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A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge regarding Hypertension and its Management among Hypertensive Patients Admitted in Various Wards of Indira Gandhi Medical College and Hospital Shimla Himachal Pradesh

Hansa Kumari[1], Dr. Aditya Sharma[2], Pooja Rani Sood[3]

[1]Student, M.Sc. (N), Sister Nivedita Govt. Nursing College, I. G. M. C, Shimla, H. P., India

[2]Guide, Lecturer, Medical Surgical Nursing, S. N. G. N. C, I. G. M. C, Shimla, H. P., India

[3]CI-Cum-ST, Obstetric and Gynaecological Nursing S. N. G. N. C, I. G. M. C, Shimla, H. P., India
Email Id: hansamehta2017[at]gmail.com

Abstract: ***Background: Hypertension is defined as elevated systolic blood pressure more than 140 mmHg and diastolic blood pressure more than 90 mmHg. It is one of the most important risk factor for cardiovascular diseases which is leading cause of mortality. It is chronic progressive disease that develop over many years and patient require education on risks of uncontrolled blood pressure, its management i. e dietary management, pharmacological management and physical activities. So structured teaching programme was developed and administered to improve the knowledge of patients regarding hypertension and it's management. Objectives: The study was conducted with an objective to assess the effectiveness of structured teaching program on knowledge of hypertensive patients regarding hypertension and its management. Methodology: A quasi experimental study was conducted in January 2021 in I. G. M. C. and hospital; Shimla.60 hypertensive patients were selected on the basis of convenient sampling technique and purposefully allocated to experimental group (30) and control group (30). A structured teaching program regarding hypertension and its management was provided to experimental group. The pre-test and post-test (after one week) was assessed in experimental group and control group. Data was collected by self-structured questionnaire related to hypertension and its management. The gathered data was analysed by calculating mean, mean percentage, mean difference, standard deviation, paired t-test, unpaired t-test to evaluate the knowledge score and chi square test to find association of knowledge with selected demographical variables. Results: The study findings showed that post-+test mean score of knowledge regarding hypertension and its management (22.73 ± 3.965 p<0.01) has significantly improved in experimental group as compare to control group (10.23 ± 5.029 p = 0.603) which was statistically non-significant. Conclusion: It is concluded that structural teaching programme has improved the post interventional knowledge score of hypertensive patients regarding hypertension and its management.***

Keywords: STP, hypertension, knowledge, hypertensive patients

1. Introduction

"Your life style, how you eat, emote and think determine your health. To prevent disease you may have to change how to live. "

-BRIAN CARTER

Hypertension is one of the leading cause of death and disability among adults. Hypertension and high blood pressure is defined as the reading of 140/90 mmHg on three consecutive measurements at least six hours apart. It means that heart is working harden than the normal, putting both heart and blood vessels under strain. High blood pressure may contribute to myocardial infarction (MI), stroke, renal failure and atherosclerosis. Hypertension is sometimes called "The silent killer" because people who have it are often symptoms free. Once identified, elevated blood pressure should be monitored at regular interval because hypertension is lifelong disease, it is acknowledged as community health problem of enormous dimension a worldwide scale.1

If hypertension is left untreated nearly half of hypertensive client will die of heart disease, one third will die of stroke, and remaining 10-15% will die of renal failure. Primary hypertension is referred as combination of systolic and diastolic blood pressure elevation, also known as essential or the idiopathic hypertension. When systolic blood pressure is 140 mmHg or higher and systolic remain less than 90 mmHg it is referred as isolated systolic hypertension The individual who develop refractory hypertension with persistent systolic and diastolic elevation and/or if diastolic blood pressure is protracted above 110-120 mmHg are diagnosed with resistant hypertension. Variety of factors are there which contribute to increased risk of hypertension including non-modifiable risk factors like family history, age, gender, ethnicity, and modifiable risk factors like diabetes, stress, obesity, nutrition and substance abuse.2

