ISSN: 0975-833X

Available online at http://www.journalcra.com

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

International Journal of Current Research
Vol. 13, Issue, 12, pp.19785-19789, December, 2021

DOI: https://doi.org/10.24941/ijcr.42538.12.2021

RESEARCH ARTICLE

EFFECTIVENESS OF INTERVENTION STRATEGIES ON KNOWLEDGE OF LIFE STYLE MODIFICATIONS IN HYPERTENSIVE PATIENTS

[1]Solomon James Mangalaraj and [2]Nalini Jeyavantha Santha

[1]PhD Nursing, Faculty, College of Nursing, Aiims Raipur
[2]PhD Guide, Principal, Sacred Heart Nursing College, Madurai

ARTICLE INFO

Article History:
Received 15th September, 2021
Received in revised form
29th October, 2021
Accepted 10th November, 2021
Published online 29th December, 2021

Keywords
Intervention Strategies,
Life style Modifications,
Knowledge,
Hypertension, Effectiveness.

**Corresponding author:*
Solomon James Mangalaraj

ABSTRACT

Hypertension (HTN) remains a major risk factor for cardiovascular diseases globally and it contributes significantly to cardiovascular and renal diseases. It can be controlled by lifestyle modifications, however in poor communities there is lack of awareness, and treatment and control of hypertension is often poor. Despite considerable improvement in increasing awareness, treatment, and control of HTN, undiagnosed and uncontrolled HTN remains a major public health challenge. The study was conducted to assess the effectiveness of intervention strategies on knowledge of life style modifications in hypertensive patients.

Objectives of the study:

1.To assess the knowledge on lifestyle modifications in hypertensive patients.
2.To find out the effectiveness of intervention strategies on knowledge of life style modifications in hypertensive patients.
3.To find out the association between knowledge and selected demographic variables in hypertensive patients.

Methods: A quantitative research approach with quasi experimental nonequivalent pretest posttest control group design was used for the study. 240 subjects with grade I hypertensive patients were selected by convenience sampling method. The tools prepared by the investigator were structured interview schedule on life style and structured interview schedule on knowledge. **Results:** In the experimental group, 10% had healthy lifestyle in post test-I, 22.5% had healthy lifestyle in post test-II, 48.3% had healthy lifestyle in post test-III. In the control group only 2.5% had healthy lifestyle. In the post test 62.5% and 0.8% had adequate knowledge level in the experimental and control group. The mean pretest knowledge level (9.64) is lesser than the mean post test knowledge (23.86) level in the experimental group. **Conclusion:** Increasing patients' awareness and intervention on medication adherence, low salt diet consumption, physical activity, weight management, cigarette smoking cessation, and alcohol consumption reduction are the most important roles of a nurse.

Citation: Solomon James Mangalaraj and Nalini Jeyavantha Santha. *"*Effectiveness of intervention strategies on knowledge of life style modifications in hypertensive patients*.", 2021. International Journal of Current Research, 13, (12), 19785-19789.*

INTRODUCTION

Hypertension is the most important medical and public health issue, worldwide it affects one billion people leading to 7.1 million deaths per year. Hypertension is one of the leading causes of death and disability among the global adult population. The higher incidence of hypertension damages the physical and economic health of the global community. In India, 196 million adult populations are affected with hypertension. Hypertension is a major risk factor for cardiovascular morbidity and mortality.

Hypertensive patient is at risk of developing myocardial infarction, stroke, renal failure and congestive cardiac failure. 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. Exercise is the main therapy for the primary prevention, treatment and control of hypertension. Low to moderate intensity (60-80%) of exercise reduces systolic blood pressure by 5 to 25 mm of Hg and diastolic blood pressure by 3 to 15 mm of Hg in mild to moderate hypertensive patients.

Yoga and breathing exercises can help to relax and reduce stress levels and consequently lower high blood pressure. Natural remedies are sometimes sufficient to prevent and control high blood pressure in people with family history of hypertension or in people who have the risk factors. A dietary approach to stop hypertension (DASH) emphasizes fruits, vegetables and low-fat dairy foods and includes whole grains, poultry, fish and nuts. The diet plan advises low intake of fats, red meats, sweets and sugared beverages. Lifestyle modifications are effective in lowering blood pressure, reducing cardiovascular risk factors and an as adjunctive therapy for all clients with pharmacological therapy in hypertensive patients (Black and Hawks, 2005, p.1198-1199).

