A Study to Evaluate the Efficacy of Self-Instructional Module on Knowledge Regarding Diet, Exercise and Lifestyle Modification for Preventive and Curative Modalities of Hypertension among Nursing Officer: Pilot Study

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ABSTRACT

Background: Hypertension is a major world health problem also a silent killer. Educational intervention is vital to increasing knowledge, improving the curative and preventive aspects of Cardio-vascular disease. This study aimed to assess the efficacy of self-instructional module on knowledge regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension among nursing officer.

Research Design: A quantitative research approach with Pre-experimental; one group pre-test post-test design was adopted in this study.

Objective: To evaluate the efficacy of self-instructional module on knowledge regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension among nursing officers working in selected hospitals of Dharwad.

Sample and sampling technique: Total of 40 nursing officers were selected by Non-Probability Purposive Sampling Technique

Data Collection: The tool used for data collection was semi structured socio-demographic proforma and structured knowledge questionnaire regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension.

Data analysis: Collected data was analysed by using descriptive and inferential statistics in terms of frequencies, percentage, mean, standard deviation and 't' test and chi-squared test.

Results: The study findings on pre-test knowledge score were 32(80%) of nursing officer had an average knowledge, none of them had good knowledge, and 08(20%) poor knowledge. In post-test knowledge scores 12(30%) of nursing officers had good knowledge, 28(70%) of them had average knowledge and none of them had poor knowledge. Comparison of pre-test and post-test results revealed that the mean pre-test score was 18.05 and SD was 3.91 where as the mean post-test scores was 24.95 and SD 3.02. The calculated two tailed 't' value was (9.65) which was higher than the table value (2.02) which was highly non-significant at the level 0.05. Hence the null hypothesis was rejected and research hypothesis accepted.

Conclusion: The results clearly indicated that the self-instructional module was effective in enhancing the knowledge of nursing officers.

Key words: Hypertension, nursing officer, knowledge, Self-instructional module.

INTRODUCTION

A non-communicable disease is a medical condition or disease that is chronic, generally progresses slowly, non-infectious, non-transmissible and are the leading causes of death globally, killing more people than all other causes of death combined. Examples of non-communicable diseases

are hypertension, diabetes, cardiovascular diseases etc.[1]

Hypertension or Blood pressure is the force that blood exerts on the vessel wall which varies continuously in arteries due to the intermittent nature of the pump (heart) and elastic recoil of the arterial wall. Being largely asymptomatic with patients experiencing very few signs and symptoms initially, hypertension is known as a "silent" killer and classified as primary (90-95% of all cases) when there are no obvious underlying medical causes or secondary (5 - 10% of all cases) when caused by other conditions that affect organs like the kidneys, heart or tissues and organ systems like the arteries and endocrine system. A normal blood pressure is below 120/70 with the upper number being the highest arterial pressure when the heart beats and fills the arteries (systolic) and the lower being the lowest arterial pressure in the arteries when the heart relaxes (diastolic). Hypertension when left uncontrolled often takes a toll on vital organs throughout the body leading to heart attacks or strokes.[2]

Hypertension is defined as a medical condition in which the blood pressure in the arteries is elevated exceeding 140 over 90 mmHg. This elevation makes the heart work harder than usual to circulate blood through the blood vessels. Many patients suffer from this disease are not aware about this condition early because it is usually occurred without any symptoms. Hypertension takes a long time before diagnosed thereby causing major health problems as damage to organs as the brain and kidneys and so on are the long term effect of hypertension disease. Various risk factors have been associated with hypertension including; age where majority of cases of uncontrolled hypertension are amongst elderly people, sex, race, decrease physical activity, obesity, smoking, dietary, hormonal changes which play key role in the development of hypertension. Identifying these risk factors may help in create

strategizing modalities for reducing preventable risk factors such as weight, excess salt intake, cigarette smoking and alcohol use.[3]

There are several factors predisposing to hypertension. These factors vary from country to country and even there is difference between urban and rural regions of the same place. Realizing the effect of urbanization on our collective health, World Health Organization has chosen "Urbanization and Health" as the theme for World Health Day 2010. Urbanization is considered a determinant of health and one of the key drivers of non communicable diseases (NCDs), especially in low- and middle income countries (LMICs). Urban people are more at risk of these diseases as compared to their rural counterparts.[4]

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.[5]

Hypertension can be treated with drugs (pharmacologically) such as diuretics, vasodilators, calcium channel blockers etc or without drugs (non-pharmacologically) while the latter strictly requires healthy life styles. Often efforts to treat or reduce hypertension have been based mainly on pharmacological approaches with very little on the non pharmacological approaches. stress the need for combination of two or more life style modifications such as exercising, consumption of low sodium, high potassium foods and maintaining healthy weights etc to reduce blood pressure among people living with hypertension. These modifications they stated could help reduce the need for drug treatment of hypertension or complement the effect of antihypertensive drugs.[6]

