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**EVALUATION OF PATIENT SATISFACTION
IN THE HYPERTENSION MANAGEMENT CLINIC**

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Abstract

Hypertension is a disease that afflicts 50 million Americans. Hypertension is a major risk factor that contributes to coronary, renal, and cerebral artery diseases. In an effort to better serve the patients afflicted with hypertension, a major health maintenance organization has developed a nurse managed hypertension clinic. This hypertension clinic functions in accordance with the Joint National Commission on Hypertension guidelines. This study evaluated the satisfaction of those patients that were served by the health maintenance organization's clinic. The results of the study reflected that, overall, most of the patients surveyed were satisfied by the services they received in the clinic. Clinic services offered are education about diet, exercise and blood pressure medications. In addition, patients reported feeling comfortable with individual future blood pressure self-management. Recommendations determined from this study are for the establishment of additional hypertension clinics directed by autonomous nurse practitioners to assist in the care of hypertensive patients in the managed care setting.

Introduction

As many as 50 million Americans have hypertension (HTN) which is a disease that poses serious health concerns. HTN is a precursor to cardiovascular, cerebrovascular, and renal diseases as stated by the World Hypertension League (World Hypertension League 1995). The Conference stated that the prevalence of HTN and related diseases places an extreme burden on the health care system. "Cardiovascular diseases and stroke remain the main cause of morbidity and mortality in developed countries" (Mashru & Lant, 1997, p. 942). In order to adequately manage HTN, most persons must take medication for life after HTN is diagnosed. African Americans have a higher incidence of HTN as compared to Whites. The Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure (JNC-V) also found that persons in a low socioeconomic status group had a higher prevalence of HTN than those in the higher socioeconomic status group (JNC-V, 1993). Education of the population at risk becomes the responsibility of the health care providers if desired blood pressure goals are to be achieved.

Hypertension is a major risk factor contributing to coronary artery disease, renal disease, and cerebral vascular accident. This risk poses a serious problem for health care providers (Mashru & Lent, 1977). In order to properly evaluate patients, health care providers must accurately assess the risk for HTN in their patients. Therefore, providing preventative care and pursuing management of HTN is one of the major recommendations of the Joint National Committee on the Detection, Evaluation, and Treatment of High Blood Pressure (JNC-V, 1993). Recognition and treatment of HTN are the primary steps to be taken for stroke prevention in older adults.

Classification of Hypertension

The JNC-V has defined a classification of hypertension which can be used for the detection, evaluation, and treatment of high blood pressure (see Table 1). For this study, screening and diagnosis of HTN in the adult population is based upon blood pressure measurements taken at home and the measurements in three scheduled clinic visits. The blood pressure measurements were used to group the cases of HTN into the JNC-V classifications.

Table 1

Classification of Hypertension (HTN) by JNC-V

Classification	Systolic Blood Pressure (SBP)	Diastolic Blood Pressure (DBP)
Normal	<130	<85
High Normal	130-139	85-89
Hypertension:		
Stage I (mild)	140-159	90-99
Stage II (moderate)	160-179	100-109
Stage III (severe)	180-209	110-119
Stage IV	210 or greater	120 or greater

The configuration and follow-up evaluation are primarily based upon blood pressure level and presence of any cardiac risk factors. Normal blood pressure should be rechecked in 2 years, high-normal should be rechecked in 1 year. Stage I follow-up and any confirmation of hypertension should be evaluated in less than 2 months. Stage II evaluation should be conducted in less than 1 month, Stage III evaluation should be in less than 1 week and Stage IV should be evaluated immediately.

Patients should be taught to monitor their blood pressure and record it at least twice a week in their journal and follow up with their healthcare provider. A non-pharmacological or pharmacological therapy or both could be initiated accordingly.

Control of Hypertension

Healthy people 2000 is a government publication which projects health goals for the general population for the year 2000 (Healthy People 2000, 1992). One of the goals of the publication is that, by the year 2000, 40% of the persons diagnosed with HTN will have their blood pressure under control. Another goal is to further increase the proportion to 90% of people aware of their high blood pressure. According to JNC-V (1993), the awareness of the risks of hypertension in the general public rose from 51% in 1971 to 89% in 1991. In 1991, 73% of hypertensive patients were being treated by medications, which was an increase over the 36% in 1971. The Healthy People 2000 document reports only 51% of Whites and 63% of African Americans have their HTN under control, and the goal is that 90% of these patients will have their blood pressure under control by the year 2000. Health care providers and health care agencies are urged to increase awareness and treatment of HTN to meet this goal.