Statement of Problem: Effectiveness of intervention strategies on knowledge of life style modifications in hypertensive patients.

Objectives

- To assess the knowledge on lifestyle modifications in hypertensive patients.
- To find out the effectiveness of intervention strategies on knowledge of life style modifications in hypertensive patients.
- To find out the association between knowledge, and selected demographic variables in hypertensive patients.

Empirical Hypotheses

H_1. The mean post test knowledge of hypertensive patients who received intervention strategies on lifestyle modifications will be significantly higher than the mean pretest knowledge.

H_2. The mean post test knowledge of hypertensive patients who received intervention strategies on lifestyle modifications in the experimental group will be significantly higher than the mean posttest knowledge of the control group.

H_3. There will be a significant association between knowledge and selected demographic variables of the hypertensive patients in the experimental group and control group.

RESEARCH METHODOLOGY

A quantitative research approach with quasi experimental nonequivalent pretest post test control group design was used for the study. By using the simple random sampling method, four hospitals were selected by identical in diagnosis criteria, prescription of medication, treatment protocol, dietary advices, type of service rendered, and economic status of patients attending hospital and admission criteria. Out of these four, two hospitals were assigned randomly to experimental group and two hospitals to control group. 240 subjects with grade I hypertension patients were selected among which 120 samples in experimental group and 120 samples in control group were assigned by convenience sampling method. Samples were selected based on the criteria of age, grade-I hypertension and medications on calcium channel blockers. Pre test was conducted for 30 minutes. Initially the subjects were interviewed to collect demographic data, life style and knowledge level. Data were collected from 16 to 20 samples per week. Followed by this structured interview schedule on lifestyle and structured interview schedule on knowledge were administered to the experimental group. The total duration of intervention was one hour and 5 to 20 subjects were present in each experimental group while giving intervention. Structured teaching program on hypertension and its management, lifestyle modifications regarding diet, exercise, yoga and preventive measures was conducted for 30 minutes by the investigator. No intervention was given to the control group. Post test-I was conducted on 15^{th} day. Post test-II was conducted on 30^{th} day and Posttest III was conducted on 60^{th} day in both experimental group and control group.

Research Tool: Tool consists of three parts. Part I -Structured interview schedule on life style prepared by the investigator consisted of 25 questions which were used to assess the lifestyle modifications of the hypertensive patients.

Scoring Procedure: Maximum score was 75 marks and minimum score was Zero. The scoring procedure was done based on the following; Always – 3 marks, Sometimes - 2 marks, Occasionally - 1mark, and Never – 0 mark.

Scoring Interpretation: Healthy lifestyle – 76 to 100%, Moderately Healthy lifestyle – 50 to 75%, Unhealthy lifestyle – less than 50%.

Part II- Structured interview schedule on knowledge prepared by the investigator consisted of 30 multiple choice questions which were used to assess the knowledge of the hypertensive patients regarding Lifestyle modifications.

Scoring Interpretation: Adequate knowledge – 76 to 100%, Moderately adequate knowledge – 50 to 75%, Inadequate knowledge – less than 50%

Demographic proforma: It comprised of variables such as age, sex, educational status, occupation, religion, dietary pattern, family history of hypertension.

Intervention Strategies: It is an organized and systematically planned structured teaching program to provide information regarding hypertension, its management and prevention by life style modifications.

Life Style Modification: It refers to the improvement of knowledge on hypertension and change in dietary practice, consumption of antihypertensive drugs, regular monitoring of blood pressure, practice of yoga and exercise.

Validity and reliability of the tool: The validity of the tool was established in consultation with nursing experts, medicine, yoga specialist and biostatistician. The stability of the structured interview schedule on lifestyle modifications was done by the test-retest method by using Karl Pearson's correlation coefficient formula. The reliability obtained for the stability of structured interview schedule on lifestyle modifications was 0.9 and structured interview schedule on knowledge was 'r'0.87.

RESULTS AND DISCUSSION

Regarding sex, the majority of the samples, 70 (58.3%) in the experimental group and 64 (53.3%) in the control group were males. Regarding dietary pattern, 112 (93.3%) in the experimental group and 110 (91.7%) in the control group were non vegetarians.