Although it is a preventable and usually treatable disease but without treatment it leads to serious and life threatening complications such as heart, kidney and brain disorders. Hypertension is a crucial problem in developing countries where there is movement from communicable disease to chronic non-communicable conditions. In addition, hypertension and its complications (i.e. heart failure, stroke, and renal failure) are increasingly associated with older age.[7]

Considering its prevalence and complications, it seems that several factors and barriers are associated with controlling this disease. The most important barrier in diagnosis and control of this condition is the lack of knowledge and awareness about various aspects of hypertension. In addition, there are several reasons for uncontrolled hypertension including undiagnosed hypertension, inappropriate or insufficient medication, and wrong combination of drugs. It is indicated that hypertensive patients had adequate general knowledge and awareness about hypertension but they did not have comprehensive understanding of their condition. For example, they did not recognize the importance of systolic blood pressure (SBP) control and did not care about regular blood pressure (BP) measurement which suggested that an educational and interventional program for hypertensive patients is necessary.[8]

The management and control of hypertension is possible with a combination of medication and strict lifestyle changes. Control programs are required to manage hypertension in a social dimension. However, it is well known that the control of hypertension is inadequate in Turkey and in many other countries. The main reasons for this inadequate control of blood pressure include demographic characteristics, health beliefs and the presence of other chronic diseases. Other reasons include lack of hypertension awareness and lack of knowledge about high blood pressure. While it is difficult or impossible to change demographic and personal characteristics, cultural norms and socioeconomic status, increasing knowledge through educational interventions on treatment can positively influence patients' beliefs about medicines. Because hypertension may occur for many people at some point in their lives, safe and potentially effective preventive measures should be more widely established.[9]

Need for the Study

Hypertension (HTN) is a modifiable and major risk factor for coronary artery disease, heart failure, cerebrovascular disease and chronic renal failure. HTN affects about 1 billion people worldwide and it is estimated that by 2025, up to 1.58 billion adults worldwide will suffer from complications of HTN. The high prevalence of HTN makes it a significant factor for mortality and morbidity. Adequate management of HTN can effectively reduce the risks of stroke, myocardial infarction, chronic kidney disease and heart failure.[10]

Worldwide, hypertension is the third leading risk factor contributing to death, surpassed only by malnutrition and smoking. As a worldwide significant public health challenge, researchers' estimate that complications associated with hypertension currently kill 9 million people every year, with a 60% increase predicted from 972 million in 2000 to 1.56 billion in 2025. Although in the past hypertension was associated with affluence, this has changed since the last two decades with its incidence now higher in Africa than in Europe and USA, and has become the number one cause of death in Africa increasing in the next decade as a result of growing urbanization and related lifestyle changes.[11]

The prevalence of Hypertension (HTN) varies widely across the countries. A recent systematic review estimated that the overall worldwide prevalence of HTN is approximately 26% in the adult population. Awareness varies from 25 to 75% and treatment from 11 to 66%. The control of HTN widely ranges from a low of 5 up to 58%. Some studies have also reported a higher prevalence of HTN among Asian

Indian population apart from higher incidence of diabetes and coronary heart disease.[12]

Hypertension is a major public health problem in India. HTN accounts for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India. It is estimated that a 2-mmHg decrease in blood pressure (BP) population wide can prevent 151 000 strokes and 153 000 coronary heart disease deaths in India.[13]

The barriers to optimum hypertension care and control have been well demonstrated with factors such as lack of knowledge on the dangers of untreated hypertension and benefits of controlling blood pressure, a non-therapeutic patient provider relationship, side effects and complexity of drug regimens, alcohol and illicit drug use, social isolation, cost of care, unemployment and poverty of patients' knowledge, perception, attitudes and life-style practice playing a role.[14]

Increasing awareness of hypertension and more effective treatment of patients is the main focus of primary prevention of cardiovascular diseases. Although many studies have been conducted worldwide, only a few studies have been published on risk factors for poor control among hypertensive patients in Sri Lanka. According to Heymann et al., it has been suggested that patients' knowledge on hypertension and its management as well as physician counselling on a healthy lifestyle and self-care have an independent effect on hypertensive patients' compliance with the recommended lifestyle behaviours. Meanwhile, factors associated with poor control of hypertension are modifiable through tailored, culturally appropriate patient education and treatment strategies.[15]

Knowledge of the predisposing risk factors is vital in the modification of lifestyle behaviors conducive to optimal cardiovascular health. Measuring and appropriately disseminating knowledge of the modifiable risk factors at an early age is an essential preventive educational approach. Strategies to achieve even a modest lowering of the levels of blood pressure in the population of children and young adults are therefore important public health goals.[16]

Objectives of the study

Assess the existing knowledge of nursing officers regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension.

