



GUIDING HYPERTENSIVE ADULT PATIENTS

A Literature Review of Evidence-Based Nursing

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Abstract of Thesis

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This thesis dealt with the guidance of hypertensive adult patients at home and as well as in the hospital. The main aim of this study is to improve the knowledge of nursing students as they prepare to become registered nurses so that they will have useful information and more so to be acquainted with the challenges in guiding hypertensive adult patients. This study tried to answer the question: What are the forms of adequate guidance for hypertensive adult patients? This thesis was based on qualitative research method and the authors chose systematic literature review for the collection of data. Collected data were further analyzed by the content analysis method.

Hypertension is also known as high blood pressure. An individual is said to have high blood pressure when the systolic blood pressure value rises above 140mmHg and the diastolic blood pressure value rises above 90mmHg. It is believed that one in every four adults has high blood pressure and many are not even aware that they have the disease. However, in clinical practice the right classification of individual patient will help in making decisions, guidance and initiating therapy.

In conclusion, the forms of adequate guidance obtained from this study are hence, the involvement of a nurse led clinic, health education, telenursing, encouragement of self-monitoring, promotion of adherence to medication and ensuring follow-ups. It was advised that for a form of guidance to be effective and produce the desired goal of treatment, it must be used in combination with another form of guidance.

Keywords: hypertension, guidance, adult patients, nurse led clinic, telenursing, health education, self-monitoring.

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1 INTRODUCTION

It is predicted that by the year 2025 more than 1.5 billion individuals will have hypertension all over the world. This is about 50% of heart disease risk and 75% of stroke risk, and it has been known for several years that with lifestyle changes, medications, or both the risk for the disease can substantially be reduced. For each 10-mmHg decrease in systolic BP, the average risk of death through heart disease and stroke decreases by 30% and 40%, respectively. Out of all the known cases of hypertension, only half of the patients diagnosed have adequate BP control. There are many causes for poor BP control which include lifestyle choices, medication compliance and failure to intensify therapy by doctors but this can be improved through team-based care among health care professionals. (Kearney, P.M. Whelton, M. Reynolds, K. Muntner, P. Whelton, P. He, J. 2005. (365(9455),217–223).

Raised blood pressure is a major risk factor for coronary heart disease and ischemic as well as hemorrhagic stroke. So as a student, it is really important to learn better guidance for hypertensive patients and how to give better guidance to these patients. According to (Paul, A. James, M.D. et al. 2014), hypertension happen to be one of the preventable causes of diseases and death all over the world. During this research, researchers want to find out better nursing care and nursing guidance for hypertensive patients. It is good to be adequately informed of the professional nursing care involved in the guidance of hypertensive patients in order to ensure their safety both in the hospital environment and after the hospital visit.

This research is focused on creating awareness among nursing students in order to have more knowledge on guiding and supporting hypertensive patients at risk of having hypertension or already having the disease. It is important because the challenges in the treatment of hypertension changes periodically with aging and some risk factors.

This research is based on Evidence-based nursing practice(EBP). Evidence-based nursing practice focuses on the use of the best clinical evidence in making decisions for patients care derived from researches conducted by nurses and other health care profes-

sionals (Polit&Beck 2010,4). The results and the theoretical information can be utilized by anyone working with a patient who has had hypertension. Researchers are motivated because of the alarming rate of hypertensive patients all over the world as only half of those diagnosed are being controlled.(Kearney, P.et al 2005,1). The researchers interest to write this research was driven from the need to provide an urgent information on guidance due to the challenges encountered by hypertensive adult patients.

2. HIGH BLOOD PRESSURE

High blood pressure is a major cause of cardiovascular and cerebrovascular disease and a leading cause of death worldwide. It is best controlled mainly in the USA and in European countries. The control rate in the USA is 63% while it lies between 31% and 46% in Europe. This calls for more room for further improvement in blood pressure control.(Ulm, K. et al 2010, 2).

It is believed that one in every four adults have high blood pressure, 32% are not aware they have the disease, 15% are not being treated nor on any therapy while 26% are on inadequate therapy. Only 27% are on adequate therapy. (Ashley, E.A. & Niebauer, J.2014,22-26).

In the control of hypertension, early diagnosis and classification are very important tool in instituting guidelines for hypertensive adult patients. In fact high blood pressure levels are linked with increasing cardiovascular disease, cardiovascular events and death. Studies have also shown that low blood pressure values results in reduced risk of stroke, coronary heart disease, chronic kidney disease, heart failure and death. Anti-hypertensive drug treatment are recommended for all patient with blood pressure sensitive conditions such as stroke, diabetes and chronic kidney disease, even if the first line blood pressure value is within the normal rate. Most hypertensive patients have a combination of genetic lifestyle factors, that contribute to their diagnoses. (Lloyd-Jones, D.M, Leip E.P,et al. 2006,791-798) .

However, a level of high blood pressure must be agreed upon in clinical practice in order to assess patients with hypertension and foster therapy. This is why the right classification of individual patient will help in making decisions, guidance and initiating therapy. (Madhur, M.S. Lob, H.E. McCann, L.A. et al. 2010, 500-507).

The classification for hypertensive adults according to (Madhur, M.S.Lob, H.E. McCann, L.A. et al. 2010) is as follows: Normal- systolic lower than 120mm Hg and diastolic lower than 80mm Hg, prehypertension- systolic 120-139mm Hg and diastolic 80-89mm Hg, stage 1- systolic 140-159 and diastolic 90-99mm Hg and stage 2- systolic 160mm Hg and above, diastolic 100mm Hg and above.

2.1 Purpose

The purpose is to describe the forms of guidance for hypertensive patients so that there will be improvement and better care in our hospitals not only in Finland but around the globe, so that patients will be given confidence after the hospital visit. It is important that nursing students understand the risk factors associated with hypertension, these include: age, gender, family history, ethnicity, salt intake, smoking, lack of exercise, nutrition, stress. Also this thesis is to provide information to nursing students about how to guide a high blood pressure patient and the health care treatment methods that have been used to apply to high blood pressure.

2.2 Aim

The aim of this study is to improve the knowledge of nursing students as they prepare to become registered nurses so that they will be adequately informed and prepared for the challenges in the guidance of hypertension among these hypertensive patients.

3 HYPERTENSION IN ADULTS

3.1 The Diagnosis of Hypertension

The pathogenesis of hypertension is complex because a number of factors influence the blood pressure for adequate tissue perfusion. The likely factors that can indicate hypertension include: genetic predisposition, excess dietary salt intake, and adrenergic tone. The history of essential hypertension originates from occasional to established hypertension and this is because when persistent hypertension occurs, it later develops into complicated hypertension which gives rise to end-organ damage of the aorta, small arteries, heart, kidneys, retina and central nervous system. (Madhur, M.S. Lob, H.E. McCann, L.A. et al. 2010, 500-507).