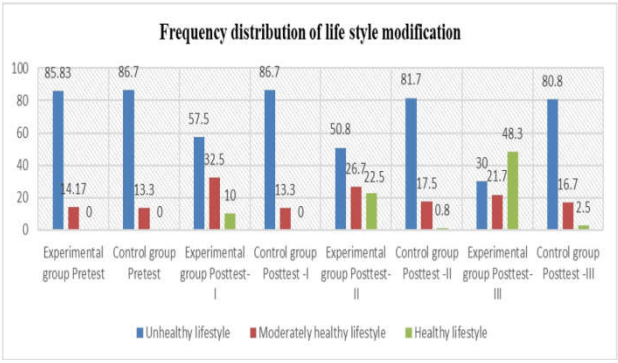

Fig 1. Frequency distribution of lifestyle modification in pretest, post test I, post test II and post test III of hypertensive patients in the experimental group and control group.

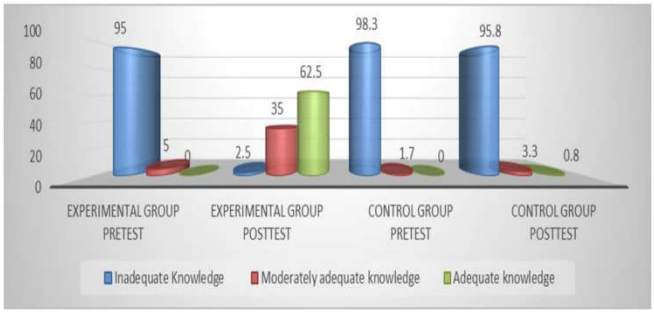

Fig 2. Frequency distribution of knowledge on lifestyle modification in pretest and posttest of hypertensive patients in the experimental group and control group

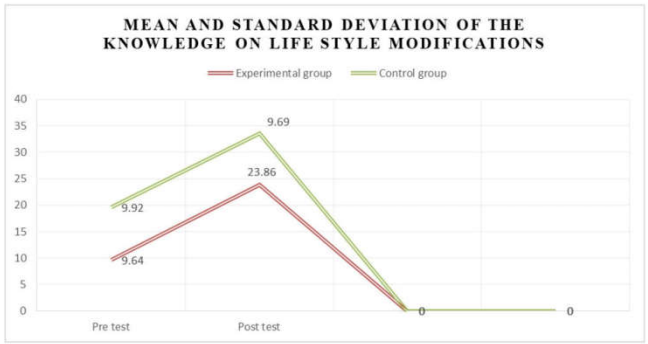

Fig 3. Mean and standard deviation of the knowledge on lifestyle modifications of the experimental and control group among hypertensive patients

Regarding history of smoking, 60 (50%) in the experimental group had equal history of smoking and non-smoking and 64 (53.3%) in the control group had smoking history. Regarding the history of smoking duration, it shows that majority, 32 (26.7%) in the experimental group and 30 (25%) in the control group had 3 to 6 years duration of smoking. In the experimental group, 27 (22.5%) and 24 (20%) in the control group used 4 to 6 cigarettes per day. Regarding history of alcoholic duration, it shows that majority, 27 (22.5%) in the experimental group and 34 (28.3%) in the control group consuming alcohol from past 3 to 6 years. Regarding quantity of alcoholism, it shows that majority, 39 (32.5%) in the experimental group and control group had 90 ml per day. With regard to family history of hypertension, 71 (59.2%) in the experimental group and 73 (60.8%) in the control group had no history of hypertension.

Regarding the duration of hypertension, majority of the subjects, 67 (55.8%) in the experimental group and 75 (62.5%) in the control group had hypertension more than 1 to 5 years of duration. Regarding the duration of taking anti-hypertensive drugs, it shows that majority, 54 (45.0%) in the experimental group and 59 (49.2%) in the control group were taking antihypertensive medicines more than 1 to 5 years of duration. With regard to drugs, the majority of the subjects, 76 (63.3%) in the experimental group and 75 (62.5%) in the control group were taking two drugs per day. Fig -1 showed that in the experimental and control group, none of them had healthy lifestyle in pretest. In the experimental group, 10% had healthy lifestyle in post test-I, 22.5% had healthy lifestyle in post test-II, 48.3% had healthy lifestyle in post test-III respectively. In the control group 2.5% Fig -1 showed that in the experimental and control group, none of them had healthy lifestyle in pretest. In the experimental group, 10% had healthy lifestyle in post test-I, 22.5% had healthy lifestyle in post test-II, 48.3% had healthy lifestyle in post test-III respectively. In the control group 2.5% had healthy lifestyle. Fig-2 represents that in the experimental and control group, none of them had adequate knowledge in the pretest. In the post test 62.5% and 0.8% had adequate knowledge level in the experimental and control group respectively.

