

Original Research Article

Nurses' knowledge regarding nursing care and management of hypertensive patients in a selected hospital in Dhaka city

Shima Begum^{1,2}, Khondoker Mahmuda Akter Halim³, Sharmin Islam⁴,
Ratna Khatun⁴, Faisal Muhammad^{2*}

¹Department of Pediatric Nursing, Dhaka Shishu Hospital, Sher-e-Bangla Nagar, Dhaka, Bangladesh

²Department of Public Health, Faculty of Allied Health Sciences, Daffodil International University (DIU), Dhaka, Bangladesh

³Department of Nutrition, ⁴Department of Adult Medical and Surgical Nursing, Grameen Caledonian College of Nursing, Mirpur-2, Dhaka, Bangladesh

Received: 15 March 2019

Revised: 02 April 2019

Accepted: 08 April 2019

*Correspondence:

Dr. Faisal Muhammad,

E-mail: fokkanya@yahoo.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Heart diseases, hypertension, diabetes, COPD and cancer are some of the major NCDs and account for more than three-fifths of a death in Bangladesh. This study was aimed to assess the level of nurses' knowledge regarding nursing care and management of the hypertensive patients.

Methods: This study utilized a descriptive cross-sectional study type and the data were collected using self-administered questionnaire. The respondents were informed about the purpose of the study to obtain their consent and they were given clear instructions on how to fill the questionnaires. All the data were analyzed using Statistical Package for Social Sciences (SPSS) version 22.

Results: In this study slightly above 60.0% of the participants were female and 73% of them were Muslims. More than half (53.0%) of the respondents had B.Sc. in nursing and 51.3% of them had <10 years of service experience. About 70.4% of the respondents had attended a training on hypertension and 92.2% of them knows about normal blood pressure measurement. About 92.2% of the participants knows the causes of hypertension and 82.6% of the respondents mentioned that hypertension management aims to prevent morbidity and mortality and only 39.1% of them knows the recommended diet for people with hypertension.

Conclusions: The finding reported that the nurses' knowledge regarding the management of hypertensive patients and knowledge on hypertension were very good. Developing knowledge among the nurses in relation to hypertension is the key factor to plan for comprehensive nursing care for better prognosis of the patient.

Keywords: Diseases, Hypertension, Knowledge, Nurses, Patients

INTRODUCTION

Hypertension is the most important preventable risk factor for premature death worldwide.¹ It increases the risk of ischemic heart disease, strokes, peripheral vascular disease, and other cardiovascular diseases, including heart failure, aortic aneurysms, diffuse atherosclerosis, chronic kidney disease, and pulmonary

embolism.¹ Hypertension is also said to be a risk factor for impairment and dementia. Other complications of hypertension includes hypertensive retinopathy and hypertensive nephropathy.²⁻⁵ A study reported that as of 2014, approximately one billion adults i.e. about 22% of the population of the world have hypertension.⁶ The prevalence of hypertension increases with age and it is

slightly more frequent in men. It is common in high, medium and low income countries.⁶⁻⁸

Bangladesh has come a long way combating some of the major communicable diseases causing existence of double burden of the diseases at the same time. Nevertheless, the current surveillance system is yet to be implemented appropriately. Stroke/heart disease, hypertension, diabetes, COPD and cancer are some of the major NCDs and cumulatively account for 68% death in Bangladesh.^{9,10} Among these public health problems, hypertension is an emerging epidemic and its prevalence was found to be within 15-20% among the adult population of Bangladesh. It's the major modifiable risk factor for cardiovascular disease and some other complications like heart failure, renal failure etc.¹¹ Hypertension has modifiable risk factors related to lifestyles, primarily tobacco smoking, lack of physical activity, unhealthy diet, harmful use of alcohol etc, are modifiable.¹²

METHODS

A descriptive cross-sectional type of study was carried out among nurses working in National Institute of Cardiovascular Diseases (NICVD), Dhaka Bangladesh to determine their knowledge on nursing care and management of hypertensive patients. All the nurses working in this hospital were included and non-nursing staffs were excluded for participation. A total of 115 nurses were selected using convenience sampling technique.

The study was carried out for a period of four months (April to August 2018) and the study population were all the nurses working in National Institute of Cardiovascular Diseases (NICVD), Dhaka Bangladesh during the period of this study. All the nurses who had at least 6 months service experience and willing to participate were included and those who had less than 6 months service experience or were sick during the study period were excluded for participation.