In the evaluation of hypertension, it is necessary to measure the patient's blood pressure, take medical history, conduct laboratory investigations, physical examinations and obtain A-12 lead electrocardiogram. All these will help to detect if there is possible presence of end-organ disease, possible causes of hypertension, cardiovascular risk factors, and baseline values for judging biochemical effects of therapy. Further investigations may also be conducted depending on clinical findings and most often in patients with secondary hypertension and sometimes when there is target organ disease.

(Chobanian, A.V. Bakris, G.L. Black, H.R. et al 2003, 1206-1252).

3.2 Target Group

This research is focused on adults between ages 18years and 65years. Most patients between this age group are most vulnerable as they have little or no knowledge of the disease and a majority of them are not being adequately guided nor managed. Patients within this group happen to be the most active of the entire population all over the world and as such should be given utmost attention. Furthermore, emphasis and focus should be centered on Afro-Caribbean blacks as prevalence rate among this group is high. (James, P.A. et al. 2014,507-520).

3.3 Risk Factors

Generally, the real causes of hypertension are usually unknown, but there are different factors that suggests the condition. According to the American Hypertension Association, the risk factors of Hypertension were divided into two groups, namely the modifiable and unmodifiable. The unmodifiable were those risk factors out of one's control which included age, gender, hereditary and race while the modifiable were fundamentally lifestyle related and these are excess dietary salt intake, physical inability, alcohol intake, smoking, stress, obesity, and high cholesterol intake with low intake of potassium. (cited in Krothe et al. 2006).

Out of the modifiable risk factors, excess dietary salt intake happen to be the most important as there is significant relationship between salt intake and elevated blood pressure. (Krothe et al. 2006). Enough evidences were seen in the studies of (Fen & MacGregor, 2003) where the optimal level of salt intake for good health was as low as 3g.

Low dietary potassium intake can indicate high systolic and diastolic blood pressure values. Therefore eating fruits and vegetables should be encouraged in patients with hypertension as these are good sources of potassium. Diet is one of the major factors differentiating a particular community, and therefore different distribution of blood pressure may occur among different communities. Studies have shown that vegetarian diets often exist in those with generally low blood cultures. Similarly, in industrialized countries, vegetarians have lower average blood pressure levels than similar non-vegetarian crowd. There is also a strong relationship between obesity and hypertension (Andersen, Simper & Ibsen, 2010). Nowadays, obesity is becoming a worldwide problem. Hypertension easily triggers obesity problem but there is still no information to explain why the pathophysiological mechanisms of obesity and hypertension are so intertwined closely. Diet therapy and development of effective techniques in behavioral modifications are necessary rather than using potential pharmacological therapy. (Edward, D. 2011). The main aim of therapy in obese hypertension patients must be weight

loss. Weight loss will change many of the pathophysiologic mechanisms that sustain hypertension. (Richard, N. Ochsner, J.2009,133-136).

According to (Primates, Falaschetti & Gupta, 2001), it was reported that blood pressure values increased in populations with smokers although the long term effect on blood pressure was low (cited in Andersen et al. 2010). It was also noted that the general risk of hypertension was higher in population with high number of smokers and hence, all effort by nurses should be channeled towards encouraging a cessation of smoking. Studies have revealed a prevalence of hypertension among people with Type 1 and type 2 diabetes. According to (Lishimura, LaPorte & Dorman, 2004), it was reported that people with Type 1 diabetes suffered from hypertension as a result of kidney damage while those with Type 2 was as a result of insulin resistance (cited in Krothe et al. 2006). Exposure to long term situations of stress was reported to increase blood pressure continuously and hence an assessment for stress and its subsequent management were essential in the control of blood pressure. (Krothe et al. 2006).

Alcohol has been used as an entertainment agent, since the dawn of time, there are many ancient writings that refer to its use. Many problems associated with alcoholism , have also been extensively reviewed. Effects of alcohol on blood pressure is particularly interesting . In subjects who consume large amounts of alcohol , high blood pressure have been reported as early as the late 19th century and early 20th century. A lot of cross-sectional population-based study have investigated the association between alcohol consumption and hypertension . Prospective studies , such as those of the People's Gas Company in Chicago and the Chicago Western Electric Company have conclusively demonstrated a direct relationship between alcohol consumption and blood pressure . In these studies , blood pressure increased performance in subjects who consume alcohol (> 80 g day) during their hospitalization than those who abstained.

This relationship is unclear at very low levels of drinking. Physical exercise has a significant impact on the overall risk of blood pressure and cardiovascular disease. Many clinical trials show that increasing physical activity can lower blood pressure. Most exercise therapy have been tested in aerobics, rhythmic movement and defined as involving large muscle exercise (running , cycling , walking, or swimming) , and have lead to

increased heart rate. Dynamic exercises such as weight training were also studied . A meta-analysis by the WHELTON (2002) has conclusively found a significant reduction in physical activity , except for diastolic blood pressure in elderly subjects .(Sunil, N. Gregory, L. 2009).

3.4 The Care And Treatment of Hypertension

It is difficult to control the systolic blood pressure values than the diastolic blood pressure values in a majority of hypertensive adult patients. Most hypertensive patients will require a combination of two or more anti-hypertensive drugs in order to achieve the desired normal values. The ultimate goal of anti-hypertensive therapy is to reduce cardiovascular and renal morbidity and death rate because a majority of patient will reach the diastolic blood pressure desired value once the systolic blood pressure goal is accomplished. The goal of the therapy must also be focused on reducing the blood pressure to a value below 140/90 and sometimes even more lower in patients with diabetes and patients with chronic kidney diseases. Encouraging lifestyle changes is an important part in the guidance of hypertensive patients as this can help a great deal if combined with treatment. The lifestyle changes may include getting rid of smoking, reduce of sodium intake, reducing alcohol consumption, healthy diet and having a regular exercise. Lifestyle changes help to reduce blood pressure, delay or prevent the incidence of hypertension, enhance hypertensive drug efficacy and reduce cardiovascular risk. Above all patients should be strongly encouraged to quit smoking. (Chobanian, A.V. & Bakris, G.L. et al. 2003,1206-1252).