According to the 7th report of Joint National Committee on prevention, detection and evaluation and treatment of high blood pressure normal blood pressure is systolic blood pressure <120 mmHg and diastolic blood pressure <80 mmHg. Prehypertension when systolic blood pressure is between 120-139 mmHg and diastolic between 80-89 mmHg, Stage I hypertension when systolic blood pressure is between 140-159 mmHg and diastolic between 90-99 mmHg and the Stage II hypertension when systolic blood pressure is above 160 mmHg and diastolic blood pressure above 100 mmHg.3

WHO (2016) stated that "970 million people worldwide have hypertension. In the developed countries, 330 million people and 640 million in the developing countries have hypertension". Hypertension is rated as one the most important causes of premature death worldwide by WHO. The estimate of hypertension in 2025 will be 1.56 billion adults. Hypertension is responsible for 62% of cardiovascular diseases and 49% of ischemic heart disease affecting 25 to 30% of the urban population and 10 to 12% of the rural population in India with high blood pressure. Currently, 30% are still unaware that they have hypertension and even though 59% are receiving treatment; only 34% have maintained the target blood pressure.4

According to American Heart Association in China 23.3% (244.5 million) of Chinese adult population (>18 years) have hypertension and 41.3% (435.3 million) had prehypertension.5Whereas Cardiology society of India in its 70th annual conference represented that every one in five young adults in India has high blood pressure that is around 80 million people which is more than that of the entire population of United kingdom.6

There was a research study done on with uniform tools and nationwide sampling to determine the true prevalence of hypertension in the India. Fourth National Family Health Survey evaluated hypertension in a large population based sample (n = 799, 228) and reported hypertension in 13.8% men and 8.8% women (overall 11.3%) aged 15-49 and 15-54 respectively. Global Burden of Diseases study reported that hypertension led to 1.63 million deaths in India in 2016 as compared to 0.78 million in 1990 (+108%). The disease burden attributable to hypertension increased from 21 million in 1990 to 39 million in 2016 (+89%). Social determinants of hypertension are important and Indian states with greater urbanization, human development and social development have more hypertension. There is poor association of hypertension prevalence with healthcare availability although there is positive association with healthcare access and quality. The health system in India should focus on better hypertension screening and control to reduce cardiovascular morbidity and mortality.7

Hypertensions major contributor to global health burden and the prevalence and rate of diagnosis of hypertension in adolescent appear to be increasing. Though the non-modifiable risk factors continue to contribute to the increased blood pressure but efforts should made to decrease the contribution of modifiable risk factors. One should have enough knowledge about the diseased condition, it's risk factors, preventive measures and it's management once the diagnosis confirms. The current study is to assess the knowledge of hypertensive patient's regarding hypertension and it's management and then enhance their knowledge through structured teaching program so that they can manage their hypertension and prevent cardiovascular complications associated with hypertension.

Research Problem Statement: "A Study to assess the effectiveness of Structured Teaching Program on knowledge regarding hypertension and its management among hypertensive patients admitted in various wards of Indira Gandhi Medical college and Hospital Shimla Himachal Pradesh. "

Objectives of the study

1) To assess the pre-test knowledge regarding hypertension and its management among hypertensive patients of experimental and control group admitted in various wards of IGMC Shimla HP.
2) To develop and administer the structured teaching program on knowledge regarding hypertension and it's management among hypertensive patients of experimental group admitted in various wards of IGMC Shimla HP.
3) To assess the post-test knowledge regarding hypertension and its management among hypertensive patients of experimental and control group admitted in various wards of IGMC Shimla HP.
4) To determine the association of knowledge regarding hypertension and its management among hypertensive patients with selected demographic variables.

2. Methodology

In this study quantitative quasi-experimental approach and non-randomized control design were used to collect the data from the sample size of 60 hypertensive patients (30 in experimental group and 30 in control group) admitted in various wards of Indira Gandhi Medical College and Hospital Shimla.

Convenient sampling technique was used to select the study sample and self-structured knowledge questionnaire was used to collect the data from subjects. The tool comprised of two section-Section A had questions related to socio-demographic variables (Age, Gender, Marital Status, Education, Monthly Income, Religion, Type Of Family, Habits, Place Of Residence, Dietary Pattern), while Section B consisted of questions consisting of 30 questions related to hypertension and its management.