"Individuals with high normal blood pressures should be monitored frequently and counseled with regard to lifestyle modification to control their blood pressure" (JNC-V, 1993, p. 157). Non-pharmacological therapy is often the first line of treatment for mild hypertension management. Implementing lifestyle changes is hard to achieve, thus "careful follow up is crucial" (Fleg, Gauras, & Pecker, 1992, p. 172). Although this may be a time consuming task, lifestyle modifications in relation to HTN should be the primary goal in health education (Mashru & Lant, 1997). Nurse practitioners should

make special attempts to lower blood pressure in patients who are most likely to develop hypertension" (JNC-V, 1993, p. 154). The lifestyle changes may begin with education of patients to: (a) reduce sodium intake, (b) reduce excessive caloric consumption, (c) increase physical activity, (d) lower alcohol consumption, (e) decrease potassium, and (f) cease smoking (Bergman-Evans, 1996). Lifestyle modifications offer additional benefits to patients with hyperlipidemia and diabetes because of lowered chances of developing premature cerebral vascular disease (JNC-V, 1993). The JNC-V (1993) has suggested that the goal of treating patients with hypertension is "to prevent morbidity and mortality associated with high blood pressure and to control blood pressure by the least intrusive means possible" (p. 162).

Economics and the Role of the Nurse Practitioner

Health care providers employed by health maintenance organizations (HMOs) are faced with tremendous time constraints because of economics and fierce competition among different HMOs to keep costs down. Every practitioner is expected to provide the best care in a short office visit. A problem as complex as hypertension demands more attention by the health care providers because HTN is a precursor to coronary artery disease and cerebral vascular disease. Hypertension, if undiagnosed, could pose a serious threat to patients' health (Mashru & Lent, 1997). Proper diagnosis and treatment can control HTN.

As primary care providers, nurse practitioners provide the most cost effective preventative care, and they offer effective follow-up plans for the uninsured and the underinsured patients (Leslie, 1995). Healthy People 2000 reports that nurse practitioners can and will make significant contributions toward achieving the national objectives.

Nurse practitioners approach each client holistically while they perform both psychosocial and physical assessments. They take detailed family histories and document personal risk factors within a holistic framework (Leslie, 1995). Nurse practitioners are well trained in the diagnosis and treatment of diseases. They can furnish drugs and provide health care maintenance (Lemley et al., 1994).

Nurse practitioners play a key role in reducing the risk of coronary heart disease by being increasingly involved in patient education regarding smoking cessation, cholesterol management, and increased physical activity as part of health care maintenance. The nurse practitioners usually work in settings that are suitable for effective education and preventative care (Calnan, 1995). "A nurse practitioner assessment takes in not only the health of the client but also the system that saves the client" (Leslie, 1995, p. 256). Nurse practitioners can provide care for hypertension both by pharmacological and non-pharmacological means. They can take their clients toward the Healthy People 2000 goal of reducing hypertension and help their clients to maintain their best physical and psychological health.

Nurse-Managed HTN Clinic

One health maintenance organization in northern California established a nurse-managed HTN clinic in 1995 where about 1,000 patients have received care during the past 2 years directed by a registered nurse. Primary care practitioners refer their patients to the HTN clinic where they have direct access to the clinic and the nurse. This improves patient satisfaction and avoids long periods of time on hold for a telephone consultation. Based upon the guidelines and clinic protocols, patients are taught to monitor their blood pressures and record them twice a week in a journal. Any abnormal readings are reported

to the clinic nurse (L. Morris, personal communication, November 5, 1997). The HTN clinic nurse assesses the contributing factors such as elevated cholesterol, obesity, smoking, and exercise habits, and the patients are instructed according to their risk.

Benefits

One benefit of the nurse-managed clinic may be that patients receive more individualized attention in the HTN management clinic. The initial visit is 30 minutes and each consecutive visit is 15 minutes on an as-needed basis. In addition, nurse-facilitated classes on HTN management, which average 90 minutes, are provided for the patients. Independence is encouraged as each patient works to achieve personalized blood pressure goals. The "holistic perspective" under which the nurses are trained provides a sound basis for patient education.

The hypertension clinic is based upon the Northern California HMO Regional HTN work group recommendations to adult primary care practitioners for screening management and evaluation for adult HTN. The JNC-V recommends that most patients, including seniors, should maintain their blood pressure below 140/90 mm Hg. Coronary heart disease (CHD) mortality is reduced by keeping diastolic blood pressure (DBP) less than 85 mm Hg, therefore one of the main goals of the HTN clinic is to keep the DBP less than 85 in coronary patients. For cases of isolated HTN, the goal is to reduce systolic blood pressure to (SBP) less than 160 mm Hg when pretreatment pressure was 180-219 mm Hg, and when the pretreatment pressure was 160-179, the goal is to lower blood pressure at least 20 mm Hg.

The goal of those at increased cardiovascular risk is based upon their provider's assessment of the individual's disease. In addition patients are involved in the decision-

making process to create a treatment regimen that is effective. All clinic protocols for treatment are based on the JNC-V guidelines.