The recommended treatment goal as regards age and the group of hypertensive patient according to the Eight Joint National Committee include: The pharmacological treatment of patients aged 60years and above is to bring the blood pressure value lower than 150/90. For patients between 18years and less than 60years, the aim is to bring the blood pressure value below 140/90. For patients with chronic kidney disease, the pharmacological treatment should be targeted at bringing the blood pressure value even lower than 140/90, while those patients with an incidence of diabetes and of black origin should be treated with the aim of bringing the blood pressure value lower than 140/90

and the initial anti-hypertensive treatment should include a thiazide-type diuretic, calcium channel blockers, angiotensin-converting enzyme inhibitor or angiotensin receptor blocker. In general, hypertension is treated medically with the use of ACE (Angiotensin converting enzyme inhibitor), beta-blockers, diuretics, Calcium channel blockers, alpha-blockers, peripheral vasodilators and ATR(Angiotensin receptor blockers). It should be noted however that Asthma patients can not use beta-blockers. (James, P.A. et al.2014,507-520).

It is recommended that all patients on anti-hypertensive therapy should return for follow-up and adjustment of medications between months or less until the goal of treatment is achieved. Patients with stage 2 or more complicated cases as with complicating co morbid conditions will have to return to the hospital more often than other hypertensive patients. The patients in this group include, patients with heart failure, diabetes, and chronic kidney disease. The need for Laboratory test increases the frequency of visits. (Chobanian, A.V. & Bakris, G.L. et al. 2003,1206-1252).

3.5 Guidance and Nursing

Guidance in nursing according to the medical dictionary is one of nursing intervention and teaching which involves group or individual instruction designed to provide information about disease process and assist the patient to understand information related to specific disease process.(Keane, M. Dictionary of medicine, nursing, 2003). In Finland, the responsibility of guidance as regards the social welfare and health care rests on the shoulders of the Ministry of Social Affairs and Health. They prepare legislation, guidelines and ensure implementation. They carry out reforms and developmental programs by liaising with political decision making bodies while government and public bodies within the ministry's administrative branch are responsible for research, guidance, supervision and statistics. This government and public bodies include the National Institute for Health and Welfare, The Finish Medicines Agency, The Radiation and Nuclear Safety Authority, and The Finish Institute of Occupational Health. (Health Care in Finland, Ministry of Social Affairs and Health Brochures 2013,11).

According to the Nursing and Midwifery Council(NMC), record keeping is an important part of nursing guidance and is essential for the provision of safe and effective care. Good record keeping has many important functions and these include a range of clinical administrative and educational uses. Help for the improvement of accountability, giving information that the decisions for patient care were made, giving support for the delivery of service, giving support for the effectiveness of clinical judgments and decisions, supporting patient's care and communication, providing documentary evidence of services delivered, and developing better communication and information sharing among members of the multi-professional health care team. (Record keeping: Guidance for Nurses and Midwives NMC 2009,3).

Nursing guidelines for hypertensive patients are given for the following reasons: to promote the primary prevention of hypertension and cardiovascular diseases by changes in the diet and lifestyle of the entire population, to increase the detection and treatment of undiagnosed hypertension by routine screening and increase awareness of hypertension among the public, to ensure that patients taking anti-hypertensive drugs are controlled to optimal blood pressure levels, to reduce the risk of cardiovascular diseases of treated hypertensive patients by non-pharmacological measures and by appropriate use of statin and aspirin treatment, to increase the identification and treatment of patients with mild hypertension who are at high risk of cardiovascular disease, for example elderly patients, patients with ischaemic heart disease, patient with diabetes, patient with target organ damage or multiple risk factors; to promote continued adherence to drug treatment by optimizing the choice and use of drug, minimizing side effects and increasing information and choice for patient. (Williams, B. et al 2004,926).

Home blood pressure measurements are necessary for the improvement of hypertension. The use of the arm-cuff devices based on the Cruyff-oscillometric method has been validated officially. The BP measured at the upper arm, finger-cuff devices and wrist-cuff devices should not be used for home BP measurements. The difference between the BP measured at home and that measured by the auscultatory device should be within 5mmHg for each individual. The home measurement should be validated before use and at regular intervals during use. Home BP should be monitored under the following conditions: morning measurements should be taken within 1hour after walking, after eating,

patients should rest for about 1 to 2 minutes before BP measurements, BP should also be taken before drug ingestion and before breakfast. The evening measurement should be taken just before going to bed and patient must sit for about 1 to 2 minutes before it is taken. All home BPs should be documented without selection together with the date, time and pulse rate. The use of a device with a printer or an integrated circuit memory is useful to avoid selection bias. The home BP measurements for morning and evening should be averaged separated for a certain period. Home BP based on these guidelines can be considered an appropriate tool for clinical decision making. Instructions about BP measurements are indispensable and should include such points as keeping the arm cuff at the level of the heart, extension of the lower arm and relaxation of the arm by means of a supporting pillow. In subjects with excessively thin or thick arms, small cuffs and large cuffs should be used respectively. The non dominant arm is usually used for home measurements, but in a situation where there is significant difference between BP measurements in both arms, the arms showing the higher BP value should be used for home BP. Home BP measurements should be taken at least once in the morning and in the evening and this can be done as long as possible. (Hypertension Guidelines for self monitoring of blood pressure at home 2003,771-776).

4. DESCRIPTION OF RESEARCH

Research Task

What are the forms of adequate guidance for hypertensive adult patients?

4.1 Methodology

The study was discovered using a qualitative approach. Qualitative research involves inductive reasoning which begins with a number of observations related to a particular situation and it encourages generalization of ideas. The aim of qualitative research is to have a holistic view and to see the whole picture about a particular situation. (Moule, P. & Goodman, M. 2009, 206). The authors chose a systematic literature review as the method of choice as it allows appraisal, retrieval and summary of all evidence based knowledge on a subject matter. A systematic literature review (SLR) was defined as systematic, comprehensive, explicit and reproducible method for identifying, evaluating and synthesizing the existing content of completed and recorded work produced by scholars, researchers and practitioners (Fink, 2005). According to Woolf (1992), a systematic literature review is “an efficient scientific technique to identify and summarize evidence on the effectiveness of interventions and to allow the generalization and consistency of research findings to be assessed and data inconsistencies to be explored”. While narrative reviews entails provision of qualitative summary on individual studies or research evidences.

Systematic review articles tries to where possible to consider all published studies on a specific theme after the application of previously defined inclusion and exclusion criteria. The intention was to extract relevant information systematically from the publications. Since this study was to give relevant information on the guidance of hypertension from a nursing perspective, hence a systematic literature review was considered. A systematic literature review was also chosen because it tries to minimize bias as it adapted a transparent, replicable and scientific approach. It has statistical strength as it summarizes an enormous quantity of research findings. SLR, also determines the consistencies

and generalization of scientific findings across populations. (Chapman 2009). In healthcare practice, SLR is considered the most reliable form of medical evidence that is used to influence policies and medical guidelines

Those research articles published on the guidance of hypertension constituted the primary data collected and analyzed in this study. The stages of data processing were literature search, data collection, data screening, data extraction, data analysis and synthesis.