- To determine the efficacy of self instructional module regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension among nursing officers
- To find the association between pre-test knowledge score of nursing officers regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension and selected demographic variables.

Hypotheses

Hypothesis are tested at 0.05 level of significance

H_{01}: There will be no significant difference in pre-test and post-test knowledge scores of nursing officers regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension.

H_{02}: There will be no significant association between knowledge scores of the nursing officers regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension and selected socio-demographic variables.

H_1: There will be significant difference in pre-test and post-test knowledge scores of nursing officers regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension.

H_2: There will be significant association between pre-test knowledge score of the nursing officers regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension and selected socio-demographic variables.

MATERIALS AND METHODS

In the present study, the researcher aimed at evaluating the efficacy of self-

instructional module on knowledge regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension among nursing officers working in selected hospitals of Hubli-Dharwad Cities, Karnataka. Pre-experimental; one group pre-test post-test design was adopted. The study was conducted in selected hospitals of Hubli-Dharwad cities, Dharwad district and Non-Probability Purposive Sampling Technique was used in selection of 40 subjects. The

researcher used Socio-demographic proforma and Structured Knowledge Questionnaire regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension to assess the knowledge of nursing officers. The investigator obtained written consent from subjects prior to the study. The collected data was analysed by using mean, standard deviation for frequency percentage distribution and 't' test for comparison and chi square test for association.

RESULT AND ANALYSIS

Table 1: Frequency and percentage distribution of nursing officers according to their socio-demographic variables [n=40]

Sl.No	Demographic Variables	Frequency	Percentage
1	**Age (In years)**		
	a. 25-35 years	23	57.5%
	b. 36-45 years	11	27.5%
	c. 46-55 years	6	15%
2	**Sex**		
	a. Male	11	27.5%
	b. Female	29	72.5%
3	**Marital status**		
	a. Married	21	52.5%
	b. Unmarried	16	40%
	c. Widow (r)	1	2.5%
	d. Divorced/separated	2	5%
4	**General education**		
	a. PUC/Intermediate	28	70%
	b. Graduation	11	27.5%
	c. Post-Graduation	1	2.5%
5	**Professional education**		
	a. GNM Course	17	42.5%
	b. B.Sc. Nursing	14	35%
	c. P. B. B.Sc. Nursing	8	20%
	d. M.Sc. Nursing	1	2.5%
6	**Designation**		
	a. Senior nursing officer	11	27.5%
	b. Nursing officer	29	72.5%
7	**Experiences (In years)**		
	a. 1-5 years	20	50%
	b. 6-10 years	11	27.5%
	c. 11-15 years	3	7.5%
	d. Above 15 years	6	15%
8	**Have you attended in-service education programme on Hypertension?**		
	a. Yes	14	35%
	b. No	26	65%
9	**Religion**		
	a. Hindu	26	65%
	b. Muslim	4	10%
	c. Christian	8	20%
	d. Others	2	5%

The data presented in the table 1 shows that majority of nursing officers i.e 23(57.5%) were in the age group of 25-35 years, 11 (27.5%) were in the age group of 36-45 years, 06 (15%) were under the age group of 46-55 years. With consideration of Sex among 40 nursing officers 29 (72.5%) were female and rest of them 11 (27.5%)

males. Concerning to the marital status the majority of nursing officers were married 21(52.5%), 16 (40%) were unmarried, 1 (2.5%) were widow, 2 (5%) were divorced. Regarding there General education majority of nursing officers were completed with PUC 28(70%), 11(27.55%) were done with their graduation & rest 1 (2.5%) were with

Post-graduation. With consideration of designation of nursing officers majority were nursing officers 29(72.5%) and rest 11(27.5%) were Senior Nursing officers. With respect to the experience majority of the subjects 20(50%) were having 1-5 year of experience, 11(27.5%) were having 6-10 years of experience, 3(7.5%) were 11-15 years and 6(15%) were having above 15 years' experience. With respect to in service education programme majority 26(65%) have not attended any in service programme where as 14(35%) have attended in service education programmes. With respect to religious majority of them belongs to 26(65%) Hindus, 8(20%) belongs to Christian, 4(10%) belongs to Muslims and 2(5%) belongs to other religion respectively.