A limitation of this particular clinic may be patient overload. Two nurses (one full time and the other part time) are responsible to oversee the care of about 1,000 patients. The nurse informs the primary care provider when the patient's blood pressure medications are unable to control the blood pressure within the guidelines, and the medications are then adjusted. Rather than being limited to a registered nurse in an extended role, a nurse practitioner could be recommended for this clinic and future HTN clinics. This would be an economically sound choice for the future and would help patients achieve any medication or treatment changes in a single visit. "The role of the advanced practice nurse is based on expert clinical knowledge and skill as practiced in multiple settings" (Madden & Pinte, 1994, p. 50). The nurse practitioner has the advanced psychosocial skills to perform physical examinations, treat patients, and furnish HTN medications. It would be beneficial to the clinic and patients to have a nurse practitioner run the HTN clinic.

Justification of Study

The purpose of this study is to evaluate level of satisfaction of patients enrolled in the HMO HTN clinic. The clinic performance will be measured by a survey of the patient satisfaction.

Hypertension is a serious health care problem that contributes to coronary artery diseases and cerebral vascular disease. Cardiovascular diseases and HTN remain the main causes of morbidity and mortality in developed countries. Mashru and Lant (1997) further suggest that health care providers should focus on implementing lifestyle changes

to obtain desired goals. Health benefits can be gained from lowering blood pressure from pharmacological and non-pharmacological means. Lifestyle modifications (such as smoking cessation, hypercholesteremia reduction, regular physical exercise, diet management, and reduction of alcohol intake) collectively help to reduce and maintain blood pressure (JNC-V, 1993).

Coronary heart disease risk is decreased and cardiac health is improved when low density lipoprotein cholesterol is lowered in preference to high density lipoprotein cholesterol. Diet and medical management help the patients to control cholesterol; however, it is a long term process requiring continual guidance. Medical and lifestyle management is of utmost importance (Dornbrand, Hoole, & Pickard, 1992).

Regular physical activity helps weight loss and aids prevention of HTN and the reduction of coronary artery disease. "Effective lowering of blood pressure can be achieved with only moderately intense physical activity; thus, moderate exercise of 30-45 minutes of brisk walking at least 3-5 times per week is proven to be beneficial" (JNC-V, 1993, p. 163). A regular exercise program helps improve left ventricular volume and function. In patients with myocardial infarction, exercise helps reduce the ventricular wall thickness regardless of the infarct size as shown by Magnetic Resonance Imaging (MRI) scans. This demonstrates the beneficial effects of exercise on the myocardium (Dubach et al., 1997).

Most hypertensive patients are overweight and consume large quantities of sodium and fat in their diets. Thus, diet management is imperative for HTN patients. Reducing salt intake by 100 milli-mole per day is helpful in reducing both systolic and diastolic blood pressures by 2.2 mm Hg and 0.1 mm Hg respectively (Thelle, 1996). Thus,

salt reduction becomes one of the main goals in dietary management of HTN patients. The reduction of blood pressure lowers coronary heart disease morbidity. The obese individuals should be maintained on calorie restriction as low as 1,500 calories a day, an exercise program, and cognitive behavioral therapy, all of which usually help to achieve and maintain weight loss (Keller, Overland, & Hudson, 1997).

According to White (1996), alcohol consumption in moderate levels increases concentration of high-density lipoprotein cholesterol which in turn helps to reduce coronary heart disease. Another study suggests that heavy drinkers have increased coronary death rates, even with a high concentration of high-density lipoprotein cholesterol. "Heavy drinkers (>5 drinks a day) had a 1.5-5 times higher coronary mortality than non-drinkers or light or moderate drinkers" (Paunio, Gref, & Heinonen, 1996, p. 1200). This suggests that nurse practitioners must take an adequate history regarding alcohol consumption and the patient should be treated accordingly.

The HTN clinic collectively works on achieving personal blood pressure goals by focusing on risk factors, implementing lifestyle changes, and providing medications to control HTN. This study will report the patients' satisfaction with the services received through the HTN clinic. Furthermore, recommendations for the development of an HTN clinic at HMO's may be made based on the results of this study.

Methodology

This is a descriptive, non-experimental, quantitative study. The purpose of this study was to evaluate the level satisfaction of patients visiting an HMO's HTN clinic. A total of thirty-three volunteer subjects (n=33) participated in the study. Subjects with psychosocial issues, such as recent death in the family, were not included in the study.

American Telephone and Telegraph translation services allowed Non-English speaking subjects to be included in the study.

The variables were measured by two instruments developed by the researcher to measure patient satisfaction and demographic data. The researcher designed the patient satisfaction questionnaire according to the JNC-V recommendations for HTN control. Questions included items about patient satisfaction with their blood pressure control, understanding of blood pressure medications, implementation of lifestyle changes (i.e. low salt and low fat diets), implementation of exercise programs and ability to manage their HTN in the future. Demographic data included patient's age, gender, ethnic group, primary language and marital status.