Data were collected using self-administered semi-structured questionnaire for a period of three weeks. The sampled respondents were informed about the purpose of the study to obtain their consent and they were given clear instructions on how to fill the questionnaires. The questionnaires were given to all the nurses who were on duty during the period of study and consent to participate were obtained. Researcher and the assistant issued questionnaires to respondents and gave them time to fill, then hand them back before they leave for home from a given shift. The researcher ensured that all the questionnaires were properly completed. All the data collected were coded numerically and entered into the SPSS version 22.0 software program for analysis. A descriptive statistical analysis was used to calculate the frequencies and percentages. The descriptive analysis of data was presented as tables. The level of knowledge was

categorized based on knowledge scores; excellent (80-100%), very good (70-79%), good (60-69%), satisfactory (50-59%) and poor (0-49%).

An official letter of request for access to official information was sent from Daffodil International University through Department of Public Health, to the Management of National Institute of Cardiovascular Diseases (NICVD) Dhaka Bangladesh. Oral request were made to the nurses. This was done to inform them about the purpose and benefits of the study. The study was approved by Ethics Committee of the Faculty of Allied Health Sciences (FAHS) through Department of Public Health, Daffodil International University Dhaka Bangladesh.

RESULTS

Socio-demographic characteristics of the respondents

Table 1 showed that little above three-fifths (61.8%) of the respondents belongs to age group 33 years and below. Most of the participants (61.7%) were female and the majority (69.6%) of the participants were married.

Table 1: Socio-demographic characteristics of the respondents (n=115).

Variables	Frequency	Percent
Age (years)		
≤33	71	61.8
≥34	44	38.2
Sex		
Male	44	38.3
Female	71	61.7
Marital Status		
Married	80	69.6
Unmarried	35	30.4
Religion		
Muslim	84	73.0
Hindu	30	26.1
Buddhist	1	0.9
Qualifications		
Diploma	39	33.9
B.Sc. in Nursing	61	53.0
Masters	15	13.0
Years of Service Experience		
<10 years	59	51.3
10-20years	41	35.7
>20 years	15	13.0
Training on hypertension		
Yes	81	70.4
No	34	29.6

More than seven-tenths (73%) of the respondents were Muslims, followed by Hindu (26.1%) and the remaining were Buddhist. More than half (53.0%) of the respondents had B.Sc. in nursing, followed diploma in

nursing (33.9%) and the rest had masters level of education. Little above half (51.3%) of the respondents had <10 years of service experience, followed by 35.7% who had 10-20 years' service experience and 13% had more than 20 years of service experience. 70.4% of the respondents had attended a training on hypertension.

Nurses knowledge regarding nursing care and management of hypertensive patients

Table 2 shows that more than nine-tenths (92.2%) of the participants knows about normal blood pressure measurement and 81.7% of them knows blood pressure level that indicate pre-hypertension. About 92.2% of the participants knows the causes of hypertension and 67.0% of them knows the hypertension risk factors. About 62.6% of the respondents knows about maintaining bed rest and elevating head of bed and 60% of the respondents knows about monitoring and recording of BP

while the patient is at rest. About 62.6% of the respondents can observe the sudden hypotension and 60% can monitor electrolytes, BUN and creatinine. More than seven-tenths (73%) of the respondents knows about observe skin color, moisture, temperature, and capillary refill time and 29.6% of the respondents knows about monitoring response to medications to control blood pressure. About 82.6% of the respondents mentioned that hypertension management aims to prevent morbidity and mortality and only 39.1% of them knows the recommended diet for people with hypertension. About 66.1% of them knows the moderate salt restriction of hypertensive patient and 87% mentioned that weight loss is important in management of hypotensive patient. 70.4% of the respondents said decrease in ethanol intake helps in the management of hypertension and 91.3% of them stated that relaxation is a technique that aims to reduce tension or anxiety.

Table 2: Nurses knowledge regarding nursing care and management of hypertensive patients (n=115).