Table 2:- Frequency and percentage of nursing officers according to pre and post test level of knowledge. [n=40]

Level of Knowledge	Pre-Test		Post-Test	
	Frequency	Percentage	Frequency	Percentage
Poor Knowledge	08	20%	00	00%
Average Knowledge	32	80%	28	70%
Good Knowledge	00	00%	12	30%

The data presented in table 2 sows that in the pre-test majority 32(80%) of nursing officers had average knowledge, 08(20%) had poor knowledge, and none of them had good knowledge. Where as in the Post-test 12(30%) had good knowledge,28(70%) of the nursing officers had average knowledge and none of them had poor knowledge.

Table 3:-Effectiveness of Self-instructional module on knowledge regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension among nursing officers

Comparison of pre and post-test Mean, Mean difference, SD [n=40]

Level of Knowledge	Mean	Mean Diff	SD	't' Value	df	Table value	'P' value
Pre-Test	18.05	6.9	3.91	9.65	39	2.02	0.00001 [S]
Post-Test	24.95		3.02				

Significant at the level of 0.05

Table 3:- Revels that the pre-test and post-test mean knowledge scores of respondents regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension among nursing officers by dependent 't' test.

Overall pre-test and post-test mean knowledge score on diet, exercise and lifestyle modification for preventive and curative modalities of hypertension established in table 3. The result indicates that the pre-test mean knowledge score was found to be 18.05 percent with SD as 3.91 percent. Further, the post-test mean knowledge score found to be 24.95 percent with SD as 3.02 percent.

The result indicates the significant difference between pre-test and post-test enhancement revealing the efficacy of intervention programme on regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension.

Table 4:- Association between pre-test knowledge score of nursing officers on knowledge regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension among nursing officers.

Association between pre-test level of knowledge score and selected socio-demographic variables of nursing officer

Demographic Variables	f	Interpretation of Knowledge			χ2 value	df	'p' value	Critical value
		Poor	Average	Good				
Age (In years)								
a. 25-35 years	23	3	20	00				
b. 36-45 years	11	3	8	00	1.72	2	0.42	5.99 [NS]
c. 46-55 years	6	2	4	00				
Sex								
a. Male	11	3	8	00	0.5	1	0.47	3.84[NS]
b. Female	29	5	24	00				

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Table no 4: continued…								
Marital status								
a. Married	21	3	18	00				
b. Unmarried	16	3	13	00	5.56	3	0.13	7.81[NS]
c. Widow (r)	1	1	00	00				
d. Divorced/separated	2	1	1	00				
General education								
a. PUC/Intermediate	28	4	24	00				
b. Graduation	11	4	7	00	2.67	2	0.27	5.99[NS]
c. Post-Graduation	1	0	1	00				
Professional education								
a. GNM Course	17	3	14	00				
b. B.Sc. Nursing	14	1	13	00	6.25	3	0.099	7.81[NS]
c. P. B. B.Sc. Nursing	8	4	4	00				
d. M.Sc. Nursing	1	00	1	00				
Designation								
a. Senior nursing officer	11	3	8	00	0.501	1	0.47	3.84[NS]
b. Nursing officer	29	5	24	00				
Experiences								
a. 1-5 years	20	2	18	00				
b. 6-10 years	11	3	8	00	5.73	3	0.12	7.81[NS]
c. 11-15 years	3	2	1	00				
d. Above 15 years	6	1	5	00				
Have you attended in-service education programme on Hypertension?								
a. Yes	14	3	11	00	0.027	1	0.86	3.84[NS]
b. No	26	5	21	00				
Religion								
a. Hindu	26	4	22	00				
b. Muslim	4	2	2	00	3.22	3	0.35	7.81[NS]
c. Christian	8	2	6	00				
d. Others	2	00	2	00				

Table 4 depicts that the association of age, sex, marital status, general education, professional education, designation, experience, attended in-service education programme ,religion found to be non-significant at the level of 0.05 level because respective calculated chi-square value was lesser than table value. The null hypothesis accepted and research hypothesis rejected.

DISCUSSION

By observing the above description this result clearly indicated that self-instruction programme was effective in enhancing the knowledge of nursing officers regarding diet, exercise and life style modification for preventive and curative modalities of hypertension. With respect to the association between pre-test knowledge and demographic variable describe that there is no association of age, sex, marital status, general education, professional education, designation, experience, attended in-service education programme, religion found to be a non-significant at 0.05 level because respective calculated chi-square value was lesser than table value.

CONCLUSION

This study concluded that providing self-instruction module regarding diet, exercise and lifestyle modification for preventive and curative modalities of hypertension enhanced the knowledge of nursing officers. Hence there is need of frequent educational interventions to update the knowledge of nursing officers to provide best care for the patient in the clinical settings.

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