AMERICAN UNIVERSITY OF BEIRUT

A PROPOSITION AND FEASIBILITY OF HYPERTENSION DISEASE MANAGEMENT TRAINING PROGRAM FOR REGISTERED NURSES

by
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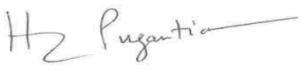

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ABSTRACT
OF THE PROJECT OF

Elissar Raed Husseiky for Master of Science in Nursing
Major: Community and Public Health

Title: A Proposition and Feasibility of Hypertension Disease Management Training Program for Registered Nurses

Introduction and Background: Hypertension is a serious public health threat and a highly prevalent disease referred to as the silent killer. The Lebanese Ministry of Public Health has a non-communicable disease prevention and control plan including hypertension, but the focus is more on screening and not on management of hypertension. Given those shortcomings in our system, it is extremely essential to develop a training program for nurses in primary health care centers to empower hypertensive patients to self-care for their disease.
Goals: To propose a hypertension management training program for nurses working in primary health care centers in Lebanon that includes an overview on hypertension, motivational interviewing skills and a protocol for managing hypertension. Also, to explore the feasibility and acceptability of the proposed training program in Abey Primary Health Care Centers and identify its facilitators and barriers.
Methods: A desk review was conducted on the role of nurses in managing hypertension in primary health care based on evidence from guidelines adopted in the United States, Canada, and Lebanon. Accordingly, the prototype for a hypertension disease management training program for nurses is developed. The program consists of two parts: Hypertension Disease Management Course and Patient's Visits. The course will introduce nurses to new topics (self-care practices, motivational interviewing and goal setting sessions) and tools (The Hypertension Self-Care Activity Level Effects tool- H-SCALE tool; Hypertension Knowledge-Level Scale tool- HK-LS tool; and Assessment of Chronic Illness Care tool- ACIC tool). Whereas the second part of the program (patient's visits) will explain in depth how and what nurses and the doctor should do during patients' first visit and how to follow up with patients using motivational interviewing and goal setting sessions.
Program Evaluation Plan: with respect to the nurses: nurses must pass this course through participating in the sessions through games and activities, taking the Objective Structured Clinical Examination, and completing the final exam. Nurses must achieve 70 points over 100 on the total grade to complete the course and be part of this program. **With respect to patients:** first, a Quasi-Experiment on one group study (patients) done to assess patients' awareness of hypertension through a Pretest and a Post-test in the first visit based on the HK-LS tool. Second, Quasi-Experiment on one group study (patients) done to assess the blood pressure and self-care practices of hypertensive patients at Abey PHCC at baseline and at 6 months of follow up through the H-SCALE tool. **With respect to the program:** the program is evaluated by using the ACIC tool at baseline and after 6 months of the program.

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ABBREVIATIONS

Atherosclerotic Cardiovascular Disease…….……...ASCVD

Assessment of Chronic Illness Care……..ACIC

Cardiovascular Disease……...CVD

Centers for Disease Control and Prevention……...……CDC

Division for Heart Disease and Stroke Prevention…….DHDSP

Hypertension Knowledge-Level Scale……....HK-LS

Hypertension Management Program……..HMP

Hypertension Self-Care Activity Level Effects……..H-SCALE

Ministry of Public Health…….....…MoPH

Primary Health Care Center……..PHCC

CHAPTER I

INTRODUCTION AND BACKGOUND

Hypertension is a serious public health issue and a significant research area because of its high prevalence, its dire complications (particularly with resultant cardiovascular outcomes and other end-organ damage). High blood pressure is a silent killer, eventually leading to peripheral artery diseases, angina, kidney disease or failure, heart failure, stroke, heart attack, sexual dysfunction, and vision loss (American Heart Association, 2016).

A. Background

According to the World Health Organization, less than 1 in 5 people with hypertension have a controlled blood pressure (World Health Organization, 2021). Benjamin EJ et al in 2019 on behalf of the American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee stated that 82,735 deaths in 2016 were primarily attributable to High Blood Pressure in the US (Benjamin et al., 2019).

In the Arab region, the prevalence of hypertension (29.5%) is consistently higher than other regions such as the United States of America (28%) and the sub-Saharan Africa (27.6%) (Tailakh et al., 2014).Moreover, Lebanon, a small middle-income country, is reported to have higher hypertension prevalence rates (36.9%) than its adjacent countries, like Egypt (26.3%) and Palestine (31.8%), and only 27% had a controlled blood pressure rate in Lebanon (Matar et al., 2015). Hypertension prevalence in Greater Beirut Area is

consistently high, and only 38.2% of people there had optimal blood pressure (Noubani, Nasreddine, Sibai, Tamim, and Isma'eel, 2018).

The causes of hypertension varies and are classified to primary and secondary hypertension. First, primary hypertension or essential hypertension is the most prevalent kind of hypertension and is defined as the unhealthy lifestyle decisions (high sodium and low potassium diet, sedentary lifestyle, alcohol, smoking, and stress) and genetics (Whelton, et al., 2018). Whereas, secondary hypertension is when there is a potential identifiable cause of hypertension as renal disease, pheochromocytoma, adrenal gland disease, hormonal abnormalities, thyroid abnormalities, sleep problems and obstructive sleep apnea, and side effects of some medications- as diet aids, birth control pills, antidepressants, and stimulants (Whelton, et al., 2018). In addition to this, many hypertension risk factors have been identified as the non-modifiable factors- gender, age, race, and genetic factors, as well as the modifiable factors- low potassium intake, high sodium intake, alcohol consumption, overweight, and decreased physical activity (Whelton, et al., 2018).

Moreover, the social determinates of health are the non-medical factors that have an impact on health outcomes on daily life, where people are born, age, live, work, and grow. (Hacker, et al., 2022). According to the Lebanese Ministry of Public Health, there are no social determinants of health by the Ministry of Public Health rather there are elements of a framework (MoPH, 2017). The national health statistics repot in Lebanon in collaboration with the World Health Organization, the Ministry of Health, the Institute of Health Management and Social Protection (IGPS), and the research council of Saint Joseph University (USJ) of Beirut stated the health indicators in Lebanon in 2012 (IGSPS, et., al, 2012):

- Economy: Unemployment/ high costs/ low income. Poverty was affected by place of residence.
- Education Access and Quality (low school enrolment and access for the poor children)
- Environment (air and water pollution, crime, violence, access to transportation, healthy food availability in the neighborhood)
- Poor primary care access, no health insurance coverage
- Lack of neighborhood safety, people are not being supported in the places where they learn, work, live, and play)

Controlling blood pressure reduces the risks of complications including peripheral artery diseases, angina, kidney disease or failure, heart failure, stroke, heart attack, sexual dysfunction, and vision loss (Whelton et al., 2017; Unger et al., 2020). Lifestyle practices and self-care practices are major determinants of controlled blood pressure including: maintenance of an optimal body weight and waist circumference, active lifestyle (regular physical activity), low-salt diet, diet rich in sufficient intake of potassium, calcium, magnesium, and protein from vegetables, fruits, and whole grains, less alcohol consumption, cessation of smoking, stress management, and adhering to antihypertensive medications (Williams et al., 2018; Whelton, et al., 2018; Rabi et al., 2020; Unger, et al., 2020 Leung et al., 2017; Noubani, et al., 2018). Moreover, marital status (divorced people), low education level, inconvenient source of self-care information, inappropriate place for exercise, no social support, and poor self-care agency are considered factors affecting patients' psychological and stress level, thinking level, and ability on performing proper self-care practices leading to poor blood pressure control (Ademe, Aga, and Gela, 2019).

Older age, males, obese patients, low educational levels, and low income levels were associated with high odds of developing hypertension in Greater Beirut Area, Lebanon (Noubani et al., 2018). Also, the major factors for hypertension were the low medication adherence, obesity, older age, male sex, and smoking in a sample across Lebanon (Farah et al., 2016), in the local community of Byblos, Lebanon (Kanj, Khalil, Kossaify M., and Kossaify A., 2018), and in all six provinces (mohafazats) of Lebanon (Matar et al., 2015). Hypertention awareness was lower in men and patients who have low income (Matar et al., 2015).

B. Nurse's Role in Managing Hypertension

Nurses have a major role in managing hypertension. their role starts by assessing the patient, conducting a focused physical exam, checking his lifestyle practices, asking about other causes of hypertension (if there are secondary causes of hypertension), and measuring patients' blood pressure.

Nurses are the care providers who are responsible for patient education in healthcare settings and in the community. Education will empower patients and help promote self-care practices (Dumit, 2014). Health education will help engage patients in their own care planning, in decision making regarding health issues, and in promoting adherence with devised care plans. These efforts will improve quality of life (Dumit, 2014). Nurses play a major role in empowering patients to self-manage their lifestyle practices through using motivational interviewing and goal setting tool and Hypertension Self-Care Activity Level Effects tool. Nurses can use motivational interviewing and goal setting, as originally developed by Miller (1983), to improve medication adherence, manage a healthy diet, engage in physical activity, improve smoking cessation, and

decrease alcohol consumption leading to a controlled blood pressure (Wan, Kattan, and Terry, 2018; Ma, Zhou, Y., Zhou, W., and Huang, 2014; Woollard, et al., 1995; Ogedegbe, et al., 2008).

Nurses can also use validated tools to measure and assess whether patients are appropriately managing their lifestyle practices. The Hypertension Self-Care Activity Level Effects, or H-SCALE, is a self-report assessment tool developed to measure the recommended self-care activities that would examine the relationship between blood pressure control and adherence and commitment to the self-care lifestyle behaviors (Kumar, O'Neal, & Davis, 2016; Warren-Findlow, Basalik, Dulin, Tapp, and Kuhn, 2013).

C. The Lebanese Situation Regarding Hypertension Management

The Lebanese Ministry of Public Health has a non-communicable disease prevention and control plan including hypertension written in the handbook of Integrating Non-communicable Disease Care Within the services of primary health care centers. (MoPH, 2016), but the focus is more on screening and not on management of hypertension. The non-pharmacologic treatment of hypertension in the handbook only includes on advising patients to reduce salt intake, manage weight, limit alcohol consumption, stop smoking, and limit caffeine intake (MoPH, 2016). The Lebanese Primary Health Care Centers use the handbook that includes the non-pharmacologic treatment and pharmacologic treatment of hypertension. Advising patients is not enough to manage hypertension. There is a need for a close monitoring and follow-up of lifestyle practices. The Assessment of Chronic Illness Care (ACIC) is meant to aid nurses identify areas for improvement in their care for non-communicable diseases and chronic illnesses

(like hypertension), and to evaluate the nature and level of improvements (Bonomi, Wagner, Glasgow, & VonKorff, 2002; Leal, Morais, and Pimenta, 2014; Cramm, Strating, Tsiachristas, and Nieboer, 2011).

D. Aims of the Hypertension Disease Management Training Program

Given those shortcomings in hypertension management in our healthcare system, it is essential to develop a training program for nurses in primary health care centers to empower hypertensive patients on self-care for improved outcomes. Importantly, as rural areas of Lebanon may have limited resources, a hypertension management program will be especially helpful in those areas. In this project, we will explore the feasibility of implementing the content of the training by taking the perspective of registered nurses working in Abey community. Abey is a village in Aley District of Mount Lebanon Governorate. The village is twenty two kilometers from Beirut. The primary health care center in Abey serves people living in Abey and surrounding villages.

The motivation behind proposing a Hypertension Disease Management Training Program for Registered Nurses is to strengthen nurses' roles in empowering patients to self-manage their hypertension by providing the most suitable healthcare services for those patients and by educating, monitoring, and coaching them on how to self-manage their hypertension.. The program includes implementation plan containing modules on hypertension, motivational interviewing skills, and a protocol for managing hypertension. Finally, the feasibility and acceptability of the proposed training program is explored in Abey Primary Health Care Centers and its facilitators and barriers are identified.

Before describing this program, a desk review of the role of nurses in managing hypertension in primary health care that complies evidence from guidelines adopted in the United States and Canada is presented and will be highlighted in the next chapter.

CHAPTER II

LITERATURE REVIEW

Nurses have essential and important roles and duties in healthcare. They serve their communities in many ways through connecting, communicating, expanding, and coordinating care with patients, families, care givers, doctors, and other healthcare providers. Moreover, nurses have established an effective and safe responsibility and care in disease diagnosis, prevention, management, rehabilitation, and treatment (Aiken, Maier, and Busse, 2017).