Objective 2: To find out the effectiveness of intervention strategies on knowledge of lifestyle modifications among hypertensive patients. Fig 3- summarizes that the mean pretest knowledge level (9.64) is lesser than the mean post test knowledge (23.86) level in the experimental group. There is a significant difference in knowledge scores between the pretest and posttest in the experimental group which is statistically highly significant (t=.33.81, p<.001). Table No 1- shows the comparisons between subjects and within subjects comparison.

Table No 1. 2X2ANOVA test with last variable as repeated measure for the knowledge on lifestyle modifications among hypertensive patients and its repeated contrast test resul (n=240)

Source	F-value	P-value
Between Subjects		
Group	527.52	.000
Within Subjects		
Assessment	946.25	.000
Assessment *Group	991.68	.000

Between subjects Comparisons: The "comparison-Group" result infers that in general the two groups are statistically different with respect to the knowledge level of hypertensive patients.

Within Subject comparisons – The "Within Subjects" comparison also indicates the same type of results between subjects. The significant p value of the "Assessment Group" infers that the changes occur between the posttest and pretest. To conclude, the intervention is effective in improving the level of knowledge of the hypertensive patients.

Objective 3: To find out the association between knowledge and selected demographic variables of the hypertensive patients. There was no significant association between age, sex, education status, occupational status, marital status, family monthly income, religion, diet, area of residence, family history of hypertension, duration of hypertension, duration of antihypertensive medication, group of drugs, drugs taken per

day for hypertension, history of smoking, number of cigarettes/day, history of alcoholism, quantity of alcohol per/day and knowledge of hypertensive patients in the experimental and control group.

Implications for Nursing Practice: A nurse has to play key role in identifying high risk groups to provide adequate information and reinforcement regarding hypertension and its prevention. Nursing personnel can adopt this intervention strategy because of its cost effectiveness, easy administration, clear and precise information in regional language. This can reduce the morbidity. Nursing personnel can be provided with specialized training pertaining to Hypertension and its management in the hospital and community settings.

Implications for Nursing Education: The continuing nursing education program needs to be implemented to learn updated information. Multidisciplinary approach in the treatment of Hypertension has to be emphasized. Nurses can motivate the patients for proper treatment and positive reinforcement on hypertension and its complications.

Implication for Nursing Research

- Extensive research should be done to identify the risk factors and Methods to identify primary prevention.
- Research should be conducted by using different intervention strategies to predict and control hypertension and its complications.
- Meta analysis needs to be conducted to find out appropriate evidence based interventions, measures to control and prevent the mortality and morbidity rate due to hypertension.
- Collaborative research could be initiated to try out various preventive measures to control hypertension.
- Exploratory studies to identify the reasons for the noncompliance of hypertension can be conducted.

Implications for Nursing Administration

Nursing personnel should be provided with in-service education to update their knowledge regarding management of hypertension and its simple measure to manage at home. Nurses can provide information regarding the importance of compliance to the management and medical treatment to get a favorable outcome by practicing simple home care remedies.

Recommendations

- Similar evaluative research study can be conducted in community settings.
- Retrospective study can be done to identify the risk factors of hypertension.
- A comparative study can be conducted to find out the effectiveness of video teaching and pamphlet on hypertension.
- Similar evaluative research study can be conducted by using other intervention strategies.

Limitations of the study

The problems encountered by the investigator were

- The researcher had trouble in teaching illiterate people. This problem is solved by frequent interaction with the patients.
- Convenient sampling technique was used to select the sample for the study.

REFERENCES

Awotidebe, T.O., Adedoyin, R.A., Rasaq, W.A., Adeyeye, V.O., Mbada, C.E., Akinola, O.T., & Otwombe, K.N. (2014). Knowledge, attitude and practice of exercise for blood pressure control: A cross sectional survey. Journal of Exercise Science and Physiotherapy, 10(1).

Basavanthappa, P.T. (2003). Medical Surgical Nursing (1st ed.). India:Jaypee Brothers.

Black, J.M., & Hawks, J.H. (2005). Medical Surgical Nursing: Clinical Management for Positive Outcomes (7th ed.). CA: Elsevier.

