hypertension in selected hospital.
- Section IV: This section analysis and interpretation of data are done to find out association between the pre-test score of knowledge with the selected demographic variable of hypertensive patients.

Section I

Description of the demographic variables of hypertensive patients

Table 1 shows that maximum samples from the age group 51–60 years male. More of them had completed their secondary education had hypertension since 1–5 years. Maximum patients doing service were less active and their monthly income was 30–40,000/month. About 27 patients did not have bad habits and more of them are living in urban and eating vegetarian food.

Section II

Description of the assessment of overall knowledge

Table 2 explains pre- and post-assessment of knowledge levels regarding lifestyle modification among patients with hypertension in selected hospital before and after administration of nurse-led educational program. Pre-test explains majority 40 (80%) had good knowledge. About 5 (10%) had average knowledge and about 5 (10%) had very good knowledge. After administration of nurse-led educational program, the knowledge in post-test explains majority 43 (86%) had excellent knowledge 7 (14%) had very good knowledge.

Section III

This section deals with the evaluation of effectiveness of nurse-led educational program regarding lifestyle modification among patients with hypertension in selected hospital.

Table 3 shows comparison of mean of pre-test and post-test knowledge score regarding lifestyle modification of hypertension among patients with hypertension.

The two tailed "*t*" value for 0.05 level of significance was 2.010 for degree of freedom (df) = 49.

Section IV

This section deals with analysis and interpretation of data to find out association of pre-test score selected demographic variable of hypertensive patients in selected hospital.

Description of the association of demographic variable of hypertensive patients with pre-test knowledge scores – age

Above Table 4 signifies that there is no association of age of patients with hypertension with knowledge within the group. We can state that there is no statistically significant difference between the groups of demographic variables, that is, age of patients with hypertension with respect to knowledge test mean score.

Table 1: Percentage wise distribution of hypertensive patients according to demographic characteristic

Demographic characteristics	Frequency (f)	Percentage
Age (years)		
30–40	5	10
41–50	17	34
51–60	20	40
61–70	6	12
Above 70	2	4
Gender		
Male	30	60
Female	20	40
Education		
Illiterate	3	6
Primary	11	22
Secondary	22	44
Graduate	5	10
Postgraduate	9	18
Others	0	0
Duration of diagnosis		
Newly diagnosed	14	28
1–5 years	22	44
6–10 years	7	14
11–16 years	4	8
>16 years	3	6
Type of work		
Service	18	36
Business	15	30
Homemaker	12	24
Farmer	5	10
Others	0	0
Activity level		
More active	9	18
Less active	25	50
Sedentary lifestyle	16	32
Monthly income		
5–10,000	1	2
10–20,000	3	6
20–30,000	14	28
30–40,000	21	42
Personal habits		
Smoking	12	24
Tobacco chewing	4	8
Alcohol consumption	7	14
No bad habits	27	54
Area of living		
Urban	33	66
Rural	17	34
Dietary pattern		
Vegetarian	10	20
Non-vegetarian	40	80

Association of demographic variable of patients with hypertension with pre-test knowledge scores-activity level and personal habits

Table 5 shows based on the "*F*" test for unpaired sample that the calculated "*F*" value of knowledge score for activity level of hypertensive patient is 1.67. The calculated "*F*" value for personal habit of hypertensive patients is 1.679. These both values are more than table value at 0.05 level which is not significant from above table signifies that there is association

Table 2: Assessment of overall knowledge

Overall knowledge level	Range	Pre-test		Post-test	
		Frequency (f)	Percentage	Frequency (f)	Percentage
Poor knowledge	0–5	0	0	0	0
Average knowledge	06–10	5	10	0	0
Good knowledge	11–15	40	80	0	0
Very good knowledge	16–20	5	10	7	14
Excellent	21–25	0	0	43	86
Total		50	100	50	100

Table 3: Caparison of pretest and post-test mean knowledge

Knowledge comparison	Mean	S.D.	M.D.	*t*-value	Table "*t*"-value	*P*-value
Pre-test	13.220	2.073	8.76	28.040	2.010	<0.05
Post-test	21.980	1.317				

Table 4: Association of demographic variable -age

S. No.	Demographic variable of hypertensive patient	*N*	Mean	Degree of freedom (df)	*F* value	Table *F*-value	*P*-value
	Age			49	0.656	2.4	0.625
	30–40	5	14.2				
	41–50	17	12.64				
	51–60	20	13.45				
	61–70	6	13.33				
	Above 70	2	13				

Table 5: Association of demographic variable- Activity level and personal Habit

S. No.	Demographic variable of hypertensive patient	*n*	Mean	Degree of freedom (df)	*F*-value	Table *F*-value	*P*-value
2	Activity level			49	1.67	2.03	0.197
	More active	9	12.55				
	Less active	25	13.72				
	Sedentary lifestyle	16	12.75				
3	Personal habit			49	1.679	2.03	0.588
	Smoking	12	12.66				
	Tobacco	4	14.25				
	Alcohol	7	12.85				
	No bad habit	27	13.21				

of patients with hypertension and knowledge within the group. We can state that there statistically significant difference between the group of demographic variables activity level and personal habits.

Discussion

The findings of this study have been discussed with reference to the objectives and hypothesis.

The analysis of the pre-test and post-test knowledge regarding lifestyle modification among patients with hypertension in selected hospital. Before calculating 't' value, null hypothesis (H0a) and alternate hypothesis (H1a) were stated. The two tailed "*t*" value for 0.05 level of significance was 2.010 for degree of freedom (df) = 49.

The calculated "*t*" value was found to be 28.040 for knowledge. As the calculated "*t*" value is greater than the table "*t*" value 2.010 at 0.05 level of significance with the degree of freedom being 49, so the null hypothesis (H0a) is rejected and alternate hypothesis (H1a) is accepted. This shows that there is a statistically significant difference in the mean of pre- and post-test knowledge of the sample at 0.05 significant levels.

Same study conducted by Amira A Ansari, Sulaiman Asiri, and Hanan Asiri has conducted a cross-sectional study on knowledge relate to hypertension risk factors, diet, and lifestyle modification in 2020, they have conducted this study to explore the three-dimensioned level of hypertension risk factors, the study results showed that the responded had a high level of knowledge regarding the risk factors, diet modifications, and lifestyle modifications.[8]

A researcher found that the reduction of sodium intake to levels below the current recommendation of 100 mmoL per day and the DASH diet both lower blood pressure substantially, with greater effects in combination than singly. They also found that the long-term health benefits depended on the ability to people to make long-lasting dietary changes and increased availability of lower sodium food.[9]

One more study shows the lifestyle modification such as eating a healthy diet and having adequate exercise is preferred to medication when appropriate to help young people to control

their elevated blood pressure to a desirable level, "said Wang." Lifestyle modification can also reduce the risk of developing many other chronic diseases such as obesity, type 2 diabetes, metabolic syndrome, and cardiovascular diseases.[10]

Conclusion

The analysis of the study revealed that there was a significant difference in the knowledge of hypertensive patients. The nurse-led educational program proves to be effective in improving the knowledge regarding lifestyle modification among patients with hypertension.

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Conflicts of Interest

All authors declare that they have no conflicts of interest.

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