The newly constructed tool was evaluated for content validity by four NP experts. These NP's are employed by a large HMO; in addition, they have had more than 30 years experience collectively managing HTN in an HMO environment. The NP experts agreed that the instrument to measure patients' satisfaction was valid. They made no revisions to the tool.

The surveys were distributed to patients during scheduled individual clinic visits. Patients were instructed to seal their completed surveys in provided envelopes to maintain anonymity. The researcher, along with clinic nurses, was responsible for survey distribution. Each subject was provided with consent forms prior to filling out the surveys to assure them of confidentiality. The data were entered on Quattro-pro spreadsheet, and measured by using frequencies and percentages.

Results

Table 1 reflects that 94% (n=31) of patients were satisfied or very satisfied with

the information about blood pressure control they received to control they received in the clinic. Only six percent (n=2) were not satisfied or somewhat satisfied. The study revealed that 87% (n=29) of patients were satisfied or very satisfied with information about blood pressure medication. Nine percent (n=3) of subjects reported not being on blood pressure medications. These patients achieved blood pressure control through implementation of life style changes. Three percent (n=1) of patients were somewhat satisfied with the blood pressure teaching received in the clinic. Most respondents 88% (n=29) reported adequate or very adequate knowledge about low sodium and low fat diet consumption. Only 12% (n=4) reported that their knowledge was somewhat adequate or not adequate. Similarly 87% (n=29) of respondents were satisfied or very satisfied ,and 12% (n=4) were somewhat satisfied for planning and implementation of personalized exercise program. 81% (n=27) of respondents were satisfied or somewhat satisfied that they could comfortably take care of their HTN in future. Conversely 18% (n=6) were somewhat satisfied or not satisfied.

The demographic data shows most respondents were over fifty (see Table 2.) Twenty-seven percent (n=9) were 50-59, 33 % (n=11) were 60-69 and 21% (n=7) were 70 years or older. Females (n=61) seeking medical care at the HTN clinic out numbered males (n=39). The most common ethnicity was Caucasian (82%,n=21), and 58% (n=19) of patients responding were married.

Limitations of the Study

The limitations of this study may be: (a) a newly constructed tool without psychometric properties, (b) small sample size which may not be representative; therefore, the results of the studies are not generalizable.

Recommendation and Implications to Nursing

The findings imply that the hypertension clinic is perceived as very valuable in offering personalized hypertension management to the patients. Over 85% percent of respondents believed that they were satisfied in all categories of the survey. Nurse practitioners are ideal to manage hypertension clinics since they provide the most cost-effective quality care in a single visit. Nurse practitioners further provide for both pharmacological and non-pharmacological needs within a holistic framework to obtain personalized hypertension goals for clients. Therefore, a recommendation to further improve the satisfaction with the HTN clinic may be to employ NPs rather than nurses in extended roles. Nurse Practitioners are desirable providers to manage HTN. Nurse Practitioner's ability to assess and implement a plan for action while doing extensive teaching and follow-up is invaluable both to patients and HMOs.

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Table 1

Patient satisfaction survey

Total number of respondents (n=33)

1. Are you satisfied with the information you received about your blood pressure control?

Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
(n=1) 3%	(n=1) 3%	(n=11) 33%	(n=20) 61%

2. Are you satisfied with the information you received about your blood pressure medication?

Not Applicable	Somewhat Satisfied	Satisfied	Very Satisfied
(n=3) 9%	(n=1) 3%	(n=17) 51%	(n=12) 36%

3. Is your knowledge adequate about low sodium and low fat consumption in your diet?

Not adequate	Somewhat adequate	adequate	Very adequate
(n=1) 3%	(n=3) 9%	(n=14) 43%	(n=15) 45 %

4. Are you satisfied with the information received for planning and implementing your personalized exercise program?

Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
	(n=4) 12%	(n=18) 54%	(n=11) 33%

5. How comfortable are you to take care of your hypertension in future?

Not Satisfied	Somewhat Satisfied	Satisfied	Very Satisfied
(n=1) 3%	(n=5) 15%	(n=14) 42%	(n=13) 39%

Table 2

Demographic Data (N=33)	n(%)
Age Groups.	
20-29	none
30-49	1(3%)
40-49	5(15%)
50-59	9(27%)
60-69	11(33%)
>70	7(21%)
2. Gender:	
Male	13(39%)
Female	20(61%)
3. Ethnic Group:	
Caucasian	21(82%)
Hispanic	4(12%)
Asian	2(6%)
4. Primary Language:	
English	30(90%)
Spanish	2(6%)
Japanese	1(3%)
5. Marital Status:	
Married	19(58%)
Single/Widowed/ Separated/Divorced	14(42%)