Cheng, J.W. (2009). Nebivolol: a third generation beta-blocker for hypertension. Clinical Therapy, 31(3), 447-462. doi: 10.1016/j.clinthera.2009.03.007

Grad, I., Mastalerz-Migas, A., & Kilis- Pstrusinska, K. (2015). Factors associated with knowledge of hypertension among adolescents: implications for preventive education programs in primary care. Bio Medical Central Public Health, 15, 463. doi:10.1186/s12889-015-1773-7

Jebasingh, K.T., Aldhenain, A . R . , Ansari, Z. , Omar, A., Kishore, K. , Saeed, N., & Alagesan, J. (2014). Life style modification in subjects with mild and moderate hypertension.International Journal of Scientific Research, 3(6). doi:105373/22778179

Lewis, S.M., Heitkemper, M.M., & Dirksen, S.R. (2007). Medical Surgical Nursing: Assessment and Management of Clinical Problems (7th ed.). Australia: Mosby.

Lu, C.H., Tang, S-T. , Lei, Y-X. , Zhang, M-Q., Lin, W-Q., Ding, SH., & Wang, P-X. (2015). Community – based interventions in hypertensive patients: a comparison of three health education strategies? Bio Medical Central Public Health. doi:10.1186/s12889-015-1401-6

Madhumitha, M., Naraintran, S., Manohar, C., Revathi, S., Malik, A . , Yoshida, Y., Erkin, T., Salim, D., & Hamajima, N. (2014). Hypertension related knowledge, practice and drug adherence among inpatients of a hospital in Samarkand, Uzbekistan. Nagoya Journal of Medical Science, 76, 255-263.

Margaret Chan (2013). A global brief on Hypertension, World Health Day 2013, 5. Retrieved from ishworld. com/downloads/pdf/global-brief-hypertension.pdf

Polit, D.F., & Hungler, B.P. (1999). Nursing Research: Principles and Methods (6th ed.). MI: Lippincott.

Ramaiah, P. (2015). A study to assess the effectiveness of structured teaching program on the knowledge of lifestyle modification of hypertension among the patients with
hypertension in a selected private hospital at Dharmapuri. International Journal of Educational Science and Research, 5(1), 35-38.

Ramchandra, U., &. Salunkhe, A.H. (2014). A study to assess the effectiveness of structured teaching programme (STP) regarding hypertension and its prevention strategies in terms of knowledge and attitude of selected rural population at Karve area. International Journal of Science and Research, 3(9).

Smeltzer, S.C., & Bare, B.G. (2008). Brunner and Suddarth's Textbook of Medical Surgical Nursing (11th ed.). Philadelphia: Lippincott Williams & Wikins.

Welsh, T., Gladman, J., & Gordon, A.L. (2014). The treatment of hypertension in care home residents: a systematic review of observational studies. Journal of the American Medical Directors Association, 15(1), 8-16. doi:10.1016/j.jamda.2013.06.012

World Health Organization. (2008), Global Health Observatory Data Repository. Geneva, World Health Organization. Retrieved from http://apps.who.int/go/data/view.main

World Health Organization. (2009). Retrieved from www.ncbi.nim.nih.gov>NCBI>literature; NRC Campbell.

World Health Organization. (2011). Global status report on non communicable diseases 2010: description of the global burden of NCDs, their risk factors and determinants. http://www.who.int/nmh/publictions/ncd report2010/en/ World Health Organization. (2016). Retrieved from www.ncbi.nim.nih.gov>NCBI> literature

World Heart Federation. (2016). Retrieved from www. world. heart. federation.org/ cardiovascular-health/ cardiovascular.../ hypertension/wec-2016

Yao L.U., Minggen L.U., Dai, H., Yang, P., Gagen, J . S . , Miao, R. Yuan, H.(2015). Lifestyle and Risk factors of hypertension: follow up of a young pre hypertension cohort. International Journal of Medical Science, 12(7), 605- 612. doi:10.7150/ijms.12446

Yavagal, S.T., Basavaprabhu, A., Prabhu, H.C., Suresh, P.V., Sanjay, P.C., Sameer, A., & Ravikant, P. (2013). Prehypertension – a hidden risk of Indian subcontinent. Journal of Indian Medical Association, 111(2), 118-120.

Zungu, L.I., & Djumbe, F.R. (2013). Knowledge and life style practices of hypertensive patients attending a primary health care clinic in Botswana. URI: http://hdl.handle.net/10500/ 8684015-1773-7

****