In addition to this, nurses' roles in improving hypertension control and preventing complications caused by hypertension has expanded and evolved over the past 50 years, incoherence with the physician's role. Nurses' involvement in hypertension control started with measuring and monitoring blood pressure. Then, it expanded towards patient education becoming one of the most effective strategies to improve hypertension (Himmelfarb, Commodore-Mensah, and Hill, 2016). Today nurses role in hypertension management demand holistic aspects of care, including detection, monitoring, assessment, referral; coordination of care; medication management and diagnostics; patient education, counseling, coaching, and skill building; following up; clinic management; population health management; and quality improvement and performance measurement (Himmelfarb, Commodore-Mensah, and Hill, 2016).

In order to propose a hypertension disease management training program for registered nurses, a desk review of the role of nurses in managing hypertension in primary health care based on evidence from guidelines adopted in the United States, Canada, and

Lebanon must be done. Then, some concepts related to hypertension management will be explained.

A. Desk Review of the Role of Nurses in Managing Hypertension in Primary Health Care

Nurses are the backbone of the healthcare industry. It is important to review their roles in managing hypertension in the United States of America and Canada to integrate their roles and responsibilities in Lebanon. First of all, figures 1 and 2 show the difference between the hypertension classifications in the United States of America according to the American Heart Association (Whelton, et al., 2018) and Hypertension Canada (Rabi, et. al., 2020).

Blood Pressure Categories

American Heart Association.

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 – 129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 – 139	or	80 – 89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

Figure 1. Blood Pressure Categories according to the American Heart Association

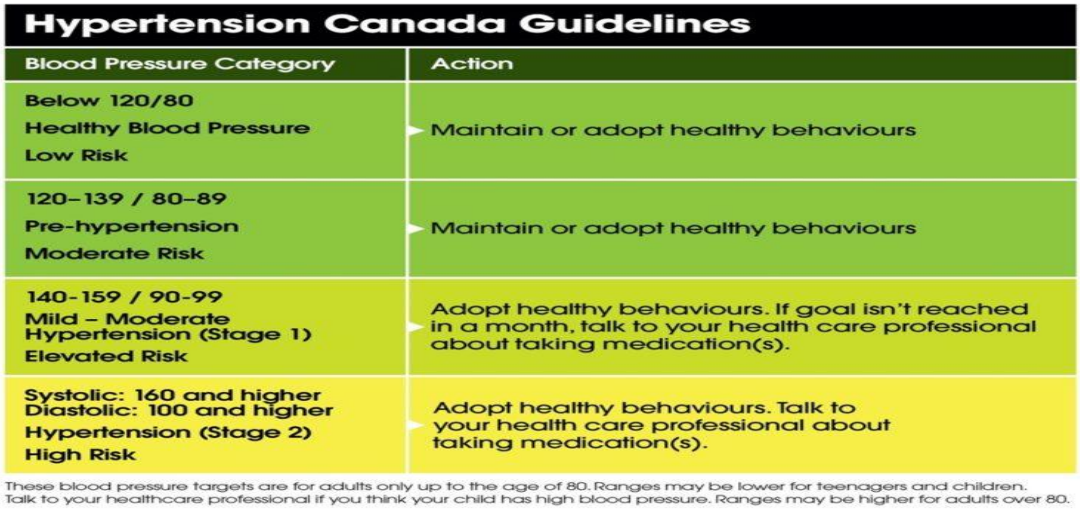


Figure 2. Blood Pressure Categories according to Hypertension Canada Guidelines

1. Nurses Role in Managing Hypertension according to Guidelines adopted in the United States of America

Centers for Disease Control and Prevention (CDC) Division for Heart Disease and Stroke Prevention (DHDSP) created the Hypertension Management Program toolkit (HMP) as a team-based and patient center program. The program's goal is to promote hypertension control and improve each patient's overall health, wellbeing, and quality of care in healthcare settings through resource-constrained settings (Centers for Disease Control and Prevention, 2021).

This online toolkit- that is composed of interactive e-learning modules based on ten Hypertension Management Program components- guide and prepare rural health systems, resource-constrained, and other health care systems serving socioeconomically disadvantaged populations as those lacking health insurance to implement this program at their health care systems and control hypertension (Centers for Disease Control and Prevention, 2021). The ten program components include:

a. Program Component 1: Integrated Care Team

It is essential for the Hypertension Management Program to have a well-organized responsible team that has clear and well identified roles and responsibilities for each member/ staff in the program. This team is responsible for the identification of hypertension risk factors, modification of hypertension treatments, and establishment of an ongoing dialogue with patients about their health and care, and the education of patients about controlling their blood pressure (Centers for Disease Control and Prevention, 2021).

The integrated care team includes a hypertension management council, HMP staffing, and HMP champion. To start with, HMP should have a council that will guide its practice. The hypertension management council consists of HMP leadership, program manager, regional health system leadership, program champion, clinical staff (doctors and nurses), pharmacists, patient advocates, and representatives from specialty care departments (Centers for Disease Control and Prevention, 2021). The council must meet every 2 months to discuss the HMP goals and expectations, establishing policies, protocols, and procedures (involving clinical workflows, medication combination therapy protocols, and program staffing), make decisions according to literature and staff feedback, communicate with other health system leaders, and set annual quality program goals (Centers for Disease Control and Prevention, 2021). Moreover, the HMP staffing include:

- Pharmacists
- Nurses: measure blood pressure, help in registry, participate in the outreach, conduct medication management plan, and aid in the hypertension management visits.

- Front Office Staff
- Physicians and Advanced Care Providers (Nurse Practitioner): monitor performance of the HMP, approve medication management plan, develop evidence-based hypertension management procedures and guidelines, and prepare educational materials and sessions.
- Specialists such as dietitians, social workers, behavioral health specialists, and obstetricians.

Finally, the HMP champion has a big role in assuring the ongoing success of the HMP and managing hypertension through motivating staff, training staff, and be a good communicator with all the staff (Centers for Disease Control and Prevention, 2021).

b. Program Component 2: Patient Registries and Outreach Lists in the HER

Patient registries provide the program with patients that are eligible for the HMP (Centers for Disease Control and Prevention, 2021). Their registry criteria are:

- Registry 1: 18-85 years patients with known diagnosis of HTN
- Registry 2: patients having a diagnosis of HTN(not been seen by their provider since 1 year or patients who need hypertension-elated lab tests and medication refill)

Moreover, the goal of the outreach is to inform patients about the HMP and encourage them in managing their hypertension through participating in the program. Outreach can be integrated through phone calls, emails, and messages. Therefore, any hypertension management program should have a registry and outreach through creating criteria for them, determining method of application, training the staff on the registry and

outreach processes, and put them into action (Centers for Disease Control and Prevention, 2021).

c. Program Component 3: No-Copayment Walk-in/Scheduled Blood Pressure Checks

The HMP provide their patients a free visit (no charge) that allows their patients to check their blood pressure, validate their home blood pressure monitor, educate them about hypertension, and refer them to the nurse and doctor if their blood pressure is elevated (Centers for Disease Control and Prevention, 2021). This visit can be walk-in or can be scheduled.

d. Program Component 4: EHR Alerts for Blood Pressure Re-check

The purpose of the blood pressure alert is to identify patients with undiagnosed hypertension. The alert will let the nurse repeat the blood pressure after one minute to validate the blood pressure measurement. The alert will appear on the computer if blood pressure is above 130/80 mm Hg in the first measurement and will remain on screen if the second measurement is also above or equal to that threshold (Centers for Disease Control and Prevention, 2021).

e. Program Component 5: Education for Nurses and Other Staff on Blood Pressure Measurement Technique

This component provide nurses and patients with a proper technique to measure blood pressure and document it. If the patient came at his first visit, the nurse should measure three blood pressure in both hands and repeat the measurement from the arm that gave a higher blood pressure reading. The measurements should be separated by one to two minutes (Centers for Disease Control and Prevention, 2021).

f. Program Component 6: Promote Use of Combination Medications to Treat High Blood Pressure

The integrated care team meet and create a standardized protocol about combination medication for doctors to follow when they need to prescribe medication. Its purpose is to decrease blood pressure faster and obtain optimal blood pressure as measured through decrease in pill burden, increase in medication adherence by a single pill, and cost effective (Centers for Disease Control and Prevention, 2021).

g. Program Component 7: Hypertension Management Visits

Hypertension Management Visit steps (Centers for Disease Control and Prevention, 2021):

- Step A: The registry staff and nurses identify hypertensive patients that are in need for the HMP.
- Step B: They send those patients' charts to the pharmacists before the hypertension management visit.
- Step C: The pharmacists create two medication management plans to be implemented by the nurses (first plan is when the patient's blood pressure is equal or below target blood pressure and the second plan is when the blood pressure is above target).
- Step D: The pharmacists send the medication plans to the doctor for approval.
- Step E: The doctor reviews the plan of care.
- Step F: The doctor approves the plan and sends it to nurses that are responsible for the hypertension management visit.
- Step G: The nurses measure patient's blood pressure, implement the medication management plan through picking the applicable plan of care, provide educational

sessions to the patient, order labs, review and validate patient's home blood pressure measurements.

- Step H: Patients return to registry and outreach for future follow up.

h. Program Component 8: Promotion of Self-Measured Blood Pressure Monitoring

Nurses should educate patients to measure their blood pressure at home 2 times a day (morning and evening- 2 measurements each and one minute apart) and document them to share the results with the nurses and doctors. Nurses and doctors must ask their patients to bring their blood pressure monitor machines to check if they are accurate by comparing their machines with the patients' machines (Centers for Disease Control and Prevention, 2021).

i. Program Component 9: Specialty Department Blood Pressure Measurements with Referral to Primary Care When Needed

When patient visits the primary care center for other specialties, the nurse must take his/her blood pressure, repeats it if high, and the system must alert if the patient's blood pressure is elevated, then the nurse must refer him/her to the HMP clinic. All staff must be educated on this topic (Centers for Disease Control and Prevention, 2021).

j. Program Component 10: Incentives, Rewards, and Recognition

The HMP rewards its high performing staff through providing financial and nonfinancial rewards (Centers for Disease Control and Prevention, 2021). All staff will have their performance monitored.

2. Nurses Role in Managing Hypertension according to Guidelines Adopted in Canada

The Hypertension Management Program initiated as a research study, being called the Hypertension Management Initiative. It was led by the Heart & Stroke Foundation of Ontario and was launched in 2007 (Rabi, et al., 2020; CorHealth Ontario, 2019). The Hypertension Management Initiative used an approach similar to the Ontario's Chronic Disease and Management Framework. Afterwards, the Hypertension Management Initiative became the Hypertension Management Program that was fully funded by the Ministry of Health and Long Term Care (Rabi, et al., 2020; CorHealth Ontario, 2019).

This program is similar to the HMP program in the United States of America. Both have a team, a council, and a program champion role. The Hypertension Management Program adapted in Canada have a standardized medication plan according to Primary Care Medical Directive for Hypertension Management adapted from Federation of Health Regulatory Colleges of Ontario Template (Rabi, et al., 2020; CorHealth Ontario, 2019). This plan includes medication initial dose, medication titration, and maximum dose; and standardized laboratory monitoring by medication class (Rabi, et al., 2020; CorHealth Ontario, 2019).

Moreover, the nurses' roles in this program are as follows: (Rabi, et al., 2020; CorHealth Ontario, 2019)

- Nurses schedule the first patient's visit as a half hour appointment in order to have enough time to ensure the patient has an appropriate understanding of hypertension, risk factors, complication, and management plan (medication and lifestyle changes).

- ❖ Nurses measure patients' blood pressure, weight, height, body mass index (BMI), and waist circumference.
- ❖ Nurses document patients' information (name, gender, and age), patients' history (medical and surgical history, medication taking, and chief complaint), laboratory studies done, lifestyle goals, and document next visit on the standardized Visit Flow-sheet.
- ❖ Nurses asks about home blood pressure measurements and review them.
- ❖ Nurses educate patients about self/home blood pressure monitoring techniques and check their appropriate equipment.
- ❖ Nurses work with clients to identify lifestyle and self-care practices that influence hypertension management plan:
- ❖ Diet: nurses assess and educate their patients about dietary risk factors and consuming the DASH diet.
- ❖ Healthy weight: Nurses advocate their patients to decrease their weight when having a BMI greater than or equal to 25 IV and a waist circumference over 102 cm for men and over 88 cm for women.
- ❖ Alcohol and smoking: Nurses use validated tools to assess patients' use of alcohol and smoking (quantity and frequency) and let the nurse practitioner help them in changing their behavior.
- ❖ Stress: Nurses help hypertensive patients to cope with stress, manage it, and let them find their own healthy way on reacting to stressful events.
- ❖ Medication and medication adherence: Nurses educate their patients on the medication prescribed. Nurses (especially Nurse practitioner) assess patients'

adherence to the treatment plan in each visit. Nurses work with doctors to simplify patients' dosing regimens.