4.2 Literature Search

A literature search is “a systematic and explicit approach for the identification, retrieval and bibliographic management of independent studies drawn from published sources for the purpose of discovering information on a topic, synthesizing conclusions and identifying areas for future studies and developing guidelines for clinical practice”(Cahn, Auston & Selden 1992).

Electronic databases such as EbSCO(CINAHL), EBRARY, HIGHWIRE, ELSEVIRER, PubMed and Cochrane were searched through trials with the subject terms Guidance, Hypertension and Adults. These keywords were typed into databases in a combination of pairs and triplets to retrieve relevant articles using Boolean operators “AND or OR”. Substitute words such as “Counseling and High blood pressure” were also used in place of guidance and hypertension respectively. The motive was to ensure that as many relevant articles that had similar purposes to our study were found. Abstract and citations that matched with our inclusion and exclusion criteria were identified, retrieved and recorded. The table below shows the number of databases as well as articles retrieved when the databases were searched using the keywords. Materials were also gathered through e-books, e-journals and online article which mainly were free and of full text.

After the thorough search, the English results were read through to determine those which were scientific and evidence-based to be considered enough for implementing for this study.

4.3 Data screening

Data screening was carried out by assessing the titles, abstract and citations of potential relevant articles against predetermined criteria for inclusion and exclusion. The full text of studies whose titles and abstracts were not convincing enough to support decision making as regards to their relevance and eligibility were obtained and assessed against the criteria for inclusion and exclusion. Reviewers coded each article as relevant, irrelevant or not clear enough for decision making. Relevant articles were those which met all the criteria for inclusion and exclusion in table 1 below. Arguments with regards to selected articles were resolved through discussions and further consultations.

Table 1.

Inclusion criteria	Exclusion criteria
Articles published in English	Articles not published in English
Published after 2003	Published before 2003
Articles with full text	Articles without full text
Free Articles	Articles not free
Evidence-based articles	Not evidence-based articles
Purpose of the study relevant	Purpose of the study irrelevant

Table 1. Criteria for Inclusion and Exclusion.

4.4 Data Collection

The collection of data involves the gathering of useful information for the purpose of supporting decision making based on facts. 20,037 titles were identified altogether through literature and manual search and were later screened for relevance and eligibility against defined inclusion and exclusion criteria. 19,858 were rejected outright after thorough search and the abstract of the remaining 179 were obtained and examined, out of which 159 were further discarded. 12 more were excluded as they were not available in full text. After rigorous screening, 8 articles were selected as they were identified to be relevant and were included in this review.

Number of databases	Number of references		
	Initial search	Thorough Search	Relevant
Cochrane	3	3	2
Ebrary	4336	10	0
Ebsco	4241	4	2
Highwire	9226	60	0
Elsevier ScienceDirect	628	90	0
PubMed	1204	6	1
Manual	396	6	3
Total	20,037	179	8

4.5 Data Extraction

Data extracted were those which contained information needed for the purpose of description and for analysis later in the systematic review. The names of authors, titles of articles, year of publication, study design, purpose of study and necessary findings were extracted from articles that passed the eligibility criteria. Details of the extracted data can be found in appendix 1. Data extraction is the process by which researchers collect relevant information about their study characteristics and findings from data sources. According to Sandelowski & Barroso (2003), data extraction is an attempt to reduce a complex, messy, context-laden and qualification-resistant reality to a matrix of categories and numbers.

The reason for extraction “is to describe the study in general, to extract the findings from each study in a consistent manner, to enable later synthesis, and to extract information to enable quality appraisal, so that the findings can be interpreted. Ideally this should be undertaken in such a way as to require minimal references to the original papers at the data synthesis stage,” (Social Institute for Excellence 2006).

4.6 Data Analysis

Qualitative content analysis was used for the data collected in this study. According to (Hsieh & Shannon 2005,1278), qualitative content analysis is a research method used for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns. (Patton, 2002,453) viewed it as any qualitative data reduction and effort that makes sense which takes a volume of qualitative material and attempts to identify core consistencies and meanings. According to the principle of conducting a qualitative content analysis, data were analyzed

based on the research objective of this study(deductive) and also from the identified findings after series of readings and interpretations of the raw data (inductive).

The analysis process was done using four stages, first researchers obtained relevant articles, arranged them in alphabetical order and ensured the readability by getting familiar with the content of the text. Secondly, researchers used coding to create the upper(main) and lower(sub) categories by pasting into Microsoft word possessor to ensure the connection between the ideas they expressed. Thirdly researchers cross checked if there were over lapping sub-categories and finally ensured that the sub-categories carried the core themes of the main categories.

5 RESULTS

The results of this research intend to answer the question: What are the forms of adequate guidance for hypertensive adult patients? The primary data enabled the authors to obtain four main categories, Nurse led clinics, Health Education, Tele-nursing and Self Monitoring.

5.1 Nurse Led Clinics

A nurse led clinic is one which is headed by a nurse who has received advanced health care training to give comprehensive health checks, care plan preparation, health promotion and health education to patients. Nurse led clinic is based on a number of primary, secondary and tertiary structures including general practices, outpatient clinics, emergency department, mental care, home care or residential care, critical care, school and community care. (Hatchett,2005).

Hatchett,(2005) also noted that nurse led clinics had waxed strong over the years and led to improved patient experience and offered role development to nurses. He stated that in most cases, nurses had their roles and patient visited them at specific time schedules and during this times, the nurse had a high level of autonomy, having the ability to take meaningful care decisions, admits and discharges from clinics and also refers to other healthcare providers. Many of these clinics demonstrated attributes of advanced health care practice including detailed physiological assessment, care planning, giving treatments, following up patient's condition and ensuring adherence to medicines(Hatchett 2005).

(Krothe et al 2006) indicated that the nurse led clinics provided quality services based on evidence that were responsive to Patients' needs. They also explained that these services were essential for assisting patients to achieve desired outcomes in the control of high blood pressure and reduced the number of physician consultations. Hatchett(2005) argued that though the nurse led clinic was not meant to be curative care, it gave room for consistent monitoring of patient's condition to prevent further deterioration while maintaining quality of life. Patients who attended the nurse led clinics were assessed on

a number of risk factors, closely monitored and supported through health education of modifiable risk factors.

5.2 Health Education

Health education and empowerment were important instruments used in the promotion of health of patients within the catalyzing change domain, which focused on enabling changes and empowering individuals and communities to improve health (Coyle, Duffy & Martin 2007). The holistic patient centered care is one in which the provision of education is paramount, enables decision making and constitutes the philosophical foundation of nursing (Coyle et al. 2007).

