



ORIGINAL RESEARCH ARTICLE

COUNSELING ON LIFE STYLE MODIFICATION AND KNOWLEDGE AND BELIEF OF HYPERTENSION AND ITS MANAGEMENT AMONG HYPERTENSIVE PATIENTS VISITING COMMUNITY BASED SCREENING AND MANAGEMENT PROGRAM IN EASTERN NEPAL

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ABSTRACT

Background: Hypertension is a global health problem with almost quarter of adults estimated to have high blood pressure. There are evidences showing effectiveness of lifestyle modification on the prevention and management of hypertension. The adherence to lifestyle modifications and medication depends upon knowledge and belief on management of hypertension and the counseling they received from medical staffs. **Methods:** In this prospective crossover study, 140 hypertensive patients were enrolled after getting written informed consent. This study was performed after obtaining the ethical clearance from Institutional Research Committee (IRC), BPKIHS, and Dharan. Data was collected using validated structured self-constructed questionnaire from the hypertensive patients visiting community program (KHDC) held on first Saturday of every month for follow-up. KHDC is a community based program for early detection and management of Kidney disease, Hypertension, Diabetes and Cardiovascular diseases. For descriptive statistics, percentage, mean, Standard deviation was calculated along with graphical and tabular presentation. **Results:** Out of 140 patients enrolled 52.1% were male. Majority of the patient were aged between 40-59 years of age (50.7%). Most of them were Aryans 55.7 % followed by Mongolians 44.3%. Mean of Systolic Blood pressure was 131.48(SD ± 16.57) and Mean of Diastolic Blood pressure was 81.7(SD ± 9.57). Majority of patient believed that they have received appropriate counseling from the medical staffs in regards to appropriate diet, Body weight, Smoking cessation, Physical activity and risk and complication of hypertension. Overall knowledge rate was high on all items but 27.9% patients believed that treating with drugs is sufficient for the management of hypertension. Only 7.1 % of them were smokers whereas 24.3% consumed alcohol, 72.1 % patients were non vegetarians and most of them preferred average amount of salt in their meal 52.1%. However 44.3 % patients preferred low amount of salt. Sixty percentages of patients reported that they were doing physical exercise regularly. **Conclusion:** The knowledge and belief on the management of hypertension is high in the hypertensive patients visiting community based program for early detection and management of Kidney disease, Hypertension, Diabetes and Cardiovascular diseases. Further, most patients received the counseling on lifestyle modification which was reflected in their general behavior

Keywords: Behavior, Belief, Counseling, Hypertension, Knowledge,

INTRODUCTION

Hypertension is a global health problem with almost quarter of adults estimated to have high blood pressure.¹ Studies shows high prevalence of Hypertension in Nepal. Study done in Dharan, Eastern Nepali found a prevalence of almost 23% (according to JNC VII guidelines).²

There are evidences showing effectiveness of lifestyle modification on the prevention and management of hypertension.³ A life style modification includes smoking cessation; weight reduction, proper diet,

and regular physical activity.⁴ Most of the patients are non-adherent to lifestyle modification or non-pharmaceutics recommendations.

The adherence to lifestyle modifications and medication depends upon knowledge and belief on management of hypertension and the counseling they received from medical staffs.⁵⁻⁶ Physicians and other medical staffs may play a crucial role in improving knowledge and belief of patients and thus improving the compliance to lifestyle modifications.⁷⁻⁸ Moreover reinforcement of lifestyle modification counseling might help in this regard.

KHDC is a community based program for early detection and management of Kidney disease, Hypertension, Diabetes and Cardiovascular diseases. In this program a medical team visits the patients every month and thus the patients receive the counseling on lifestyle modification in regular basis. This study was planned to assess the knowledge and belief of hypertensive patients, on the management of the disease. Further this study also aims to find if these patients visiting community based program, have received the counseling on life style modification and their general behavior including the physical activity.

Methodology

In this prospective crossover study, 140 hypertensive patients were enrolled after getting written informed consent. This study was performed after obtaining the ethical clearance from Institutional Research Committee (IRC), BPKIHS, and Dharan. The study duration was of 6 months starting, June 2017.

Data was collected using validated structured self-constructed questionnaire (translated in Nepali also) which have been prepared after reviewing multiple literatures⁹⁻¹¹ from the hypertensive patients visiting community program (KHDC) held on first Saturday of every month for follow-up. KHDC is a community based program for early detection and management of Kidney disease, Hypertension, Diabetes and Cardiovascular diseases.¹²

This study considered 95% CI and 90% power to estimate the sample size. For this purpose we considered the compliance rate is 78 %⁹. Now using the following formula:

- $N = Z^2PQ/L^2$
- Where
- $Z^2 = 4$ at 95% CI
- $P = 78$
- $Q = 22$
- $L = 7.8$ (10% of P)
- $4 * 78 * 22 / (7.8)^2$
= 6864/60.84
= 112.82

Now adding 20% in calculated sample size to reduce various biases, then it becomes, approximately 140. The information regarding socio-demographic data, Blood pressure (measured value in mm Hg), knowledge, and belief, general behavior was entered in MS excel. The patient’s response on questions if they got counseling from medical staffs on life style

modification was also recorded. The data was then analyzed using SPSS 17.0 version. For descriptive statistics, percentage, mean, Standard deviation was calculated along with graphical and tabular presentation.