- Before patients leave, the nurse must book a follow up visit with the patient. The frequency of follow-up visits should be determined by the level of the patient's BP control, consistent with Hypertension Canada guidelines, however medical judgment may indicate another time frame (e.g. shorter intervals when adjusting medications to reach target)
- Nurses must book a follow up visit after 6 months to all patients.
- Patients with high blood pressure (after the first visit) must have a follow up visit after 1 or 2 months from the first visit to check if medication needs to be adjusted and if lifestyle goals are met. These patients should be seen every 1- 2 months until their blood pressure measurements are below target on 2 consecutive visits.
- Shorter interval visits might be scheduled between visits if patient is symptomatic, have severe hypertension, have intolerance to antihypertensive medication, or have an organ damage.
- Patients should be seen at 3- to 6- months when they reach their targeted blood pressure measurements.
- During patients visits, the nurse uses the 5 A's (Assess, Advise, Agree, Assist and Arrange) and behavior change techniques and tools (motivational interviewing and goal setting) to help patients modify and change their lifestyle practices that are affecting their blood pressure.

3. Nurses Role in Managing Hypertension according to Guidelines Adopted in Lebanon

As mentioned before, the Lebanese Ministry of Public Health has a non-communicable disease prevention and control plan including hypertension focusing is more on screening and not on management of hypertension (MoPH, 2016). Also, the plan only mentions advising patients towards changing their lifestyle practices (reduce salt intake, manage weight, limit alcohol consumption, stop smoking, and limit caffeine intake) (MoPH, 2016). Advising patients is not enough to manage hypertension. There is a need for a close monitoring and follow-up of lifestyle practices. Moreover, this plan does not address roles of each healthcare provider, it rather mentions the activities only. Therefore, primary health care centers lack a proper hypertension management plan. This is a huge gap in managing hypertension in Lebanon.

After presenting a desk review of the role of nurses in managing hypertension in primary health care based on evidence from guidelines adopted in the United States and Canada, and after understanding the Lebanese primary health care situation in managing hypertension, some concepts and tools must be well understood and studied before starting with the program that are the keywords in managing hypertension.

B. Self-Care for Hypertension

All patients with chronic diseases as hypertension make their own decisions influencing their health as buying medication, taking the right dose of it, deciding to adopt a healthy lifestyle or not, and recognizing warning signs and symptoms of their disease. Those decisions are made at home, on the street, at work, with family and friends- more significantly the decisions are made away from health care providers.

All registered nurses in primary health care centers must understand and know about self-care to support patients self-manage their care and make the right decisions when they are away from them by increasing patients' skills and confidence in managing their health and change their behaviors. Self-care or self-care management is defined as a "naturalistic" decision-making process that impact actions that maintain physiologic stability, helps in the perception of symptoms, and direct the management of those symptoms (Riegel, Dickson, and Faulkner, 2016). Self-care management recognizes the person as a key player and an active participant in his/her care management, with the health care provider in a supportive role. The goal of self-care management is to strengthen the person's competence and confidence to manage his/her condition, make informed decisions about care, and adopt healthy behaviors.

Furthermore, self-care focuses on three separate but linked sequent concepts and processes (Figure 1). To start with, the first self-care concept/ process is maintenance, which captures treatment adherence and healthy behaviors and actions (exercising, smoking reduction and cessation, taking medications, following a salt restricted diet, and managing stress) (Riegel, Dickson, and Faulkner, 2016). Moreover, the second self-care concept/process is self-care symptom perception. It is described as the detection of physical sensations and interpreting its meaning (Riegel, Dickson, and Faulkner, 2016). Self-care symptom perception includes body listening, monitoring and detecting signs, recognizing, interpreting, and labeling symptoms. Finally, the third and the last self-care concept/process is self-care management, or the response to symptoms when they occur and the response to change (by taking an extra diuretic, limiting fluids, or calling one's health care provider) (Riegel, Dickson, and Faulkner, 2016). In order to master these self-care concepts/ processes, self-efficacy is needed, which means the

confidence and belief in one's ability to perform self-care behaviors and actions effectively and persist doing them despite barriers and obstacles (Riegel, Dickson, and Faulkner, 2016).

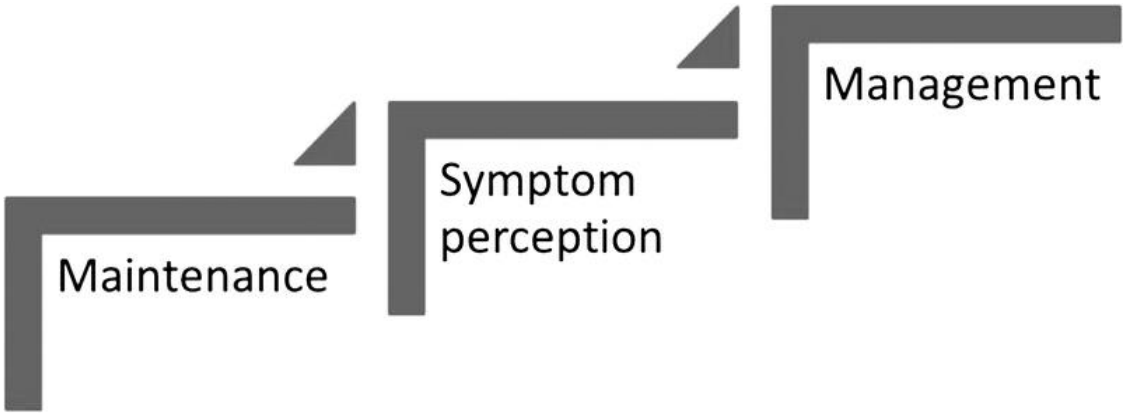


Figure 3. Diagram of the Self-care Process

According to Riegel, Dickson, and Faulkner, there are many factors and determinants jeopardizing self-care and are as follows:

- Culture and Socio-demographic characteristics:

  Cultural differences, ethnicity, socioeconomic status, health literacy, and acculturation level will affect the receptivity of a patient to patient education and willingness to accept information and incorporate it into his or her lifestyles (Riegel, Dickson, and Faulkner, 2016). Cultural background determines what an illness means from the patient's cultural or religious perspective. Religious beliefs and cultural and social norms affect a patient's readiness to learn. Also, these affect how a person perceives, copes, and experiences with their chronic disease as hypertension (Dickson, McCarthy, Howe, Schipper, and Katz, 2013). For example, low-income patients have an issue with adhering to dietary changes because of lack of cooking techniques, cultural food preferences,

family roles, and affordability of hypertension diet (Dickson et al., 2013; Cameron, McLennan, Rendell, Whitbourn, and Thompson, 2014).

- Personality traits:

  People who prioritize their emotions think that a chronic illness as hypertension is like falling into a deep pit and therefore, the nurse will have hard time motivating them to have good self-care practices. In other words, people who prioritize their intellectual thinking think that a chronic disease is a path that goes up and down, sometimes flat, other time smooth or rough. These people have better self-care practices (Riegel, Dickson, and Faulkner, 2016).

- Social/ environment:

  Family is the social network from which the patient acquires some of his or her own identity. Some patients has strong psychological bonds with their families and others don't. Better adherence to self-care practices is associated with level of organization, cohesion, conflict, and communication in the family (Riegel, Dickson, and Faulkner, 2016). Therefore, by identifying the family's predominant lifestyle, the proper self-care practices can be introduced to them.

  Moreover, other social/environmental factor influencing self-care is accessing social services (Stamp, 2014). Also, patients living in rural areas have difficulty in accessing care. However, most of those who live in such areas share strong social norms and cultural beliefs promoting self-care (Vellone et al., 2014).

Last point to discuss in self-care is the role of healthcare provider especially nurses. The role of the nurse is to support patients self-manage their care and taking the right decisions when they are away from the healthcare facility through increasing patients' confidence and skills in managing their health problems (Riegel, Dickson, and Faulkner, 2016). The nurse will achieve this goal through setting motivational interview and goal setting sessions, following up on the patients, and using specific and valid assessment and following up tools. These sessions include regular assessment of progress and problems, goal setting, and problem-solving support.

C. Motivational Interviewing and Goal Setting Sessions

Nurses support and help their patients to self-manage their lifestyle and self-care practices and eventually control blood pressure. Motivational interviewing is a psychotherapeutic intervention that is a foundation to engage patients in changing their behavior (Michalopoulou et al., 2022).

Miller (1983) created motivational interviewing and goal setting sessions in 1983 and this tool is being adopted in many programs in the medical field to improve patients' self-care practices as medication adherence, healthy diet, physical activity and exercise, smoking cessation, and decrease alcohol consumption (Miller and & Rollnick, 2013; Wan, Kattan, and Terry, 2018; Ma, et al., 2014; Woollard, et al., 1995; Ogedegbe, et al., 2008). The sessions include talking to patients and assessing their input through helping them to clarify their goals and values and assessing the consequence of their current behaviors and self-care practices with these goals (Michalopoulou et al., 2022; Miller and & Rollnick, 2013). Motivational interviewing and goal setting sessions had a significant effect on the decrease of hypertension compared to the control group (Wan, Kattan, and

Terry, 2018; Ma, et al., 2014; Woollard, et al., 1995; Ogedegbe, et al., 2008). Hypertension management program where patients are part of the care team is an evidence-based approach designed to improve blood pressure control (CorHealth Ontario, n.d.). Motivational interviewing and goal setting sessions include expressing empathy towards patients, connecting patient's goals and values with their current behavior, respecting the patient's autonomy, supporting their self-efficacy, and avoiding argument with the patient (Michalopoulou et al., 2022; Miller and & Rollnick, 2013).

Nurses must use a tool to assess their patient's behaviors, a tool to set goals and understand one's behavior used in motivational interviewing and goal setting sessions, and a tool to follow up on patient's progress towards changing their self-care behaviors.

D. Validated Tools that are used in the Hypertension Disease Management Training Program

Nurses advocate for patients, promote healthy lifestyles, provide health education, and direct care for many patients. Nursing care and patients' knowledge and self-care practices must be assessed with valid tools to support nursing and health promotion programs.

Patients' knowledge level can be enriched with educational interventions. Determining the current knowledge level of patients would shed light on gaps making educational interventions essential (Jackson, Okonta, and Ukwe, 2022; Erkoc, Isikli, Metintas, and Kalyoncu, 2012; Jankowska-Polańska, Uchmanowicz, Dudek, and Mazur, 2016).

Hypertension-related knowledge must be studied and assessed to be the starting point in any hypertension related program, study, or project. The Hypertension

Knowledge-Level Scale (HK-LS) is a validated tool (Cronbach $\alpha = 0.82$) that is used in many programs (Jackson, Okonta, and Ukwe, 2022; Erkoc, Isikli, Metintas, and Kalyoncu, 2012; Jankowska-Polańska, Uchmanowicz, Dudek, and Mazur, 2016). This tool includes items questioning hypertension definition, etiology, medical treatment and complications of hypertension, as well as behaviors and attitudes towards self-care practices as diet, drug compliance, and lifestyle (Jackson, Okonta, and Ukwe, 2022; Erkoc, Isikli, Metintas, and Kalyoncu, 2012; Jankowska-Polańska, Uchmanowicz, Dudek, and Mazur, 2016).

Nurses can also use validated tools to measure and assess whether patients are managing their lifestyle practices. The Hypertension Self-Care Activity Level Effects, or H-SCALE, is a self-report assessment tool developed to measure the recommended self-care activities that would examine the relationship between blood pressure control and adherence and commitment to the self-care lifestyle behaviors (Kumar, O'Neal, & Davis, 2016; Warren-Findlow, Basalik, Dulin, Tapp, and Kuhn, 2013). The H-SCALE was also developed to be a counseling tool that helps primary care nurses to assess and monitor the self-care behaviors and seek controlling blood pressure to their patients (Kumar, O'Neal, & Davis, 2016; Warren-Findlow, Basalik, Dulin, Tapp, and Kuhn, 2013). This tool will help nurses to set a motivational interview and goal setting sessions to control blood pressure (Miller and & Rollnick, 2013; Wan, Kattan, and Terry, 2018; Ma, et al., 2014; Woollard, et al., 1995; Ogedegbe, et al., 2008). Motivational interviewing and goal setting sessions include a preparatory and elicited change talk (patients' desires on managing there self-care practices, ability to change, reasons for changing, needs for change, querying extremes of the results, and looking back and forward on their lifestyles an health) and a goal setting plan (goal, reality, options available, and ways to complete

plan of action) (Miller and & Rollnick, 2013; Wan, Kattan, and Terry, 2018; Ma, et al., 2014; Woollard, et al., 1995; Ogedegbe, et al., 2008).