When guiding patients diagnosed with high blood pressure, nurses relied on their professional know how and skills to assist patients attain the self management necessary to help them reach their treatment goals (Marshall, wolfe & Mckevitt 2012). Before health education, nurses took note of patient's physiological and psychosocial states in order to ascertain the appropriate health educational needs of individual patients. This holistic view was essential in order to assist a patient to decide on behavioral change (Marshall et al 2012). In this regard, the nurses addressed some important topics which related to the management of hypertension. These topics include, instructions on self monitoring of blood pressure, preventing complications and adhering to pharmacological and non-pharmacological treatment regimens such as healthy diet, moderate drinking habits, smoking cessation, physical exercise and reduction of stress (Coyle et al 2007). Educating patients on life style changes have always been the first method given for the management of newly diagnosed hypertensive patients and this was offered with other treatments. Nurses worked closely with patients to discover those factors that could pose a potential threat to the management of hypertension, identified areas of change, and established an agreed management plan that helped to reach client's goal to prevent secondary complications (Coyle, et al. 2007).

The health education on diet was centered on lowering the intake of salt, increasing the intake of potassium and monitoring the intake of dietary products and saturated fats. Nurses also recommended high intake of fruits and vegetables and encouraged the Die-

tary Approach to Stop Hypertension (DASH). According to the Heart and Stroke Foundation of Ontario(HSFO) and the Registered Nurses' Association of Ontario(RNAO) in 2005, the DASH was a development to discourage the intake of sodium and also emphasized on the intake of diets rich in nutrients that assisted in lowering blood pressure such as potassium, calcium and magnesium. The studies furthermore, noted that over time blood pressure could drop 8 to 14 which gave a significant difference in health risks(HSFO & RNAO,2005).

Alcohol consumption was another key area which the nurses tackled with education. They achieved that by using low-drinking guidelines in both normotensive and hypertensive individuals to guide them in reducing blood pressure values. One of these guidelines stated categorically that healthy adults should limit alcohol intake to two bottles or less per day, and consumption should not exceed fourteen standard bottles for men per week and women nine standard bottles per week. They were also counseled on stress management techniques which fundamentally centered on behavioral and relaxation therapies(Coyle et al 2007).

Nurses also educated hypertensive patients on the different pharmaceutical drug names and group, given them information on the names of antihypertensive drugs, their active ingredients, desired and undesired effects. They were taught on issues related to dosage, routes frequencies, interactions and storage. (Rudd et al 2004).

Self-monitoring of blood pressure at home by hypertensive patients was one of the measures used to engage hypertensive patients actively in their own health care management (Fahey, Schroeder & Ebrahim 2005,885-892). By this, nurses empowered patients to self-monitor their conditions in their various homes, taught them the appropriate blood pressure techniques, created the frequency of measurements and also guided them on documentation. Nurses encouraged the relaying on specialist nursing via telephone and other tele-devices. Nurses viewed self monitoring as an ability to create awareness of what was an appropriate blood pressure value and what was not.(HSFO & RNAO, 2005).

According to Haynes, McDonald & Garg (2002), adherence is the degree to which a patient's behavior such as taking medication, following a diet, modifying habits and

attending clinics correlated with the advice given by a health care provider(cited in HSFO & RNAO 2005). Adherence happen to be the most modifiable factor that compromised the outcome of treatment in any condition(Marshall et al. 2012). Studies have shown that poor adherence is as a result of patient failing either in knowledge or following treatment regimens, hence educational assistance were designed to get rid of the problem but failed for many years(Marshall et al. 2012). Non-adherence however, is different from patient to patient as it relates to the perspective in which a patient views his or her disease and most even reported not taking their medications deliberately(Marshall, et al. 2012).

According to WHO(2002), adherence is known to have revolved around five major factors such as social and economy, health and health-system related, condition-related, client-related and therapy-related factors(cited in HSFO & RNAO, 2005). The most common economic and social factors that were related to adherence were poverty, accessibility to healthcare and medicines, literacy, establishment of a working social network and mechanisms for the deliveries of health services that involved cultural believes about illnesses and treatments. Some of the barriers to adherence according to the WHO report of 2003 include; lack of awareness and adequate knowledge about adherence, lack of clinical tools to facilitate intervention and evaluation of problems of adherence, severity of the symptoms, complexity of treatment regimen, duration of treatment, failure of previous treatments, changes in treatment, side effects, availability of medical support, and health education about treatment regimens to mention a few(cited in HSFO & RNAO, 2005).

Simplification of doses is an important tool inn adherence process. Simplifying doses regimens increased adherence from 8 to 19.6%(Fahey, Schroerder & Ebrahim 2005). Some of the points the nurses addressed were prescribing long acting once daily dosing and fixed dose combination pills together with the use of medication schedules that coincides with daily routines(HSFO & RNAO, 2005).

5.3 Tele-nursing

Schlachta & Sparks(1998) defined Tele-nursing as the use of “technology to deliver nursing care and conduct nursing practice(cited in Bosworth, Powers & Olsen 2011). Tele-nursing involved assessment, guiding, planning, intervening, and evaluation of nursing care via internet, telephones, digital assessment tools, and Tele-monitoring equipments(cited in Bosworth et al 2011).

The articles analyzed showed that patients were given wireless home BP monitors devices and peripheral telemedicine devices that transmitted BP values via a telephone line secured to a server. Clients were guided on taking daily blood pressure measurements while nurses conducted tele-consultations when 2weeks average home BP measurement exceeded 135/80 mm Hg or during other emergencies(Bosworth, et al. 2011,73-80).

Tele-nursing as a form of guidance helps nurses to monitor blood pressure values easily from the internet without having to go for home visits thereby reduced cost and conserved energy. A randomized study undertaken by Dunagan, Littenberg, Ewald & Jones, Emery & Waterman (2005) indicated that nurse-administered telephone based management reduced the number of hospital visits and lowered readmission rates of patients(cited in Krothe et al. 2006).