Content validity of tool and structured teaching programme ensured by 11 medical and nursing experts. Reliability of the tool was computed by using Karl Pearson formula and was found to be reliable with value of 0.82.

Ethical approval was sought from the concerned authorities of Indira Gandhi Medical College and Hospital, Shimla. An informed consent was obtained from the participants (hypertensive patients) before administering the tool. Confidentiality and privacy of the collected data was maintained. After taking pre-test, the structured teaching programme was administered and post-test was conducted

after one week. Data was analysed by using descriptive and inferential statistics i. e. frequency and percentage distribution, mean percentage, median, paired 't' test to compare the pre-test and post-test knowledge of hypertensive patients unpaired 't' test to compare the knowledge score of experimental and control group of hypertensive patients regarding hypertension and its management and chi square to determine the association between knowledge with selected variables.

3. Result

Majority of the hypertensive patients in experimental group were in age between 35.1-50 [10 (33.3%)], 50.1-65 [10 (33.3%)] years and in control group more of hypertensive patient were in age group of 35.1-50 years [9 (30%)]. Majority of hypertensive patient were female 35 (58.33%), majority 55 (91.66%) were married, 22 (36.66%) were able to read and write, majority of hypertensive patients had monthly income <20, 000 38 (63.33%), 59 (98.33%) were Hindu, 45 (75%) were from the joint family, majority 32 (53.33%) were not having habits of smoking and drinking, 47 (78.33%) were living in rural residence, majority were non-vegetarian 38 (63.33%).

In in experimental group, in pre-test score, none had excellent score (23-30), 3 (10%) had good score, 19 (63.3%) had average score, 8 (26.7%) had poor knowledge score whereas, in control group none had excellent score (23-30), 5 (16.7%) had good knowledge score, 12 (40%) had average score, and 13 (43.3%) had poor knowledge score.

Tables 4.1: Frequency and percentage distribution of pre-test and post-test knowledge score in Experimental group and Control group

Category Score	Experimental Group		Control Group	
	Pre-test f_1 (%)	Post-test f_1 (%)	Pre-test f_2 (%)	Pre-test f_2 (%)
Excellent (23-30)	0 (0)	15 (50)	0 (0)	0 (0)
Good (16-22)	3 (10)	14 (46.7)	5 (16.7)	5 (16.7)
Average (8-15)	19 (63.3)	1 (3.3)	12 (40)	15 (50)
Poor (0-7)	8 (26.7)	0 (0)	13 (43.3)	10 (33.3)

Maximum = 30 Minimum = 0

In post test score, in experimental group, 15 (50%) hypertensive patients had excellent score (23-30), 14 (46.7%) had good score (16-22), 1 (3.3%) had average score, 0 (0%) had poor knowledge score (0-7) whereas, in control group 0 (0%) had excellent score, 5 (16.7%) had Good knowledge, 15 (50%) had average score and 10 (33.3%) had poor knowledge score. There was a significant increase in the post-test knowledge of the hypertensive patients after administering the structured teaching programme.

Table 4.2: Comparison within the groups with 'paired t-test', N=60

Knowledge Score							
Pre-test				**Post-test**			
Group	**n**	**Mean**	**S. D.**	**Mean**	**S. D.**	**df**	**Paired t-test**
Experimental Group	n_1=30	10.77	3.997	22.73	3.965	29	31.574
Control Group	n_2=30	9.967	4.679	10.23	5.029	29	0.603

't' value 31.574 significant at p≤0.05
Maximum score = 30 Minimum score = 0

Table 4.6 depicts that in pre-test mean knowledge score in experimental group was 10.77 and 9.967 in control group with standard deviation of 3.997 and 4.679 respectively, in post test it was 22.73 and 10.23 with SD 3.965 and 5.029 and 't' value was 31.574 at degree of freedom 29 where table value at 0.05 is 2.05, hence it is significant at the level of 0.05 level of significance. It showed significant difference between pre-test and post-test score of experimental group.