On the other hand, the most used instrument in measuring the level of health implementation is the Assessment of Chronic Illness Care (ACIC) (Bonomi, Wagner, Glasgow, & VonKorff, 2002; Leal, Morais, and Pimenta, 2014; Cramm, Strating, Tsiachristas, and Nieboer, 2011). ACIC is a tool that supports nurses to identify areas for improvement in their care for non-communicable diseases and chronic illnesses (like hypertension), and to evaluate the nature and level of improvements (Bonomi, Wagner, Glasgow, & VonKorff, 2002; Leal, Morais, and Pimenta, 2014; Cramm, Strating, Tsiachristas, and Nieboer, 2011). This tool gives us a feedback on the support for chronic illness care the program provides. The tool consists of seven parts in which each part is also divided in many graded components ranging from 0 to 11. The higher point values show that the actions explained in each part are more fully implemented. The tool parts, components, and scores are:

- Part 1: Organization of the Healthcare Delivery System (6 components). To calculate the average score: sum of scores of the 6 components divide by 6 (the number of components in this part).
- Part 2: Community Linkages (3 components). Average score: sum of scores of the 3 components divide by 3 (the number of components in this part).
- Part 3: Practice Level
    - Part 3a: Self-Management Support (4 components). Average score: sum of scores of the 4 components divide by 4 (the number of components in this part).

    - Part 3b: Decision Support (4 components). Average score: sum of scores of the 4 components divide by 4 (the number of components in this part).
    - Part 3c: Delivery System Design (6 components). Average score: sum of scores of the 6 components divide by 6 (the number of components in this part).
    - Part 3d: Clinical Information Systems (5 components). Average score: sum of scores of the 5 components divide by 5 (the number of components in this part).
- Integration of Chronic Care Model Components (6 components). Average score: sum of scores of the 6 components divide by 6 (the number of components in this part).

Then to provide the program score, add all the average scores of the 7 components and divide the sum of averages by 7 (total number of parts). This last score is interpreted based on the Assessment of Chronic Illness Care (ACIC) tool interpretation guidelines and is as follows:

- Between “0” and “2” = limited support for chronic illness care
- Between “3” and “5” = basic support for chronic illness care
- Between “6” and “8” = reasonably good support for chronic illness care
- Between “9” and “11” = fully developed chronic illness care.

There is a need for a close monitoring and follow-up of lifestyle practices. All the tools mentioned above will be used in the Hypertension Disease Management Training Program for Registered Nurses that I am proposing.

CHAPTER III

PROGRAM DEVELOPMENT

Hypertensive Disease Management Training Program at Primary Health Care Center is designed. The program's mission statement is to improve the well-being of hypertensive patients by providing the most suitable healthcare services for those patients and by educating them on how to live with their hypertension.

The program development will start with a baseline assessment at Abey PHCC, then a program plan, implementation plan, program evaluation, and en with the feasibility of this program in Abey PHCC.

A. Baseline Assessment at Abey Primary Health Care Center

To start with, a baseline information about the care provided in Abey PHCC must be obtained for the program development.

The team of Abey PHCC was approached, observed, and asked them if there is a specialized policy or protocol for hypertension in their Chronic Disease Management Program, and if they have enough information for hypertension management. They said that there is no specific policy for hypertension disease, and that they don't have enough information to provide a thorough program. As a baseline information, the team of Abey PHCC must fill the ACIC tool (Appendix I) to assess the level of support for chronic illness care and check if their program needs to be improved. Abey PHCC has basic support for chronic illness care (not reasonably good or fully developed). Thus, this program needs points to improve. Therefore, this is taken as a baseline information about

the team before the beginning of my program intervention. The program plan and the implementation plan are explained below.

B. Program Plan

The program plan will start by specifying the program's goals, objectives, team members, equipment, supplies, space needed, program protocols, program forms, activities for each objective that relates to the goal, and the budget/funds to implement the activities.

1. Goals and Objectives

The most important part of a proposed program is to set defined goals and objectives. The first step towards developing a program is to set and form the program goal, since it is the foundation of the program. Then comes defining the objectives that will aid in achieving and reaching the goal. My goals and objectives are stated in the below figures (Figures 2, 3, and 4).

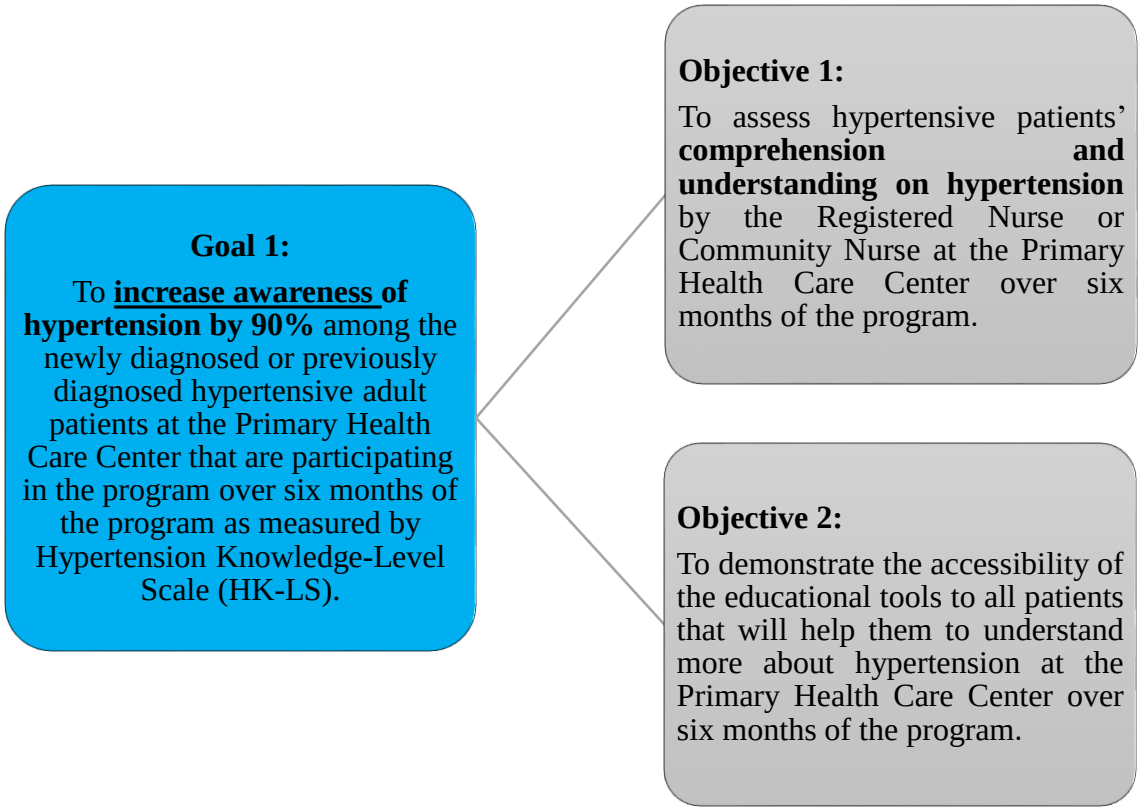


Figure 4. Goal 1 and its Objectives

(Erkoc, Isikli, Metintas, & Kalyoncu, 2012).

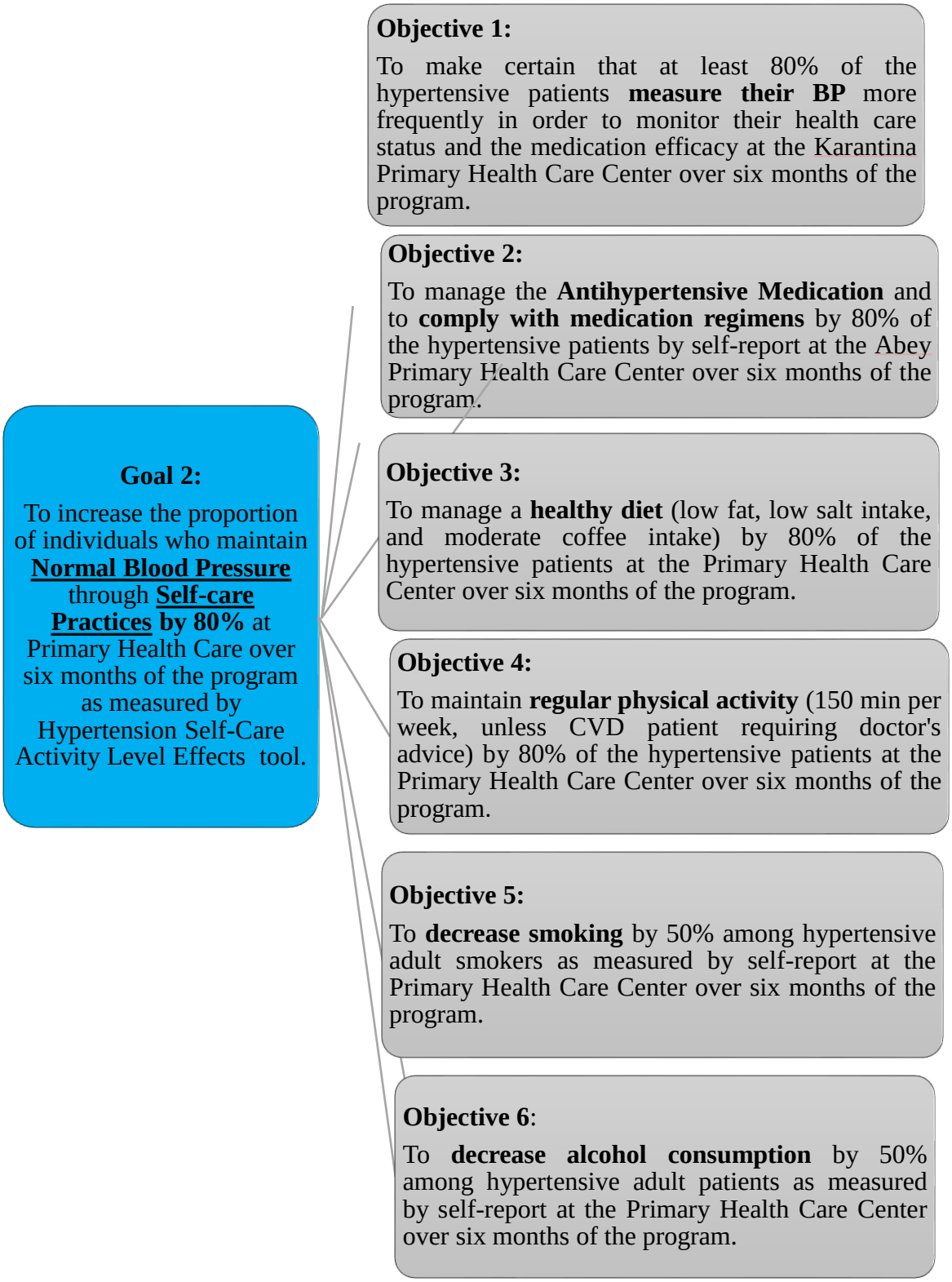


Figure 5. Goal 2 and its Objectives

(Kumar, O'Neal, & Davis, 2016; Warren-Findlow, Basalik, Dulin, Tapp, and Kuhn, 2013)

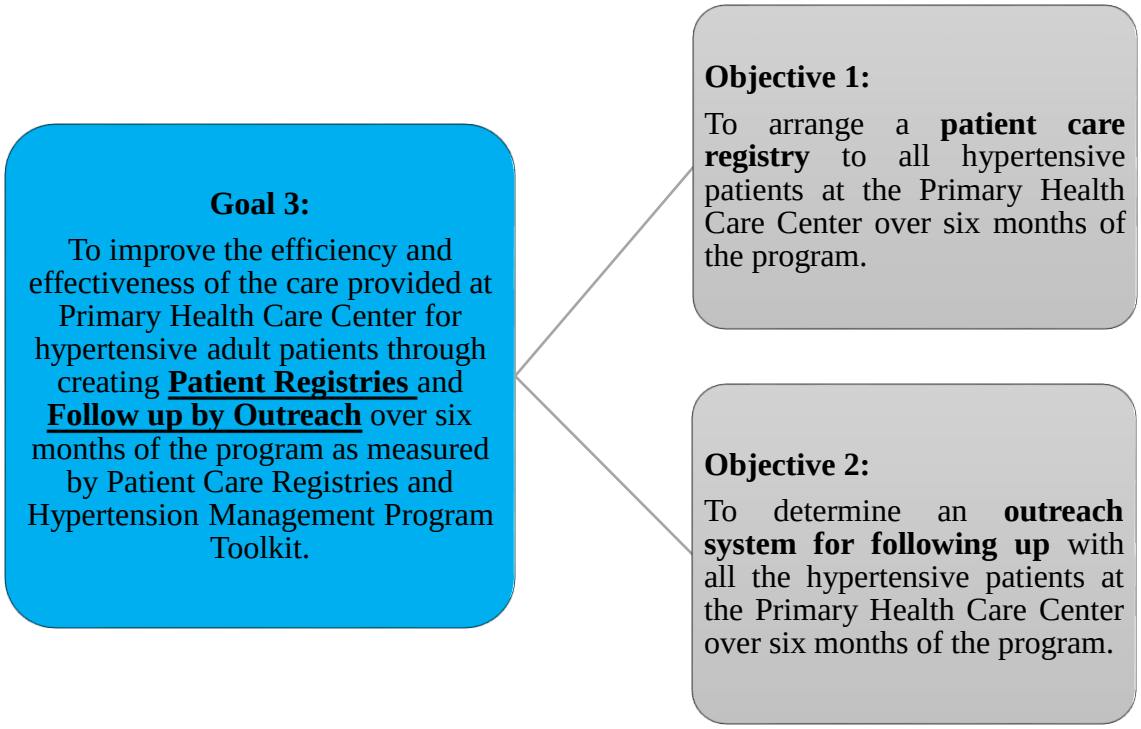


Figure 6. Goal 3 and its Objectives

(Bagley, 2016).