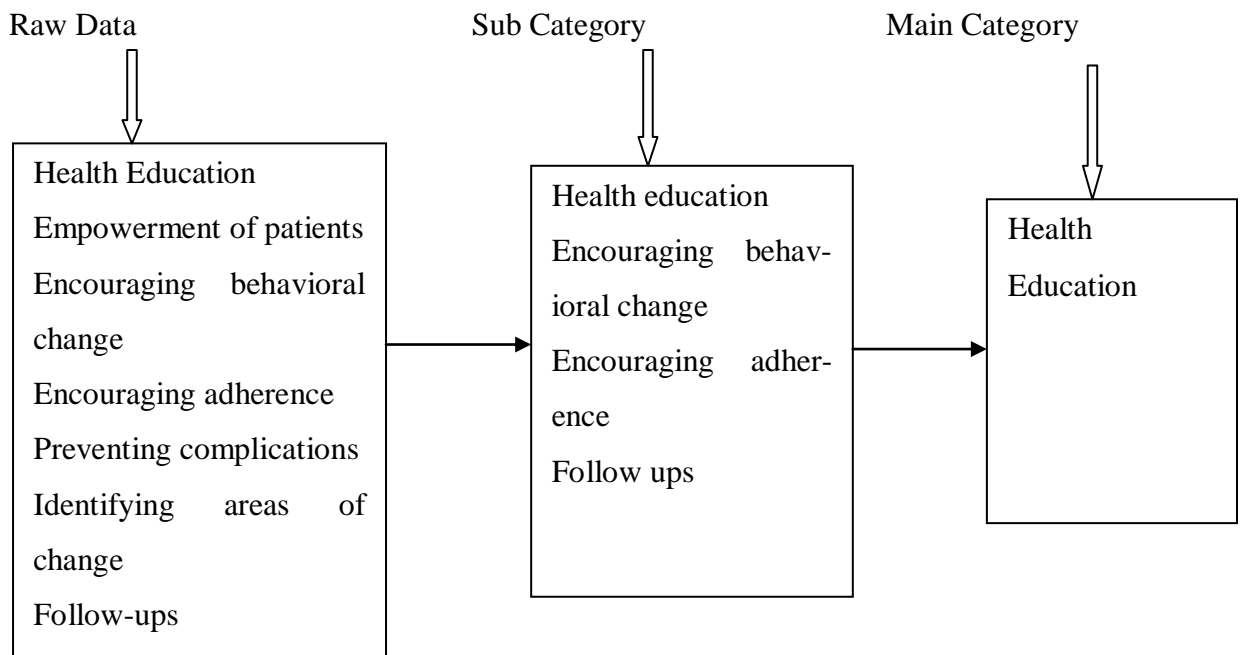
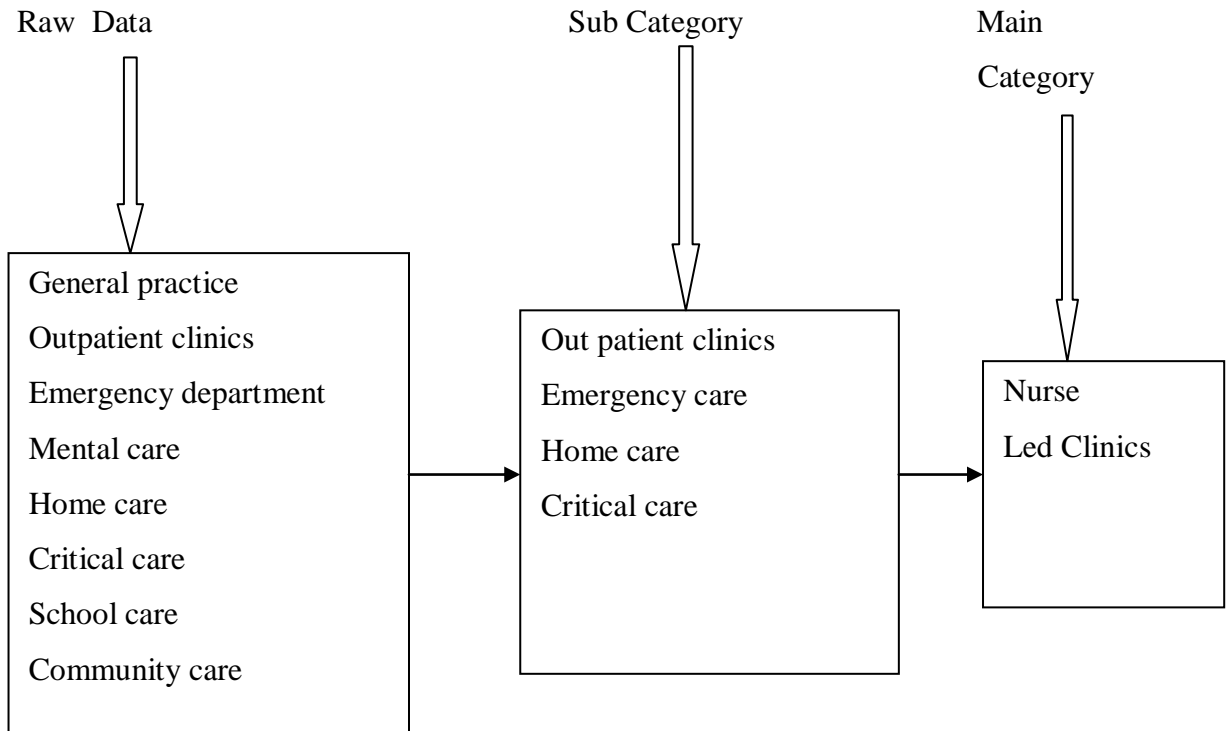
5.4 Self Monitoring