Results

Out of 140 patients enrolled 52.1% were male. Majority of the patient were aged between 40-59 years of age 50.7%, 45.7 % patient were 60 years and above. Rests were below 40 years. Most of them were Aryans 55.7 % followed by Mongolians 44.3%. Mean of Systolic Blood pressure was 131.48(SD ± 16.57) and Mean of Diastolic Blood pressure was 81.7(SD ±9.57). Most of the patients said that their blood pressure is controlled 75 % (Table 1)

Majority of patient believed that they have received appropriate counseling from the medical staffs in regards to appropriate diet, Body weight, Smoking cessation, Physical activity and risk and complication of hypertension (Table 2). Overall knowledge rate was high on all items but 27.9% patients believed that treating with drugs is sufficient for the management of hypertension (Table 3). The belief of patients about hypertension and its management was high (Table 4).

Only 7.1 % of them were smokers whereas 24.3% consumed alcohol, 72.1 % patients were non vegetarians and most of them preferred average amount of salt in their meal 52.1%. However 44.3 % patients preferred low amount of salt. Sixty percentages of patients reported that they were doing physical exercise regularly (Table 5).

Table 1: Socio-demographic and medical characteristics of patients

	n=140
Age(yrs.)	
<40	5(3.6)
40-59	71(50.7)
>60	64(45.7)
Gender	
Male	73(52.1)
Female	67(47.9)
Race	
Aryans	78(55.7)
Mongolians	62(44.3)
Blood pressure	
Mean systolic BP	131.71

Mean Diastolic BP	81.97
Is your blood pressure controlled?	
Yes	105(75)
Sometimes	21(15)
No	14(10)

Table 2: Patients’ report on lifestyle and self-management counseling by medical staff

n=140

Lifestyle counseling	
Medical Staff recommended physical activity	
Yes	119(85)
Medical Staff discussed smoking cessation	
Yes	109(77.9)
Medical staff discussed the need for the a suitable diet	
Yes	113(80)
Medical staff discussed about weight control	
Yes	110(78.6)
Self- management counseling	
Risks and complications of high blood pressure	
Yes	99(70.7)
Current physician explained about signs for deterioration	
Yes	69(49.3)
Self-measurement of BP	
Yes	81(57.9)

Table 3: Patients’ reported knowledge about hypertension and its management

Knowledge on hypertension		n=140
Unbalanced blood pressure can damage blood vessels and lead to heart attacks and strokes		
True	129(92.1)	
False	11(7.9)	
Being overweight does not affect blood pressure		
True	125(89.3)	
False	15(10.7)	
Salt consumption raises blood pressure?		
True	131(93.6)	
False	9(6.4)	
Physical exercise helps reduce blood pressure		
True	128(91.4)	
False	12(8.6)	
Medication is all that is needed to treat hypertension		
True	39(27.9)	
False	101(72.1)	

Table 4: Patients’ reported beliefs about hypertension and its management

n=140	
Beliefs	
I believe that medication to reduce hypertension will help me feel better	
Yes	136(97.1)
No	4(2.9)
I believe that a diet to reduce hypertension will help me feel better	
Yes	135(96.4)
No	5(3.6)
A hypertension patient has to be treated constantly, whether or not his/her health improves	
Yes	135(96.4)
No	5(3.6)
I believe that it is possible to control my blood pressure	
Yes	136(97.1)
No	4(2.9)

Table 5: Patients’ reported Health behaviors

n=140	
General Behavior	
Do you exercise regularly?	
Yes	84(60)
Do you Smoke?	
Yes	10(7.1)
Do you consume Alcohol?	
Yes	34(24.3)
Salt Intake in the Diet?	
Low	62(44.3)
Average	73(52.1)
High	5(3.6)
You are Vegeterian or non-vegeterian?	
Vegeterian	39(27.9)
Non-vegeterian	101(72.1)

DISCUSSION

Hypertension was mostly seen in patients above 40 years of age. This finding was consistent with the study done in china¹³. Out of 140 patients 52.1% of them were male. One retrospective study shows the similar results in which 54.66% of hypertensive patients were male¹⁴. Mean of Systolic BP was 131.48(SD+- 16.57) and Mean of Diastolic BP was 81.7(SD+-9.57). This implies that most of

the patients had their BP controlled. Moreover 75% of the patients reported that their BP is under controlled.