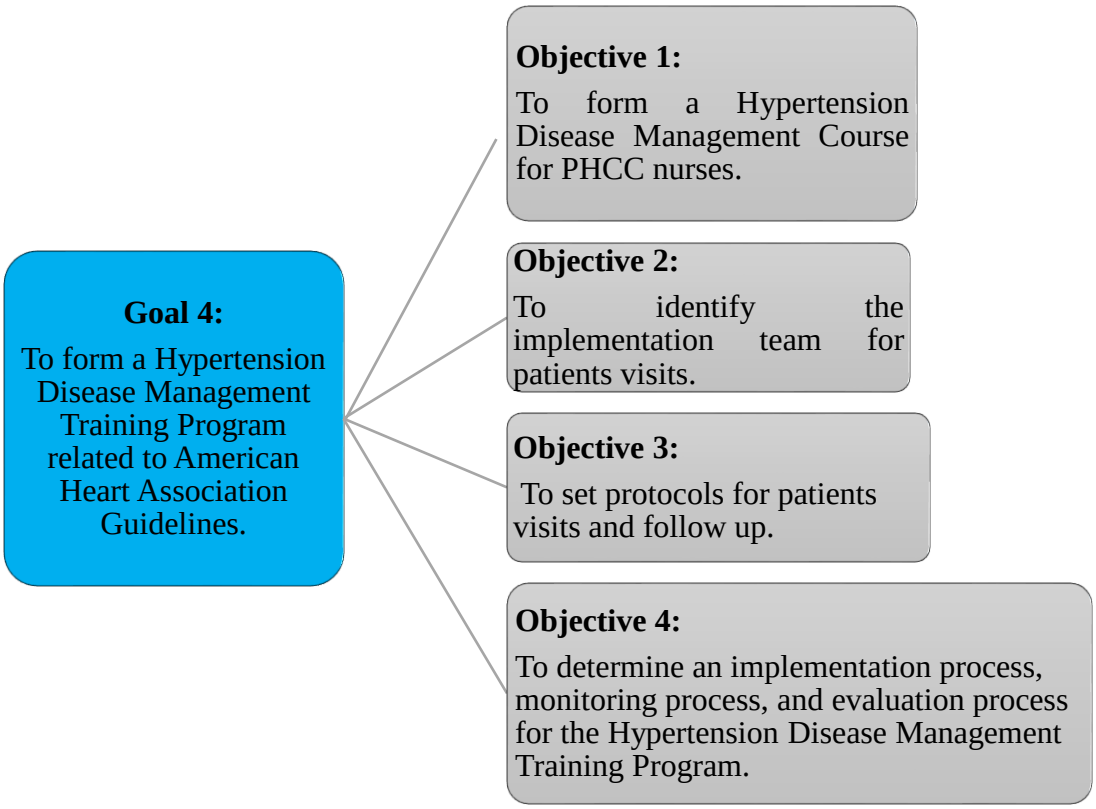


Figure 7. Goal 4 and its Objectives

After stating the goals and objectives of this program, an interventional strategy should be identified and clarified for reaching the target of the program. Therefore, what is the intervention strategy in program planning?

2. Program Plan

Planning phase consists of processes applied to further define and mark the project scope, identify the activities that will occur in the implementation phase, and provide a roadmap for the clinic (CDC).

This phase is based on:

a. Planning team members

The members include cardiologists, nephrologists, registered nurse, community nurse, pharmacists, information technology specialist, consultants (dietitian), and PHCC surrounding community. A meeting with these members must be set to share their thoughts and opinions on the things that they think must be changed concerning hypertension management. Therefore, these members will be part of the planning phase. Unfortunately, there are not any nephrologists or pharmacologists at Abey PHCC, the qualified staff and team that will be included in the Hypertension Disease Management Training Program are explained below.

b. Qualified staff and Team

My program needs the following staff: 2 registered nurse or 1 registered nurse and 1 community nurse, cardiologist, nephrologist, information technology specialist, and consultants (dietitian).

- Nurses: assess patient, measure blood pressure, help in registry and document information, participate in the outreach, help conducting a medication management plan, aid in the hypertension management visits, and schedule a next visit.
- Community Nurse: assess patients, prepare and conduct educational session to each patient in their first visit, monitor the pre- and post-tests after the visit, undergo the motivational interviewing and goal setting sessions, send educational messages to patients on their phones regarding hypertension self-care practices, and monitor performance of Hypertension Disease Management Training Program.

- Cardiologist and Nephrologist assesses the patient, order blood tests and images, diagnose, and develop medication management plan,
- Consultants such as dietitians, which will assess and conduct a diet plan for patients having lactose intolerance and other specific needs.
- Information technology specialist will add all the tools used in the Hypertension Disease Management Training Program to the system of the computer in the PHCC.

c. Equipment, Supplies, and Space

The equipment and supplies that will be used in implementing the program are:

- Data-scope
- Stethoscope
- Weight and Height Scale
- Gloves and mask
- Flyers
- Posters
- Computer
- Phone
- Pretest and Posttest Sheets

Moreover, with respect to the space needed for the program, only 1 room should be utilized that has enough space to occupy my equipment, patient with 1 companion, and the team. This room is designed for the team to measure vital signs, weight, and height, to do assessment, document data, educate, and schedule appointments for patients.

When the doctor orders laboratory studies (such as serum creatinine, BUN, lipid profile for hypertensive patients…), the nurse withdraws blood from the patient at the

Primary Health Care Center and then send them to the lab in the PHCC or send them to a lab outside the PHCC. PHCC offers discounts to patients in need who has laboratory studies.

d. Protocols

It is important for the Hypertensive Disease Management Program to have written and well-defined protocols for the staff to base their work on in addition to the activities. Written protocols will be further explained and defined in the implementation phase. These protocols include: (Kumar, O'Neal, & Davis, 2016)

- Written Protocols for **Assessment and Patient Visit.**
- Written Protocols for **Diagnosis and Laboratory tests** and other diagnostic procedures.
- Written Protocols for **Developing and Discussing a Treatment Plan.**
- Written Protocols for **Self-care Practices**
- Written Protocols for **Follow-up with the patient.**
- Written Protocols for Criteria of **Referring patients to a specialists** (Cardiologist or Nephrologist)
- AHA guidelines, 2017

e. Forms

Computer-based form will be used for the registry to document patients' information, next visits, and protocols. All the tools used in the Hypertension Disease Management Training Program will be integrated in the system of the computer in the PHCC with the help of the information technology specialist. Back up paper forms will

be used instead of the computer if something happened to it forms or if the information technology specialist is unavailable for updating their system. All the forms will be explained in the implementation plan.

f. Activities for each objective that relates to each goal

In order to achieve the goals and objectives, an intervention strategy should be set. In this intervention strategy, each objective has several activities and tasks to be undertaken. In this section, these activities are only stated briefly and will be elaborated in the implementation section. The below tables (Table 1, 2, 3, and 4) explain and elaborate on the activities for each objective of the goals of the program (First, second, and third goals). To start with, the activities corresponding to each objective of the first goal are: (Table 1).

Goal 1: to increase awareness of hypertension by 90% among the newly diagnosed or previously diagnosed hypertensive adult patients at the Primary Health Care Center that are participating in the program over six months of the program as measured by Hypertension Knowledge-Level Scale (HK-LS) (Erkoc, Isikli, Metintas, and Kalyoncu, 2012).	
Objectives	**Activities**
Objective 1: To assess hypertensive patients' comprehension and understanding on hypertension by the Registered Nurse or Community Nurse at the Primary Health	✓ When the patient arrives to his first visit, after assessment and diagnosis, education will start. The community nurse (myself in this case) will provide one-to-one educational

Care Center over six months of the program.	sessions to the patients during the six months at Primary Health Care Center about hypertension, risk factors of HTN , normal and abnormal values based on the American guidelines, symptoms of hypertension and hypotension, consequences of uncontrolled hypertension, medication adherence, and the importance of measuring their blood pressure daily. In the first session the education will start, and pre and posttest will be distributed to each patient. ✓ Before starting the education and after the assessment, a **pretest** will be conducted to all the adult hypertensive patients participating in this program. This pretest assesses previous knowledge on hypertension. ✓ After finishing the session, the Registered nurse or community nurse will distribute a **posttest** to the participants to assess their

	understanding and comprehension towards hypertension. ✓ These tests are based on the Hypertension Knowledge-Level Scale tool.
Objective 2: To demonstrate the accessibility of the educational tools to all patients that will help them to understand more about hypertension at the Primary Health Care Center over six months of the program.	✓ A **leaflet** will be distributed to the hypertensive patients with the basic information discussed during the first session by the nurse or me. ✓ Educational poster in the clinic will be posted. ✓ The topic of education, date of topic education, and signature will be documented in patient's chart.

Table 1. Activities Corresponding to Each Objective of the First Goal

Moreover, the activities corresponding to each objective of the second goal are: (Table 2)

Second Goal: to increase the proportion of individuals who maintain normal blood pressure through self-care practices by 80% at the Primary Health Care Center over six months of the program as measured by Hypertension Self-Care Activity Level Effects tool (Kumar, O'Neal, & Davis, 2016; Warren-Findlow, Basalik, Dulin, Tapp, and Kuhn, 2013).	
Objective 1: To make certain that at least 80% of the hypertensive patients measure their blood pressure more frequently in order to monitor their health care status and the medication efficacy at the Primary Health Care Center over six months of the program.	✓ When the patient comes to the clinic, the Registered nurse will teach the patient the proper way to measure blood pressure. ✓ The patient is instructed to measure his blood pressure in front of the team in the clinic. ✓ Educate patients to measure their blood pressure 2 times per day and when they feel tired. ✓ If the patient does not have a blood pressure machine, the team will lend him the machine they have or will be instructed to go to her neighbor that has a machine or to a pharmacy near him or measure his blood pressure.

	✓ Handouts will be provided to hypertensive patients at the end of their visit to keep track of blood pressure measurements at home. This handout must be filled by the patient and presented with the patient in the next visit. (National Center for Chronic Disease Prevention and Health Promotion, 2021)
Objective 2: To manage the antihypertensive medication and to comply with medication regimens by 80% of the hypertensive patients by self-report at the Primary Health Care Center over six months of the program.	✓ Each patient is instructed to bring all his antihypertensive medication; these medications will be checked if same generic name but different brand name (double dose) and expiry date will be checked; and patients will obtain an updated medication prescription from the doctor. ✓ If the patient is unable to secure his antihypertensive medications, the team will try to bring it and give him amount. ✓ Patients will be educated about taking their antihypertensive medication at the same time every day.

	✓ For the patients that have poly-pharmacy, a pill organizer is advised to be used. Patients' are asked to bring it with them the next visit to aid them by filling it with medication. ✓ Patients will be instructed to put their medication at bedside or any place they check daily in order not to forget take them.
Objective 3: To manage a healthy diet (low fat, low salt intake, and moderate coffee intake) by 80% of the hypertensive patients at the Primary Health Care Center over six months of the program.	✓ In the education session that will be held by the community nurse, patients must be informed to have low fat, low salt intake, and moderate coffee intake. ✓ Referral to a dietitian. ✓ Motivational interviewing and Goal Setting sessions will be scheduled for each patient to plan ahead, work on the plan, and achieve the goal of eating a healthy diet. ✓ These sessions will be documented in a form and added to the medical record of the patient.