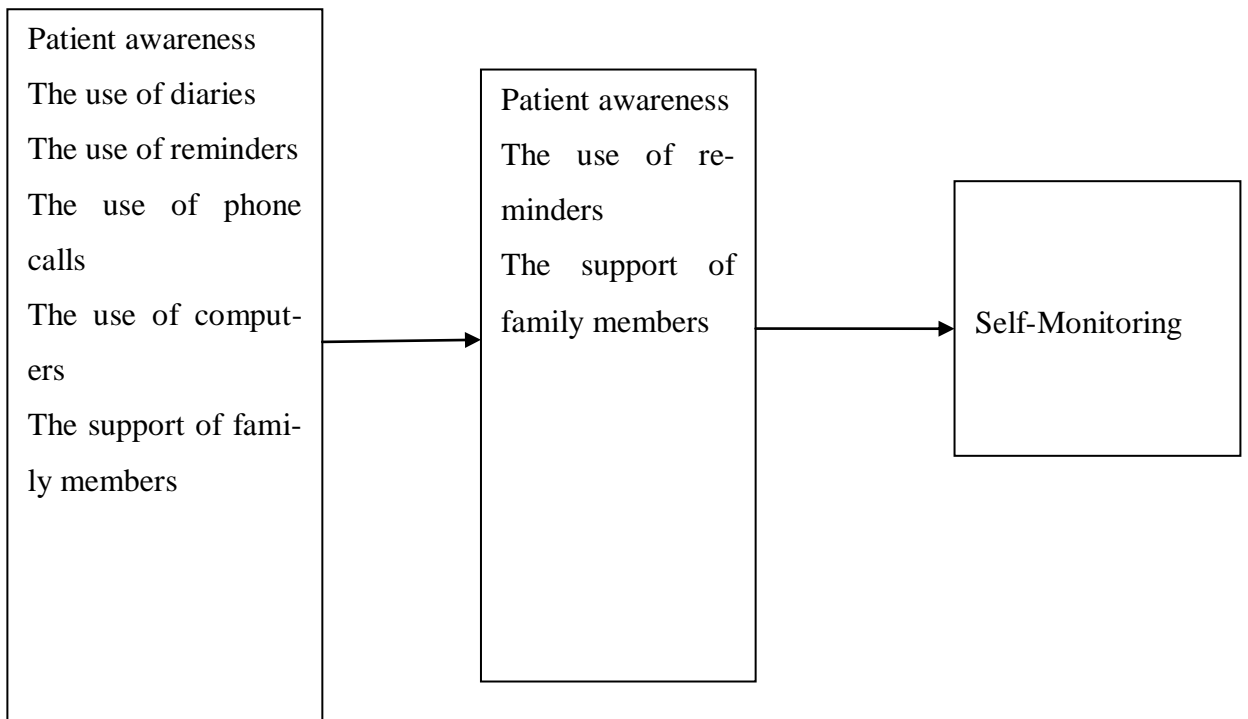
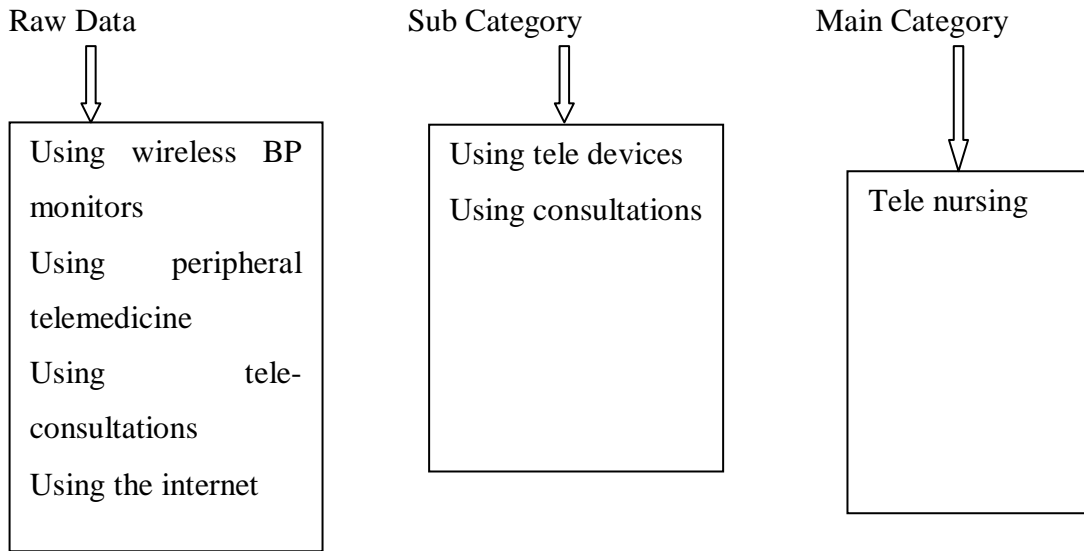
Five out of the eight selected articles in this research recommended self monitoring for hypertensive adult patients as it enhances the attainment of treatment goals. It enables them to be fully in charge of the management of their health. Self monitoring creates awareness about the medication and enlightens hypertensive patients about antihypertensive medications, side effects, desired and undesired outcomes. (Fahey, Schroeder & Ebrahim 2005,885-892).

When hypertensive patients monitor their health, it will be much easier to encourage them for follow-ups as this happens to be an important tool in the guidance process. Follow-ups allow the nurse to be informed about any complications, positive impacts,

change of medication if necessary and the achievement of treatment goals within a reasonable time. (James, P.A. et al. 2014).

Old age, busy schedules and being away from home were some of the reasons that contributed to forgetfulness(cited in HSFO & RNAO 2005). Nurses encouraged patients on the use of dairies, reminders, phone calls, computers and support of family members (Marshall, et al. 2012).





Graph 1. Forms of guidance.

6 ETHICAL CONSIDERATION

Ethics is a complex issue in research as it entails particular values and beliefs that determines how a research should be approached (Graham & Fitzgerald 2010, 134). When undergoing a qualitative research, ethical procedures should be followed due to the sensitivities of some of the topics involved. Ethics can be viewed as moral principles with ethical questions “woven through every aspect of research, shaping the methods and the findings”. (Alderson & Morrow 2011, 5).

Since the methodology for this study was a systematic review, researchers focused on those rules that were applicable to ascertain authenticity. Researchers searched data bases thoroughly to obtain articles which were screened without bias against predefined eligibility criteria. In order to ensure trustworthiness and reliability, researchers double checked articles to ensure that they were accurate and peer reviewed. It is true that no research work can be considered ethically perfect, hence researchers ensured that those views which were considered credible were included and avoided plagiarism and used the right text referencing technique to report findings. Moreover, researchers avoided academic fraud by reporting findings from analyzed articles in their original forms and quantities.

Although the literature search was limited to English, most of the materials were writing in different countries of the world and as such the results of this research can be fairly generalized.

The ethical principles that guide nursing researchers are the same that guide nursing practice. These principles are set out in the codes of conduct nationally or internationally. (Moule & Goodman 2009, 56).

6.1 Reliability and Validity

Reliability refers to the consistency of a tool to measure what it is intended to. A nurse researcher however is interested in three measures of reliability which include the stability of a measure, its internal consistency and equivalence.

Validity refers to a measure of whether a data collection tool accurately measures what it is intended to. (Moule & Goodman 2009, 184-186).

Trustworthiness aims to support the notion that the research findings are worth considering. Credibility refers to reports or publications being authentic so that the readers can believe that the data presented are a true reflection of the participants' view, experience or belief. (Moule & Goodman 2009, 188). The writers of this study ensured credibility by following the appropriate method of conducting a systematic research. To ensure transferability, researchers research methodology in detail so that it could be repeated.

The authors of this research endeavored to avoid plagiarism by using paraphrasing and referencing as recommended. Quotation marks were used sufficiently in some instances as the authors wanted to retain the original meanings of some information and references were equally provided. Some primary sources were also cited in the text and the full references were provided.

This thesis had to be dependable as authors started by describing the background of the topic. The details of data collection process were also given in a way that can be easily confirmed. This guarantees dependability.

All information used in writing this thesis to the best knowledge of the authors were valid and no suggestions of errors or doubts from the references. Moreover, only scientific and evidence based articles were used to proliferate authenticity.

This thesis also excluded some certain themes that the authors supposed were not eligible to the inclusion criteria. These themes were excluded as a result of the fact that the research process was rigidly streamlined to a particular pattern that could not be

changed because doing so would have translated to data manipulation which would have affected the legitimacy of the thesis.