Most of the patients reported that they have received appropriate counseling from the medical staffs regards to suitable diet (80%), Body weight (78.6%), Smoking cessation (77.9%), Physical activity (85%) and risk and complication of hypertension. One similar study done on 3497 hypertensive patients also showed 84% receiving counseling on life style modification.¹⁵ Heymann also founded in their study, that most of the hypertensive patients reported to have receive the counseling on lifestyle modifications.⁹

Overall knowledge rate was high on all items; however 27.9% patients believed that treating with drugs is sufficient for the management of hypertension. Study done by Long etal revealed high level of knowledge regarding hypertension management in most of the hypertensive patients.¹⁶ Further Heyman found that overall knowledge rate was high similar to our study but in their study 37%⁹ patients thought that treating the disease only with medication was sufficient, which was bit higher as compare to ours.

The belief of our patients on hypertension and management was high. Above mentioned study founded the belief of the hypertensive patients comparable to ours finding.⁹

Most of the hypertensive patients (60%) in our study reported to do the physical activity regularly. Furthermore, majority of patients said they take either average or low amount of salt in their diet. Only 7%of them were smokers. So the patients had good knowledge, belief of hypertension management and most of them reported to have received counseling regarding lifestyle modification. Further most of the patients adhere to good general behavior. This may be the result of the design of KHDC program, where the medical team goes monthly to the same cohort of patients in their door step and in this process, the information pertaining to hypertension and life style modification are reinforced frequently.

CONCLUSION

The knowledge and belief on the management of hypertension is high in the hypertensive patients

visiting community based program for early detection and management of Kidney disease, Hypertension, Diabetes and Cardiovascular diseases. Further, most patients received the counseling on lifestyle modification which was reflected in their general behavior.

REFERENCE

1. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global burden of hypertension: analysis of worldwide data. *Lancet*;365(9455):217–23.
2. Vaidya A, Pathak RP, Pandey MR. Prevalence of hypertension in Nepalese community triples in 25 years: a repeat cross-sectional study in rural Kathmandu. *Indian Heart J.* 2012 ;64(2):128–31.
3. Dickey RA, Janick JJ. LIFESTYLE MODIFICATIONS IN THE PREVENTION AND TREATMENT OF HYPERTENSION. *Endocr Pract.* 2001;7(5):392–9.
4. Winslow E. Lifestyle Modification: Weight Control, Exercise, and Smoking Cessation.;
5. Jankowska-Polańska B, Uchmanowicz I, Dudek K, Mazur G. Relationship between patients' knowledge and medication adherence among patients with hypertension. *Patient Prefer Adherence.* 2016 ;10:2437–47.
6. Roumie CL, Elasy TA, Greevy R, Griffin MR, Liu X, Stone WJ, et al. Improving blood pressure control through provider education, provider alerts, and patient education: a cluster randomized trial. *Ann Intern Med.* 2006;145(3):165–75.
7. Lancaster T, Stead L. Physician advice for smoking cessation. In: Stead L, editor. *Cochrane Database of Systematic Reviews* ; 2004 . p. CD000165.
8. Thorogood M, Hillsdon M, Summerbell C. Cardiovascular disorders. Changing behaviour. *Clin Evid .* 2003;(10):95–117.
9. Heymann AD, Gross R, Tabenkin H, Porter B, Porath A. Factors associated with hypertensive patients' compliance with recommended lifestyle behaviors. *Isr Med Assoc J .* 2011 ;13(9):553–7.
10. Duarte-Silva D, Figueiras A, Herdeiro MT, Rodrigues AT, Branco FS, Polonia J, et al. Pharmacy

- Practice. Vol. 12, Pharmacy Practice; 2014. 396-396 p.
11. Koirala B, Rauniar G, Shakya D. Adverse effects including sexual problems associated with the use of selective serotonin reuptake inhibitors in a tertiary care center of Eastern Nepal. *Int J Basic Clin Pharmacol* . 2015;4(4):651–6.
 12. Sharma SK, Dhakal S, Thapa L, Ghimire A, Tamrakar R, Chaudhary S, et al. Community-based screening for chronic kidney disease, hypertension and diabetes in Dharan. *JNMA J Nepal Med Assoc*;52(189):205–12.
 13. Gu D, Reynolds K, Wu X, Chen J, Duan X, Muntner P, et al. Prevalence, awareness, treatment, and control of hypertension in china. *Hypertens*. 2002;40(6):920–7.
 14. Pr R, Hv A, Shivamurthy M. Anti hypertensive prescribing patterns and cost analysis for primary hypertension: a retrospective study. *J Clin Diagn Res*. 2014;8(9):HC19-22.
 15. Lopez L, Cook EF, Horng MS, Hicks LS. Lifestyle Modification Counseling for Hypertensive Patients: Results From the National Health and Nutrition Examination Survey 1999-2004. *Am J Hypertens*. 2009;22(3):325–31.
 16. Long E, Ponder, Moong E, Bernard S. Knowledge, attitudes, and beliefs related to hypertension and hyperlipidemia self-management among African-American men living in the southeastern United States. *Patient Educ Couns*;100(5):1000–6.