	✓ A poster in the clinic must be held that include the proper diet and the undesired diet.
Objective 4: To maintain regular physical activity (150 min per week, unless CVD patient requiring doctor's advice) by 80% of the hypertensive patients at the Primary Health Care Center over six months of the program.	✓ In the education session that will be held by the community nurse, patients must be informed to regular physical activity (150 min per week, unless CVD patient requiring doctor's advice). ✓ Motivational interviewing and Goal Setting sessions will be scheduled for each patient to plan ahead, work on the plan, and achieve the goal of increasing his/ her physical activity. ✓ These sessions will be documented in a form and added to the medical record of the patient. ✓ A poster in the clinic must be held that include the importance of physical activity in controlling hypertension.
Objective 5: To decrease smoking by 50% among hypertensive adult smokers as measured	✓ Every time the patient comes to the clinic, the team will ask about his smoking (is it the same? Did it become more frequent or did it decrease?), and

by self-report at the Primary Health Care Center over six months of the program.	the team will show the patient a picture of a smoker lung and educate him about complications. ✓ Team will ask the patient about approaches for smoking cessation and assist in with his behavior modification. ✓ Awareness messages can be sent to the patients phone to trigger them to stop. ✓ Motivational interviewing and Goal setting sessions will be scheduled for each patient to plan ahead, work on the plan, and achieve the goal of decreasing smoking to minimum. ✓ These sessions will be documented in a form and added to the medical record of the patient.
Objective 6: To decrease alcohol consumption by 50% among hypertensive adult patients as measured by self-report at the Primary Health Care Center over six months of the program.	✓ Every time the patient comes to the clinic, the team will ask about his alcohol habits (is it the same? Did it become more frequent or did it decrease?), and the team will emphasize on the importance of deceasing alcohol consumption and

	showing patient complications from drinking. ✓ Team will ask the patient about approaches for alcohol reduction and assist in with his behavior modification. ✓ Awareness messages can be sent to the patients phone to trigger them to stop. ✓ Motivational interviewing and Goal setting sessions will be scheduled for each patient to plan ahead, work on the plan, and achieve the goal of decreasing smoking to minimum. ✓ These sessions will be documented in a form and added to the medical record of the patient.

Table 2. Activities Corresponding to Each Objective of the Second Goal

In addition to this, the activities corresponding to each objective of the third goal are: (Table 3)

<table>
<tr><td colspan="2">Third Goal: to improve the efficiency and effectiveness of the care provided at Primary Health Care Center for hypertensive adult patients through Patient Registries and Follow up by outreach over six months of the program as measured by Patient Care Registries and Hypertension Management Program Toolkit. (Bagley, 2016)</td></tr>
<tr><td>Objective 1:
To arrange a patient care registry to all hypertensive patients at the Primary Health Care Center over six months of the program.</td><td>✓ To achieve this objective, the first step is to show the registry video from American Academy of Family Physicians to the staff. https://www.aafp.org/fpm/2011/0500/p11.html
✓ Create a Patient Care Registry as per the American Medical Association through the following steps:
■ The staff and I will determine the criteria for the registry and build the registry framework. This framework consists of forming documents about what patient information needed to be collected in this program.
■ Train the team to use the registry.</td></tr>
</table>

	■ Put the registry into action to optimize care and identify patients who need services. (with the help of an Information Technology Specialist)
Objective 2: To determine an outreach system for following up with all the hypertensive patients at the Primary Health Care Center over six months of the program.	✓ Determine the criteria for the follow up by outreach and build the follow up framework. (the staff and I) ✓ Train the team to use the framework. ✓ This framework consists of modifying patients' follow up visits. ✓ Put the system into action.(with the help of Information Technology Specialist and nurse)

Table 3 Activities Corresponding to Each Objective of the Third Goal

Finally, the activities corresponding to each objective of the fourth goal are explained in the implementation part below.

To note that, new patients in their first visit will be asked to bring with them next visit all the previous labs they had (lipid profile, micro albuminuria, heart imaging). Labs may be ordered pre and post the intervention (after 6 months of the program).

g. Budget/Funds to Implement the Activities

The final part in the intervention strategy is identifying budget or funds to implement the activities. Therefore, my budget needs to target the following items:

- ✓ Staff salary (2 nurses, physician, and IT specialist)

- ✓ Equipment (data-scope, stethoscope, weight and height scale, and computer)- also keep little savings for their maintenance
- ✓ Flyers and posters
- ✓ Phone bills
- ✓ Medication, appropriate lab tests and imaging, and referrals

Fortunately, there are some NGOs (as Young Men's Christian Association, United Nations International Children's Emergency Fund- UNICEF…) who are funding the services in Primary Health Care Center (giving free medications, providing discounts for laboratory studies and electrocardiography). Therefore, there are little amount of patient fees. A balance sheet would be used to write how much money is being provided from the funds and how much money must be paid for all the activities in the program. Finally, the program's budget must be adjusted accordingly by prioritizing the items and searching for the most cost effective.

Last but not least, after writing a brief strategic intervention and activities, the coming sections will have a bigger explanation for each activity and how they are evaluated and tested.

C. Implementation Plan

After setting the program plan, an implementation plan should be conducted, and then the program should be evaluated. An implementation plan is a project management tool that aids in the project strategic plan execution through breaking down the implementation process into smaller steps within defined timeline (Malsam, 2022).

The first step in implementation plan is to understand how change is shifted. Kurt Lewin, the father of social psychology, theorized a three-stage model of change that is

known as the unfreezing-change-refreeze model. He has a field theory that relates one's behavior to one's personal characteristics and to the social situation in which one finds himself. Also he explains the behavior as a dynamic balance of forces working in opposite directions.

Lewin's force field consists of the driving forces and the restraining forces. The major driving force is the Hypertension Disease Management Training Program that will provide the steps towards achieving better hypertension control. While, the restraining forces in this program are patients' resistance to change, patients' assumption that this may not be a priority, patients' having no interest in smoking cessation or dietary changes, patients' human and non-human resources, and patients' poor education and poor economic status (Nursing Theory, 2020). These forces are reflected in the Lewin's model.

To start with, the first step in the model is the unfreezing phase. This phase involves finding a method enabling people to let go of an old pattern that was counterproductive in some way (Nursing Theory, 2020). In order to meet patients' needs and control their blood pressure, it is essential to support participants in enhancing their driving forces and reducing their restraining forces. Moreover, the change phase includes the change in feelings, thoughts, behavior, or all three, that is in some way more liberating and productive (Nursing Theory, 2020). So how people are excepting change? What do they need to turn the plan to actions? These questions are answered in phase three of the model-the refreezing phase. This phase establishes change as a new habit to become the "standard operating procedure." This phase stabilizes the change. Developing ways to sustain the change is crucial, and this is what was done throughout the implementation plan (Nursing Theory, 2020).

In my program, the unfreezing phase is the assessment phase reflected while assessing participants driving and restraining forces, preparing patients to realizing how much the program is important in their life, preparing the team to realize how much the program is important in their chronic disease management program, assessing organizational gaps and points that are missing regarding hypertension management, and gaining acceptance of the stakeholders, team, and community. Moreover, the second part of the model is the change phase reflected in the implementation phase through the involvement of stakeholders to decrease patients' resistance and increase their acceptance. Finally, the freezing phase is reflected through developing ways to stabilize and sustain the change. Therefore, Lewin's theory is about reinforcing the change and making sure the desired change is accepted and maintained in the future. This theory is reflected in all the activities in the implementation plan. The phases of the implementation plan that brings the project to success and change are:

1. Phases of Program Implementation

a. Gaining Acceptance

Resistance is a normal human reaction to change. To avoid the significant amount of resistance in the project, effective change management strategies are used from the start of the project. The change management strategy tool is a tool for managing resistance, engaging participants in the change, and gaining acceptance from the targeted community and stakeholders. This is accomplished through:

- Engaging the community (hypertensive patients coming to PHCC) in the program when approaching them and asking them about their needs and if they are ready to participate in the program to control their blood pressure.

- Engaging PHCC team (3 nurses and physician) by taking their inputs and insights while assessing the community, planning the program, involving them in the implementation, and showing them the program's outcomes.

b. Specifying Tasks and Estimating Resource Needs

This phase starts by reviewing the program plan to have a clear pathway on the activities, resources needed to complete the activities, and time required to achieve every task in order to achieve the goals and objectives of the program.

After that, a detailed list of activities, protocols, and documentation forms are prepared. First, a hypertensive management policy with a defined purpose is set. This policy consists of set of policies, purpose of the policy, and summary of the steps for patient's visit. The policy is presented in Appendix II. Also a form of the written protocols for patients visit is set and shown in Appendix III.

After that, a meeting with the doctor will be scheduled in the first week of March (Wednesday 1, Thursday 2, or Friday 3 March). In this meeting the community nurse will introduce the program to the doctor to be familiar with it and to participate in it. The meeting will contain the policy and protocol, forms used in the program. The meeting points are represented in Appendix IV.

Moreover, to make sure that the team in PHCC understands hypertension and hypertension management program, and to make sure that they are eligible to make the educational sessions and motivational interviewing and goal setting sessions to the hypertensive patients, an educational course about these topics will be provided to the team before starting with the patients. After completing the course, the second part of the

hypertension management program is about patients' visits and follow up. The course and the program are elaborated below.

i. Hypertension Disease Management Course

- Teaching philosophy

Every classroom has its own unique and specific learning community. The role of the community nurse in this part is to be a nursing educator to the PHCC nurses. The community nurse will guide each nurse in developing their own inquiries and habits of thought, enabling them to share their ideas and thoughts in a safe environment respecting diversity.

The curriculum will foster cooperative learning and will incorporate different learning styles making the content significant to all nurses. Therefore, the teaching philosophy revolves around the idea that an educator learns as much from his/her learners as they do from himself/herself. To incorporate this teaching philosophy in class, the community nurse must seek constant feedback from the nurses that will help the community nurse assess their learning needs and develop a teaching plan that aligns with the course content. Thus, the roles and responsibilities of each learner in this course are first to attend the class; complete the required readings and exam; to be active participants who present to class prepared and engage themselves in the learning process, and to be inquisitive and ask questions and present their own point of views that will nourish the learning environment. As the educator, the community nurse must always guide them, monitor their involvement, and evaluate their work.

In order to inspire the nurses in their learning process and have an impact on them, blended teaching philosophies is used. The community nurse will start

his/her teaching by the Essentialism approach that aims to transmit highly valued cultural heritage and basic teaching skills to the students. Then, he/she will emphasize the Progressivism approach since it is a student-centered teaching philosophy where students search for answers and explore their interests. This approach will facilitate learning and involve students in their learning. Finally, the last teaching approach is Re-constructionism teaching philosophy approach. Since the course tackles the health of the community, it is mandatory to learn and understand the social problems and needs of the community we are part of. This approach empowers nurses to be change agents to improve the health of this community. As an educator, the community nurse must focus on social reform as the aim of my education.

Moreover, as an educator, to make sure learners grasp all the information from the sessions, the community nurse will assess them through their participation in class, objective structured clinical examination, and final exam.

Last but not least, the course's desire is to build an environment for nurses to meet their full potential through inspiring them to grow physically, emotionally, mentally, and socially. The blended teaching philosophy will engage nurses in their learning and empower them to lead their learning paths.

- Placement of the Course

  Duration: March 6- March 29, 2023 (every Monday and Wednesday)

  Time: Each Monday from 12 pm- 2 pm *(four Mondays- two hours each)* and each Wednesday 12 pm -2:30 pm, except Last Wednesday

(March 29) from 12pm- 2pm *(four Wednesdays: three Wednesdays two and a half hours and last Wednesday two hours).*

- Location

  Primary Health Care Center

- Course Description

  This 17 hour and a half course is designed for registered nurses in Primary Health Care Center, and its focus is to manage hypertension. This course will help registered nurses to have an impact on the hypertensive patients coming to Primary Health Care Center, to be more self-aware about hypertension and its consequences, in order to prevent and control hypertension properly. Throughout the course, nurses will learn how to assess the needs and self-care practices of the hypertensive patients in order to develop the best hypertension management plan. Then nurses will be introduced to a patient assessment tool and a self-care activity tool to guide them throughout the management plan. Moreover, nurses will learn how to conduct a motivational interview and goal setting for each patient that will help him/her in changing behavior to adapt an optimal lifestyle.

- Teaching method

  The course will be delivered face to face, using lectures, case studies, conceptual learning, and problem-solving strategies.

  Face to face using: lectures; interacting games pre-lesson, throughout the lesson, or post lesson; case studies; conceptual learning; problem-solving

strategies; and reflective learning. Problem-solving and case studies will be introduced in class.