Items	Yes N (%)	No N (%)
Knowledge regarding hypertension		
Knows normal blood pressure measurement	106(92.2)	9(7.8)
Knows blood pressure level that indicate pre-hypertension	94(81.7)	21(18.3)
Knows causes of hypertension	106(92.2)	9(7.8)
Knows that hypertension is a risk factor for cardiovascular diseases	55(47.8)	60(52.2)
Knows hypertension risk factors	77(67.0)	38(33.0)
Knows how to measure blood pressure of a patients	74(64.3)	41(35.7)
Systolic pressure represents the pressure when the heart contracts	81(70.4)	34(29.0)
Diastolic pressure represents the pressure when the heart is relaxed	73(63.5)	42(36.5)
Knowledge regarding nursing care for hypertensive patients		
Knows about maintaining bed rest and elevating head of bed	72(62.6)	43(37.4)
Know about assessing blood pressure in both arms during admission	69(60.0)	46(40.0)
Knows about monitoring and recording of BP while the patient is at rest	93(80.9)	22(19.1)
Can you Observe the sudden hypotension	72(62.6)	43(37.4)
Can you Monitor electrolytes, BUN and creatinine	69(60.0)	46(40.0)
Can you Measure inputs and expenditures	70(60.9)	45(39.1)
Observe skin color, moisture, temperature, and capillary refill time	84(73.0)	31(27.0)
Instruct in relaxation techniques, guided imagery and distractions	83(72.2)	32(27.8)
Monitoring response to medications to control blood pressure	34(29.6)	81(70.4)
Knowledge on management of hypertensive patients		
Hypertension management aims to prevent morbidity and mortality	95(82.6)	20(17.4)
Knows the recommended diet for people with hypertension	45(39.1)	70(60.9)
Knows about advising the patient to Stop smoking	100(87.0)	15(13.0)
Knows moderate salt restriction of hypertensive patient	76(66.1)	39(33.9)
Is good for the hypotensive patient to consume diets low in cholesterol	87(75.7)	28(24.3)
Weight loss is important in management of hypotensive patient	100(87.0)	15(13.0)
Decrease in ethanol intake helps in the management of hypertension	81(70.4)	34(29.6)
Relaxation is a technique that aims to reduce tension or anxiety	105(91.3)	10(8.7)

Knowledge scores distribution of the respondents

Table 3 showed the knowledge scores of the respondents. According to knowledge on hypertension, the participants

had very good knowledge (74.8%). Regarding the knowledge on management of hypertensive patient, the respondents were found to have a very good knowledge (73%). However, based on knowledge regarding the

nursing care of the hypertensive patients, the respondents had good level of knowledge (65.2%).

Table 3: Knowledge scores distribution of the respondents.

Score	Knowledge on hypertension N (%)	Nursing care for hypertensive patient N (%)	Management of hypertensive patient N (%)
Correct	86(74.8)	75(65.2)	84(73.0)
Incorrect	29(25.2)	40(34.8)	31(27.0)
Total	115(100.0)	115(100.0)	115(100.0)

Table 4: Knowledge scale distribution.

Excellent	80-100%
Very Good	70-79%
Good	60-69%
Satisfactory	50-59%
Poor	0-49%

DISCUSSION

In this study the total 115 nurses were participated and their responses were assessed. Educational attainment refers to the highest level of schooling that a person has reached. In our study based on educational qualification, more than half (53.0%) of the respondents had B.Sc. in nursing, followed diploma in nursing (33.9%) and the rest had masters level of education.

Nursing is a profession within the health care sector focused on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life. Nurses may be differentiated from other health care providers by their approach to patient care, training, and scope of practice. According to attending training regarding hypertension, 70.4% of the respondents had attended a training regarding hypertension.

A nurse can give sufficient care, and the results of reducing the patient's weight and changes in lifestyle (smoking cessation, reduction in alcohol intake, salt restriction, and increase in physical activity) are good.¹³ especially for older patients with isolated systolic hypertension, it is wise to use non-pharmacological treatment.¹⁴

More than nine-tenths (92.2%) of the participants knows about normal blood pressure measurement and 81.7% of them knows blood pressure level that indicate pre-hypertension. About 92.2% of the participants knows the causes of hypertension and 67.0% knows the hypertension risk factors. About 62.6% of the respondents knows about maintaining bed rest and elevating head of bed and 60% of the respondents knows

about monitoring and recording of BP while the patient is at rest. About 62.6% of the respondents can observe the sudden hypotension and 60% can monitor electrolytes, BUN and creatinine. Patients with controlled hypertension improved markedly when a nurse took part in the care.

In western Australia patients with controlled hypertension improved from 70% to 87% in 3 years and in Israel the controlled hypertensive patients improved from 70% to 99%.^{15,16} The nurse took care of the contact with the patients, as she was presumed to be best at interacting with the patient and continuity of care.¹⁷

More than seven-tenths (73%) of the respondents knows about observe skin color, moisture, temperature, and capillary refill time and 29.6% of the respondents knows about monitoring response to medications to control blood pressure. About 82.6% of the respondents mentioned that hypertension management aims to prevent morbidity and mortality and only 39.1% of them knows the recommended diet for people with hypertension. About 66.1% of them knows the moderate salt restriction of hypertensive patient and 87% mentioned that weight loss is important in management of hypotensive patient. 70.4% of the respondents said decrease in ethanol intake helps in the management of hypertension and 91.3% of them stated that relaxation is a technique that aims to reduce tension or anxiety. Nurses could give the patient more time, and their tasks in the programs were to measure blood pressure, provide information, educate in self-measurement, give advice about diet, control the intake of medicine, control laboratory tests, encourage the patient, and be an interpreter for the physician.¹⁸ Psychological problems and side effects were observed by the nurse and reported to the physician.¹⁹ Patients with complications were managed by the physician.²⁰