6.2 Strength and Limitations

This study was able to answer the research question through the help of the obtained articles. The analyzed articles were relevant because they were written in different parts of the world like Europe, America, Canada and England where hypertension is obviously a major health issue. The articles were not older than ten years and as such their contents are still much valid. The findings of this study therefore adds to the number of Evidence-based knowledge about promoting the guidance of hypertensive adult patients.

This study suffered some notable limitations which are worth mentioning. The inclusion criteria neglected articles written in other language other than English hence language bias was not handled. The inaccessibility of certain articles in full text that could have contributed comprehensively to this study was a major setback. Lastly the assessment of the quality of the articles were based on other authors opinion and authors were not contacted for clarification or for retrieval of missing data.

7 CONCLUSION

The forms of adequate guidance obtained from this study are hence, the involvement of a nurse led clinic, health education, telenursing, encouragement of self monitoring, promotion of adherence to medication and ensuring follow-ups. These forms of guidance are more effective if they are used in combination. Nurse led clinics produced lots of positive results as it involved the professional skills and experiences of the nurses who have worked for long and are adequately informed about hypertensive adults' situations and they know how to provide the necessary guidance needed in such situations. Although the major challenge they encountered was that of legislation, they are to be encouraged in health care deliveries most importantly in primary health care settings involving chronic disease such as hypertension.

Health education summarizes all the forms of guidance as it is given at the nurse led clinics, patient's homes, when giving information about self monitoring, during phone conversations and during follow-ups. It empowers the patients to self-manage their conditions and to make them adequately informed about the disease. In giving guidance to hypertensive adult patients, nurses should endeavor to address key issues such as diet, exercise, medications, adherence, follow-ups and self monitoring. It is also imperative that nurses use appropriate educational strategies to promote and encourage learning of appropriate behaviors in order to achieve treatment goals.

In the guidance of hypertension, nurses' efforts may become frustrating if hypertensive adult patients lack adherence attitude. In fact without adherence, all other forms of guidance will become futile and ineffective. For this reason, nurses are obliged to encourage, monitor and promote adherence at any given opportunity. Using specified medication dosage, reminder systems like alarms and medication check lists, rescheduling of missed appointments and encouraging hypertensive adult patients to be active about their health care can help to achieve adherence.

Lastly, the promotion of self monitoring and follow-ups can help in the achievement of treatment goals of hypertensive adult patients. Follow-up schedules should be done at every meeting so that the patient will be informed ahead and make it a point of duty to

monitor his or her readings as this will be the subject matter during the next appointment.

8 DISCUSSION

The guidance of hypertensive adult patients is very important as patients in this group happen to be the most vulnerable and active individuals in any society. In fact some of them are the bread winners of their family and as such a large hole may be created in the family if they are not adequately managed and guided. The nurses are the professional individuals entrusted with the obligation of guiding hypertensive adult patients and because the education about guidance starts from the lecture rooms, that is why nursing students hold it a duty to know and be adequately informed about their roles as regards guidance of hypertensive adult patients.

Nursing students should endeavor to imbibe all the ethics of nursing process while they study as these will influence their attitudes while giving guidance to these patients. Hypertensive adult patients are to be encouraged to check their blood pressure measurements from time to time as this disease is known as a silent killer and as such many individuals are not aware of their disease.

The authors of this study gathered from the findings that a nurse led clinic produced the major positive impact in the guidance of hypertensive adult patients and more so as it is the fulcrum on which other forms of guidance rest. This is so as the nurse uses her professional skills to give health education, telenursing and plays a key role in the dissemination of information on self monitoring and encouragement of follow ups. A major setback in the guidance of hypertensive adult patients was the issue of adherence. Most patients complained of old age, busy schedules and being far away from home as some of the reasons for failing to follow the guidance on hypertension. If patients would adhere to the information on guidance given by the nurse, hypertension rate among this group would be further reduced to the beeriest minimum and treatment goals will be achieved in good time.

The forms of guidance in this study were drawn from the opinions of different writers and as such may not be generalized but the key issue was that all the forms of guidance gave positive results as they were used in combination. Furthermore, if a form of guidance is not producing the desired outcome, the other forms should be utilized in combi-

nation as it was gathered in this study that desired outcomes were most achieved when the forms of guidance were used together.

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ELECTRONIC

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APPENDICES

Appendix 1

Extraction Table

Author and Year of Publication	Database	Purpose	Research Method	General findings	Significant findings
Bosworth, H.B., Olsen, M.K. & Power, B.J. (2011)	Ebsco	To identify the effectiveness of telephoning as a form of guidance of hypertensive patients	Randomized control trial	Telephone monitoring of BP was effective	BP telemonitoring with remote clinician management were effective
Fahey, T., Schroeder, K. & Ebrahim, S. (2005)	Cochrane	To determine the form of guidance used to improve the control of hypertension	Randomized control trial	Professional led clinics, health education, self-monitoring	Nurse led clinics and health education improved the control of hypertension
Krothe, J. & Cledon, J. (2006)	Pubmed	To find out the	Cross cultural	Nurse led clinics	Patients attending a

		perceptions of nurse led clinics	study	demonstrated positive results in the guidance of hypertensive patients	nurse led clinic met their BP targets compared to those which did not.
Coyle,M.K.,Duffy,J.R.& Martin,E.M.(2007)	Ebsco(Academy)	To teach health promotion for hypertension using telehealth	Qualitative study	Health education and patient empowerment are positive health promotion strategies in the control of hypertension.	Empowering patients to self-monitor their BPs together with educational support produced active coping
Marshall,I.,Wolfe,D.& Mckevitt,C.(2012)	Cochrane	To evaluate patients' understanding of hypertension and drug taking	Systematic review	Patient's non-adherence is as a result of various individual beliefs about hypertension	Health education and guidance giving by nurses should be designed to include patients.

Hatchett,R.(2005)	Manual	To describe the setting and use of nurse led clinics	Scientific journal	The activities of nurse led clinics include risk management,health education,& medication management	Nurse led clinics were instrumental in the promotion of health of hypertensive patients.
HSFO&RNAO(2005)	Manual	To determine the best guidelines to help in the control of hypertension	Systematic literature review	Nurse guidance of hypertension should address diagnosis,risk assessment,health education and lifestyle changes.	Health education by nurses on lifestyle changes were instrumental in the control of high blood pressure.
James,P.A.,Oparil,S.,Carter,B.L.,et al (2014)	Manual	To determine the best guidelines to help in the control of hypertension	Scientific journal	Nurse guidance of hypertension should address health education and lifestyle changes and follow ups.	Health education by nurses on lifestyle changes and encouragement of follow ups were in-

					strumental in the con- trol of high blood pressure.