- Learning outcomes

Upon course completion, nurses will be able to:

1) Assess the educational needs of patients with hypertension attending the Primary Health Care Center.
2) Classify the optimal self-care activities that hypertensive patients may adopt to manage their hypertension.
3) Design an individual plan of care using the hypertension patient knowledge assessment tool (Hypertension Knowledge-Level Scale- HK-LS tool) and self-care activity tool (Self-Care Activity Level Effects tool).
4) Discuss a motivational interview and goal setting technique when attending to the care of patients with hypertension to make positive changes in their life through using the motivational interviewing and goal setting session tool.

- Course Content

Unit I: Community Assessment

1) Understanding Social Health Problems Affecting Hypertension Management
2) Sustainable Development Goals
3) Needs Assessment and Theoretical Considerations of Needs

4) Community Diagnosis

Unit II: Hypertension, Self-care, and Hypertension Disease Management

5) Hypertension
6) Health Promotion Models: Health Belief Model and Orem Self-care Model of Nursing
7) Self-care Management and Hypertension Self-care Practices
8) Patient Knowledge tool (Hypertension Knowledge- Level Scale- HK-LS tool) and Self-care Activity Tool (Self-Care Activity Level Effects tool)

Unit III: Introducing Change through Motivational Interviewing and Goal Setting

9) Change
10) Motivational Interviewing and Goal Setting

- Course Schedule

Week Number, Date, and Time	**Unit and Topic**	**Class Games and Class Activities**	**Assessment**
-Week 1 -Monday, March 6, 2023 -12 pm-2 pm	**Unit I: Community Assessment** **1.** Understanding Social Health Problems Affecting Hypertension Management **2.** Sustainable Development Goals	-2 Interacting Class Games	-4 Interacting Class Games -Focused Assessment and analysis of a Population and the

-Week 1 - Wednesday, March 8, 2023 -12 pm-2:30 pm	**Unit I: Community Assessment** **3.** Needs Assessment and Theoretical Considerations of Needs **4.** Community Diagnosis	-2 Interacting Class Games -Focused Assessment and analysis of a Population and the Health Care Delivery Problem related to Hypertension	Health Care Delivery Problem related to Hypertension -OSCE -Final Exam
-Week 2 -Monday, March 13, 2023 -12 pm-2 pm	**Unit II: Hypertension, Self-care, and Hypertension Disease Management** **5.** Hypertension **6.** Health Promotion Models: Health Belief Model and Orem Self-care Model of Nursing	-2 Interacting Class Games	-4 Interacting Class Games -Case Studies -OSCE -Final Exam

-Week 2 - Wednesday, March 15, 2023 -12 pm-2:30 pm	**Unit II: Hypertension, Self-care, and Hypertension Disease Management** **7.** Self-care Management and Hypertension Self-care Practices **8.** Patient Knowledge tool (Hypertension Knowledge- Level Scale- HK-LS tool) and Self-care Activity Tool (Self-Care Activity Level Effects tool)	-2 Interacting Class Games -Case Studies	
-Week 3 -Monday, March 20, 2023 -12 pm-2 pm	**Unit III: Introducing Change through Motivational Interviewing and Goal Setting** **9.** Change **10.** Motivational Interviewing and Goal Setting	-2 Interacting Class Games	-2 Interacting Class Games -Reflection Journal -OSCE -Final Exam
-Week 3 - Wednesday, March 22, 2023	**Unit III: Introducing Change through Motivational Interviewing and Goal Setting** -Applying Motivational Interviewing and Goal Setting strategies with real hypertensive patients	-Case Studies -Reflection Journal	

-12 pm-2:30 pm			
-Week 4 -Monday, March 27, 2023 -12 pm-2 pm	**Objective Structured Clinical Examination (OSCE)**		
-Week 4 - Wednesday, March 29, 2023 -12 pm-2 pm	**Final Exam**		

Table 4. Class Schedule

In this course, in the first 3 weeks, each session will consist of two topics, each presented in 45 minutes period and a 10 minute break in between. The first topic will be from 12 pm to12:45 pm, followed by a break from 12:45 pm to 12:55 pm, and the second topic presented from 12:55 pm to 1:40 pm. Each session will contain two interacting games that will take 20 minutes, from 1:40 pm till 2 pm. Moreover, each Wednesday from 2 pm till 2:30pm a class activity will be represented, and each nurse will be

responsible in participating in these games and activities. The last week - exam week- will be Monday March 27 (OSCE) and Wednesday March 29 (final exam) from 12 pm- 2 pm.

An example of a topic in a session is Self-care Management and Hypertension Self-care Practices topic, which is the seventh topic in this course that is part of Unit II- Hypertension, Self-care, and Hypertension Disease Management (Appendix V). This topic is the first topic that will be presented on Wednesday, March 15, 2023 that will be presented over 45 minutes. Learning objectives for the first topic in this session is that by the end of this 45 minutes topic, the learners will be able to recognize self-care definition, types, concepts, and principles; classify provider's role in self-care and determinants jeopardizing self-care management; and identify hypertension self-care practices (Appendix V).

- Assessment of Learning Outcomes and Assignments

  In order to complete the course, the passing grade is 70 over 100. Nurses must have 70 over 100 on the total grade to be part of the program. The assessment of leaning outcomes will be elaborate in the evaluation of the program (pages 72 till 80).

- Participation in the Session through Interacting Games: Grading rubric is 10% from total grade and present in Appendix VI.
- Class Activities: Total Grading Rubrics 30%
  - **Class Activity 1: Focused Assessment and Analysis of a Population and the Health Care Delivery Problem related to Hypertension (10%)**

Grading rubric 10%, Appendix VII/ Date: Wednesday, March 15, 2023/ 2 pm- 2:30 pm.

- **Class Activity 2: Case Study as Group Work (10%)**

Grading rubric 10%, Appendix VIII/ Date: Wednesday, March 22, 2023/ 2 pm- 2:30 pm.

- **Class Activity 3: Reflection Journal (10%)**

Grading rubric 10%, Appendix IX/ Date: Wednesday, March 29, 2023/ 2 pm- 2:30 pm.

- Objective Structured Clinical Examination (OSCE)

Grading rubric 25%, Appendix X/ Date and time: Monday, March 27, 2023- 12 pm till 2 pm

- Final Exam

Grading rubric 35%, Appendix XI/ Date and time: Wednesday, March 29, 2023- 12 pm till 2 pm.

ii. Patients' Visits

After course completion and meeting with the doctor, program is ready to start with patients' visits. The program will start accepting patients' visits from April till October 2023.

The patient's visit will start by asking the patient about the demographic information, background, medical history, and lifestyle related to blood pressure, and current health state that are presented in Appendix XII. Then the team will ask the patient questions related to hypertension self-care activity presented in Appendix XIII, as medication adherence, blood pressure measurement, diet practices, physical activity, and smoking. The questions in Appendix XII and XIII will be translated to Arabic before

asking the patients. After that, to ensure that all the criteria for patient's visit (Appendix III) are met and if the staff are compliant with the policy (Appendix II), a checklist with the elements of that policy and criteria of patient's visit will be filled by the staff throughout the visit. This checklist is presented in Appendix XIV. Then, the nurse measures vital signs and body mass index of the patient. After that the nurse and the doctor conduct a focused physical exam for the hypertensive patient during the regular physical exam (Appendix III). Then, the doctor will recommend laboratory and other diagnostic testing. Then when the doctor diagnoses the patient with hypertension, the team (doctor, nurse, and community nurse) will develop and discuss treatment plan with the patient. A follow up visit will be scheduled accordingly (Appendix III). The follow up visits are:

- After 1 year if normal blood pressure
- After 3-6 months for patients with elevated blood pressure using non-pharmacological therapy
- After 3-6 months for patients with stage one hypertension and their clinical Atherosclerotic Cardiovascular Disease (ASCVD) or estimated 10 years Cardiovascular Disease (CVD) risk less than 10% using non-pharmacological therapy
- After 1 months for patients with stage one hypertension and their clinical ASCVD or estimated 10 years CVD risk greater than or equal to 10% using non-pharmacological therapy and antihypertensive medication and patients with stage two hypertension using non-pharmacological therapy and antihypertensive medication

In addition to this, in the first visit and after assessment, diagnosis, treatment plan, and assigning next appointment for follow up, one-on-one education to the hypertensive patients will be done by the community nurse. The outline of this hypertension educational session are presented in Appendix XV. When the education is done, the nurse will continue filling the hypertension education part in the policy and protocol observation checklist- Appendix XIV to be added to the patient record file as a documentation proof. To note that before starting the education, a pretest will be conducted to each adult hypertensive patient participating in this program. This pretest assesses previous knowledge on hypertension.

A pre and post-test will be used to evaluate the success of the education that will be provided to the patients (Appendix XVI- Pre- and Posttest based on Hypertension Knowledge-Level Scale (HK-LS)). The time allocated to the pre-post-tests is 10 minutes each. The tool is based on the Hypertension Knowledge-Level Scale (HK-LS). These tests will be translated into Arabic and tested for validity. Patient's accepting to fill the questionnaire will be considered a consent from the patients. After the educational session finishes and after filling the posttest, educational handouts will be given to the patient to keep it with him. These educational hand-outs will include a summary of the education given in both Arabic and English languages. Also, posters will be hanged inside the PHCC clinic halls and waiting rooms to inform patients about the importance of hypertension management. The posters will be in both Arabic and English languages. A meeting will be set with the graphic designer of the NGOs that are supporting the PHCC

for creating the poster and educational hand-outs. That's why I didn't present educational handout and poster design as an appendix.

Before the patient leaves from the clinic, a blood pressure handout (Appendix XVII) will be given to the patient to fill it at home after measuring his blood pressure two times a day. This form will be brought by the patient to the clinic in the next visit.

Finally, motivational interviewing and goal setting sessions will be provided to the patients from the first visit and then every month until patient's self-care activities (smoking, diet, and alcohol) improve. Motivational interviewing and goal setting sessions are a powerful evidence-based techniques that aid patients to talk themselves into making positive changes in their lives. That's how their self-care activities change. These sessions are presented in Appendix XVIII and include:

- A preparatory and elicited change talk (patients' desires on managing there self-care practices, ability to change, reasons for changing, needs for change, querying extremes of the results, and looking back and forward on their lifestyles an health)
- A goal setting plan (goal, reality, options available, and ways to complete plan of action)

Each patient will schedule a motivational interviewing and goal setting sessions every month with the community nurse to monitor their progress in the lifestyle changes. The community nurse must document the progress of the patient according to the document in each session to compare the lifestyle progress and decisions.

With respect to the follow up visits, the nurse will ask the patient questions related to hypertension self-care activity presented in Appendix XIII and update the policy and protocol observation checklist (Appendix XIV). The doctor will re-evaluate the patient

with the community nurse, and then he will check if his/her medication needs to be replaced with a lower dose, higher dose, or same medication and if the patient needs to repeat laboratory studies or images.

On the other hand, for improving the quality of the program, a meeting will be held every month with the program's team that are working in the PHCC. This meeting includes asking the team short open-ended questions about the policy application to revise and improve the policy and protocols and update them. The questions that will be asked in these meetings are presented in Appendix XIX. Also, in this meeting, the team will use the ACIC tool to monitor the program's progress.

c. Developing Specific Plans for Program Activities

To start with, a major step to take when developing plans for program activities is to set a Gantt chart. The Gantt chart provides a complete knowledge of a project's timeline in a clear pathway (Lee & Shvetsova, 2019). It guides the task of interrelationship. Also, it includes a summary of the tasks of the program objectives in a timeframe. By using this chart, I am using the resources without overloading people in the process. Thus, by properly managing my resources, my program is more potentially completed on time. The Gantt chart is presented in Appendix XX. In order to let all the hypertensive patients in PHCC be engaged in the program from the beginning (April) and be properly followed up, patients are sorted according to their first appointment in April. Patients who are scheduled in week of April 3 (Monday 3 to Friday 7) are group A, those who are in week of April 10 (Monday 10 to Friday 14) are group B, those who are scheduled in week of April 17 (Monday 17 to Friday 21) are group C, and those who are scheduled in week of April 24 (Monday 24 to Friday 28) are group D (Appendix XX).

d. Establishing a Mechanism for Program Management

This step is all about having indicators that would help in monitoring the progress of the program over time, cost, and performance. These indicators will help creating advancement towards the program. Moreover, the compliance to the hypertension policy and protocols is an important indicator of program performance. Also, another indicator is the self-care practices and blood pressure measurements during the program. In that case, for the sustainability of the program at PHCC, having a checklist (protocols, background and assessment, pre-and post-tests, and modified hypertensive self-care activity level effects), and the ACIC tool that will help in knowing what is the process to go through whenever this program has to be implemented is thus needed for this sustainability.

e. Putting the Plans into Action

In order to put plans into action, the change agent (myself in this program) has to keep in mind that I am supposed to be a leader who stimulates and guides the change process, believes that the change is critical, always be persistent to push the innovation ahead regardless of roadblocks, have good communication skills, and deals with conflict in a constructive manner. For putting plans into action, it is necessary for me to understand the importance of culture—the culture of our organization and the culture of the affected communities and stakeholders. I also must make sure that the goals and strategies align with commonly held values, norms, and beliefs because plans that run counter to values, norms, and beliefs will be ignored. These plans must be inspiring. The team and my planning efforts should seek to make great achievements so that we can make a

difference, and so that the hypertensive patients will do the hard work to put the plan into action.