CONCLUSION

The finding reported that the nurses' knowledge regarding the management of hypertensive patients and knowledge on hypertension were very good (73% Vs75%). Nevertheless, the knowledge regarding nursing care for hypertensive patients was good (65%). Sincere and more sustained efforts are required to increase the knowledge of staff nurses regarding the nursing care and management of hypertensive patients.

Recommendations

Establishment a protocol concerning nursing care and management for hypertensive patients, training the nursing staff on this particular issue. Creating awareness and developing knowledge among the nurses in relation to hypertension is the key factor to plan for comprehensive nursing care for better prognosis of the patient and to reduce some problems and improve the quality of life of hypertensive patients. Overall the nurse's education should be increased.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. World Health Organization. Global health risks: mortality and burden of disease attributable to selected major risks, 2009. Available at: <https://apps.who.int/iris/handle/10665/44203>.
2. Lewington S. Prospective studies collaboration. Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet.* 2002;360:1903-13.
3. Singer DR, Kite AK. Management of hypertension in peripheral arterial disease: does the choice of drugs matter?. *Euro J Vasc Endovas Surg.* 2008;35(6):701-8.
4. Gareth B, Gregory YHL, Eoin O. ABC of hypertension. The pathophysiology of hypertension. *BMJ.* 2001;322(7291):912-6.
5. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, et al. Seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure. *Joint National Committee Prevention.* 2003;42(6):1206-52.
6. World Health Organization. Raised blood pressure. Global Health Observatory (GHO) data, 2014. Available at: https://www.who.int/gho/ncd/risk_factors/blood_pressure_prevalence_text/en/.
7. Carretero OA, Oparil SO. Essential hypertension. Part I: definition and etiology. *Circulation.* 2000;101(3):329-35.
8. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, et al. Global burden of hypertension: analysis of worldwide data. *Lancet.* 2005;365(9455):217-23.
9. El-Saharty S, Ahsan KZ, Koehlmoos TLP, Engelgau MM. Tackling non-communicable diseases in Bangladesh: now is the time. Washington DC: World Bank Publications; 2013:1-3.
10. Director General of Health Service (DGHS). MOHFW. Strategic plan for surveillance and prevention of Non-communicable Disease in Bangladesh 2007-2011; 2007:1-46.
11. Krishnan A, Garg R, Kahandaliyanage A. Hypertension in the South East Asia region. *Regional Health Forum: WHO South East Asia Region.* 2013;17(1):7-14.
12. Alwan A. Global status report on non-communicable diseases 2010. World Health Organization (WHO). 2011:9-31.
13. Ramsay JA, McKenzie JK, Fish DG. Physicians and nurse practitioners: do they provide equivalent health care? *Am J Public Health.* 1982;72(1):55-7.
14. Watkins LO, Wagner EH. Nurse practitioner and physician adherence to standing orders criteria for consultation or referral. *Am J Public Health.* 1982;72:22-9.
15. Cullen KJ, McCall MG, Stenhouse NS. Community control of hypertension. *Aust N Z J Med.* 1976;6:403-6.
16. Abel E, Darby AL, Ramachandran R. Managing hypertension among veterans in an outpatient screening program. *J Am Acad Nurse Pract.* 1994;6(9):413-9.
17. Clark AB, Dunn M. A nurse clinician's role in the management of hypertension. *Arch Intern Med.* 1976;136:903-4.
18. Fuchs Z, Viskoper JR, Drexler I, Nitzan H, Lubin F, Berlin S, et al. Comprehensive individualized non-pharmacological treatment programme for hypertension in physician-nurse clinics: two-year follow-up. *J Hum Hypertens.* 1993;7:585-91.
19. Johnson R. Nurse practitioner-patient discourse: uncovering the voice of nursing in primary care practice. *Sch Inq Nurs Pract.* 1993;7(3):143-57.
20. Hill MN, Reichgott MJ. Achievement of standards for quality care of hypertension by physicians and nurses. *Clin Exper Hypertens.* 1979;1(5):665-84.

Cite this article as: Begum S, Halim KMA, Islam S, Khatun R, Muhammad F. Nurses' knowledge regarding nursing care and management of hypertensive patients in a selected hospital in Dhaka city. *Int J Res Med Sci* 2019;7:1914-8.