While paired 't' test is not significant for the pre and post-test knowledge score in control group where 't' value is 0.603 with df value 29, where table value at 0.05 is 2.05which is not significant at the 0.05 level of significance. Hence, there was no significant difference between pre-test and post-test knowledge score in control group.

Table 4.3: Comparison between groups with 'unpaired t-test', N=60

Knowledge Score					
Pre-test				**Post-test**	
Group	**n**	**Mean**	**S. D.**	**Mean**	**S. D.**
Experimental Group	n_1=30	10.77	3.997	22.73	3.965
Control Group	n_2=30	9.9667	4.679	10.23	5.029
Unpaired 't' test	**df**	58		58	
	T	0.712		10.691	

't' value 10.691 significant at p≤0.05
Maximum score = 30 Minimum score = 0

Table No.4.7 Depicts that by using unpaired 't' test it was found that there was no significant difference between pre-test knowledge score of experimental and control group at 't' value 0.712 with df 58 where table value at 0.05 is 2.00 but **significant difference** in post-test knowledge scores between experimental and control group at 't' value 10.691 with df 58 where table value at 0.05 is 2.00. Hence it is concluded that structured teaching program was effective to enhance the knowledge of hypertensive patients regarding hypertension and its management.

There was significant association between the level of pre-test score of control group with age (χ^2 = 15.559), education (χ^2 =24.821) and monthly income (χ^2 =16.725) significant at p≤ 0.05 level of significance. And in post-test there was significant association between the level of post-test score of control group with marital status (χ^2 = 6.667) and monthly income (χ^2 = 13.800) significant at p≤ 0.05.

4. Discussion

Hypertension remains an important health challenge. Hypertension is a modern day's epidemic and it is becoming a public health emergency worldwide, especially in the developing countries. **According to Joyce M. Black** – Hypertension is defined as persistent elevation of systolic blood pressure at level of 140 mmHg or higher and diastolic blood pressure at level of 90 mmHg or higher. The quasi experimental study was conducted to assess the effectiveness of the Structured Teaching Program on knowledge regarding hypertension and its management among hypertensive patients admitted in various wards of Indira Gandhi Medical college and Hospital Shimla Himachal Pradesh. In present study the following variables were taken under socio-demographic variables of hypertensive patients like age, gender, marital status, education, monthly income, religion, type of family, habits, place of residence, dietary pattern. The pre-interventional mean score of experimental group was 10.77 whereas in control group the mean score was 9.97. It was concluded that there was no significant difference of pre-test knowledge score between experimental and control group. The structured teaching programme was prepared and administered in experimental group. It included Introduction to hypertension and its management, stages of hypertension, etiological factors and risk factors, clinical manifestations, complication of hypertension, lifestyle modification, dietary modifications for hypertension, importance of weight reduction, health education about physical activities, YOGA techniques for hypertension, education on meditation for hypertension, pharmacological management of hypertension. The post-interventional mean score in experimental group was 22.73 whereas mean score in control group was 10.23. In present study it was found that there was significant change in post knowledge score of experimental group with t value 31.574 at degree of freedom at 29 which significant at the level of 0.05 level of significance. Whereas there was no significant change in post knowledge score of control group

5. Conclusion

The study was conducted to assess the effectiveness of structured teaching programme on knowledge of hypertensive patients regarding hypertension and its management. In experimental group there was a significant difference in the level of score between pre-test and post-test score after administering structured teaching program. Hence the study findings concluded that the administration of structured teaching programme had significantly improved the knowledge of hypertensive patients regarding hypertension and its management.

6. Limitations of the study

Study was limited to knowledge assessment only, was time bound, confined to small numbers of hypertensive patients admitted in inpatient departments of Indira Gandhi Medical College and Hospital Shimla, hence study does not reflect the burden of community as many hypertensive patients remain undiagnosed in community. Further studies with large number of sample size at community level are recommended.

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