Moreover, it is important to have a team that is working together based on policy and protocols to meet the needs of the patients. We must be comfortable with revising our plans in the face of changing conditions and finding alternative solutions and move forward. Plans should not be static documents. Rather, they need to reflect the changes in our operating environment. And lastly, we must monitor our plans, evaluate our progress toward achievement, and hold ourselves and others accountable for success and failure. When we accomplish these tasks, we create an environment that results in our plans begin put into action.

2. Monitoring the Plan

Even with good implementation planning, things can go wrong and can deviate from the proposed plan. Monitoring is the systematic collection of data that are analyzed in order to identify measures to improve the process of implementation. Moreover, monitoring is important to save wasting time by periodically checking the progress of work and by showing a warning system to identify factors that can lead to the success or failures of the plan, also to resolve conflict as they arise, and to identify lagging areas requiring timely attention and constructive actions.

The indicators for monitoring are:

- Running on schedule (refer to Appendix XX- Gantt Chart)
- Running on the proposed cost by checking whether expenditures are in accordance with the proposed budget plan discussed previously.

- Input of stakeholders to the program through meetings that will include discussing the progress and results of the program.
- Input of team to the program through regular staff meetings and discussion (According to Appendix XIX results- team's feedback on the hypertension management policy and protocols).
- Patients' progress in the goal setting and motivational sessions every 1 month, patient's compliance and coming for follow up visits will be an indicator reflecting patients' intentions to change their old norms and control their blood pressure according to this program.
- The higher the number of hypertensive patients coming to the clinic to participate in the program, the higher the reach in the community.

For the process of monitoring, it is required for each patient to have the following in his file:

- Background and Assessment Asked to each Patient by the Team (Appendix XII)
- Policy and Protocol Observation Checklist that talks about what patient's visit should include (Appendix XIV)
- Hypertension Education Form presented in the previous checklist (Appendix XIV)
- Patient's Blood Pressure Log or Handout filled (Appendix XVII)
- Motivational Interviewing and Goal Setting Form (Appendix XVIII).

D. Program Evaluation

Evaluation is the systematic collection and analysis of data to test the program's effectiveness and the progress made towards achieving its goals and objectives. Program's evaluation is essential to improve the effectiveness and quality of the project.

The purpose of the program evaluation is to specify and clarify information about the assessment and interventions, to provide information about the overall intervention success, and to check if the program met the identified timeline set in the Gantt chart.

Moreover, the outcome or the effectiveness evaluation measures program's effects in the target population by assessing the progress in the patients' outcomes and the degree to which the program is having an effect on the hypertensive patients' behaviors. In other words, the program evaluation will show whether the program is being effective in meeting its objectives. Evaluation is achieved through measuring program effectiveness with respect to the Abey PHCC team and to the hypertensive patients that are in the program.

1. Measuring Program Effectiveness With Respect To the Primary Health Care Center Nurses

For evaluating the effectiveness of the Hypertension Disease Management Course, nurses must pass this course through participating in the sessions through games and activities, undergoing the Objective Structured Clinical Examination (OSCE), and completing the final exam. Nurses must have 70 over 100 on the total grade to complete the course and be part of the Hypertension Disease Management Program. The total grade is composed of participating in the sessions through 10 interacting games (10%), 3 class activities (30%), OSCE (25%), and final exam (35%).

a. Participation in the Session through interacting games
10%

Attending all the sessions is mandatory. All the sessions are linked to each other, and this course is only a 1 month (17.5 hours) course. Learners who miss over one fifth of course sessions will automatically be dropped from the course. In case of a clinical absence, a medical report from Primary Health Care Center only is required to justify the absence. All the learners when absent are held responsible for the missed session and/or assignment.

Class discussions are important through promoting and enhancing interactions and reflective thinking among learners and educator, and eventually aid them in better articulating their thoughts and misbelieves and in developing their expressive skills. All students are expected to actively participate in class.

Discussions include interacting games pre-lesson, throughout the lesson, or post lesson. There are 10 topics that will be discussed in class (week 1, week 2, and Monday in week 3). Each session will contain 2 topics. Thus, in each session, 2 games will be scheduled.

Participation grading rubric is 10% from total grade and presented in Appendix VI.

Furthermore, an example for the interacting games is the game of the topic that was mentioned before (Self-care Management and Hypertension Self-care Practices topic from Unit II- Hypertension, Self-care, and Hypertension Disease Management (Appendix IV) that will be represented on Wednesday, March 15, 2023). After this presentation, learners may ask questions related to this topic. Then, the interacting class game for this topic starts and is as follows: First the chart in figure 5 must be held on the wall in front of all the class. Then, the educator (myself) will present the box to each learner that is

filled with wrapped papers that contain the different aspects concepts from the PowerPoint (figure 6 and 7). Each learner must pick one wrapped paper and wait for all the students to have their paper. Then, I will pick a learner (learner 1) and ask him/her to choose from the class another learner (learner 2). The learner I chose (learner 1) will ask the learner he/she chose (learner 2) to define the aspect written on the wrapped paper of he/she (learner 1) is holding (figure 7). Then, learner 2 will pick learner 3 and will ask the learner he/she chose (learner 3) to define the aspect written on the wrapped paper of he/she (learner 2) is holding. This process continues until all the learners and aspects are addressed. After the learner answers, I will open the answers behind the topics (figure 8) and emphasize on the answer.

The interacting class game:

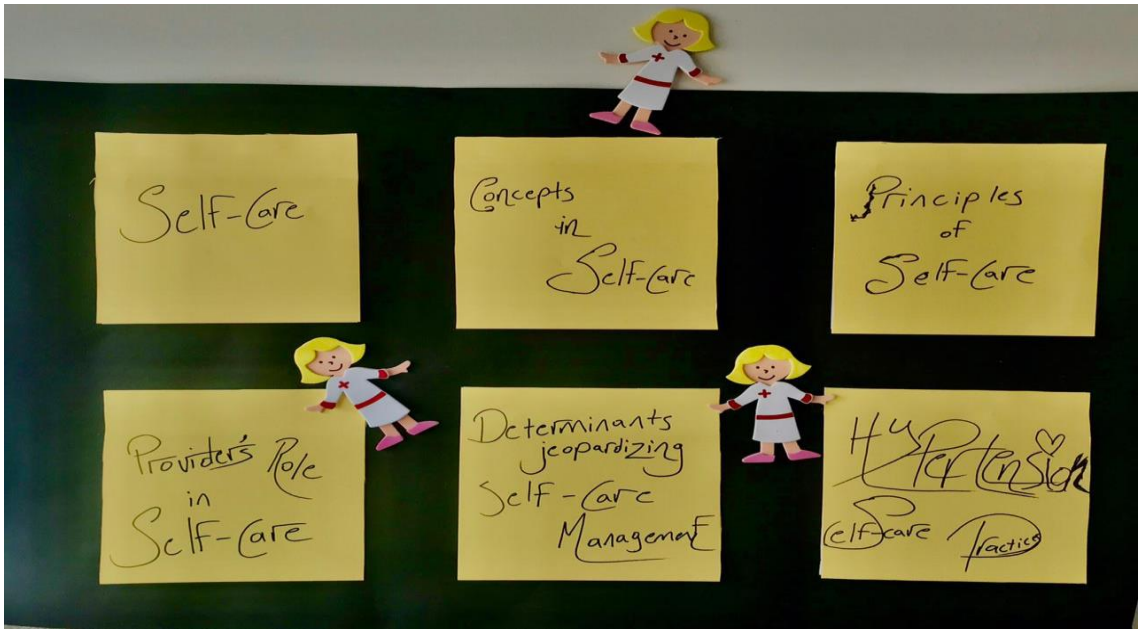


Figure 8. Self-care Management and Hypertension Self-care Practices Topics

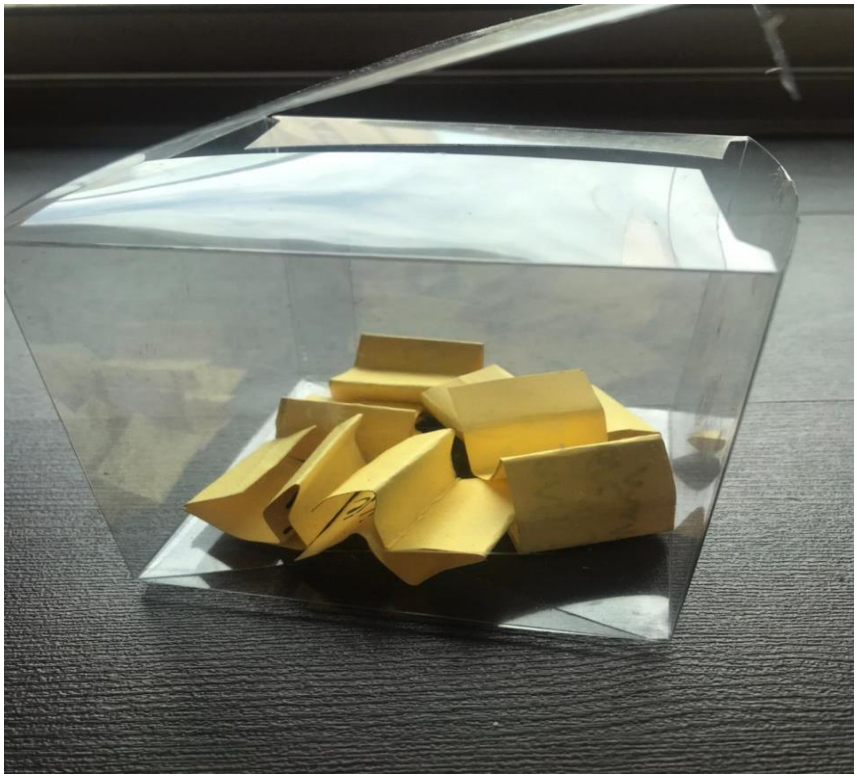


Figure 9. Box of Topics

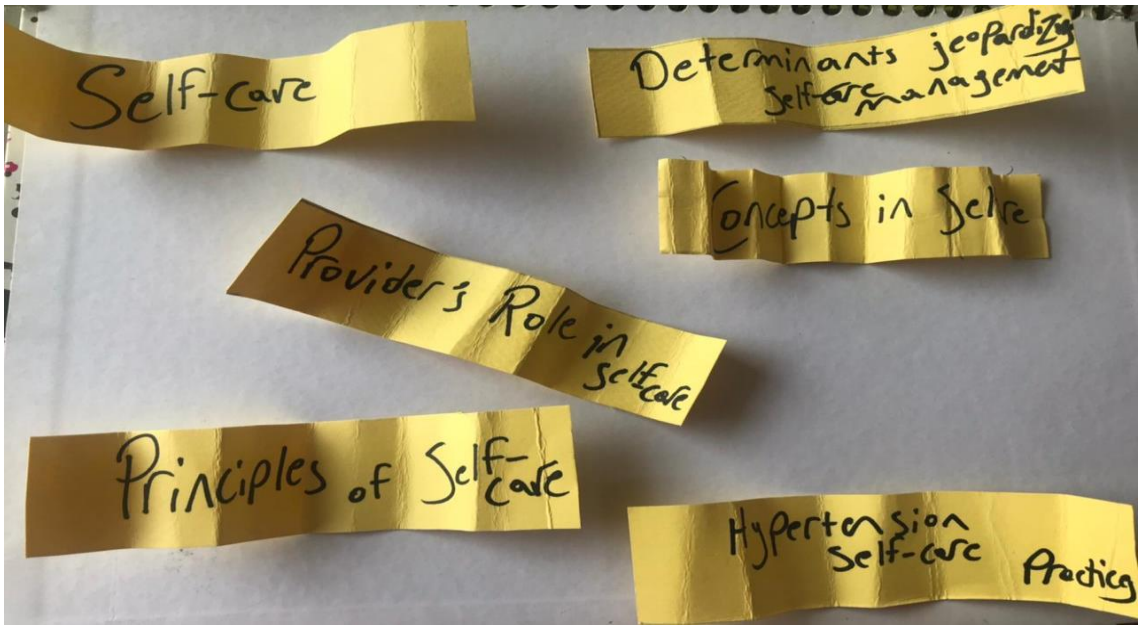


Figure 10. Topics on the Wrapped Papers

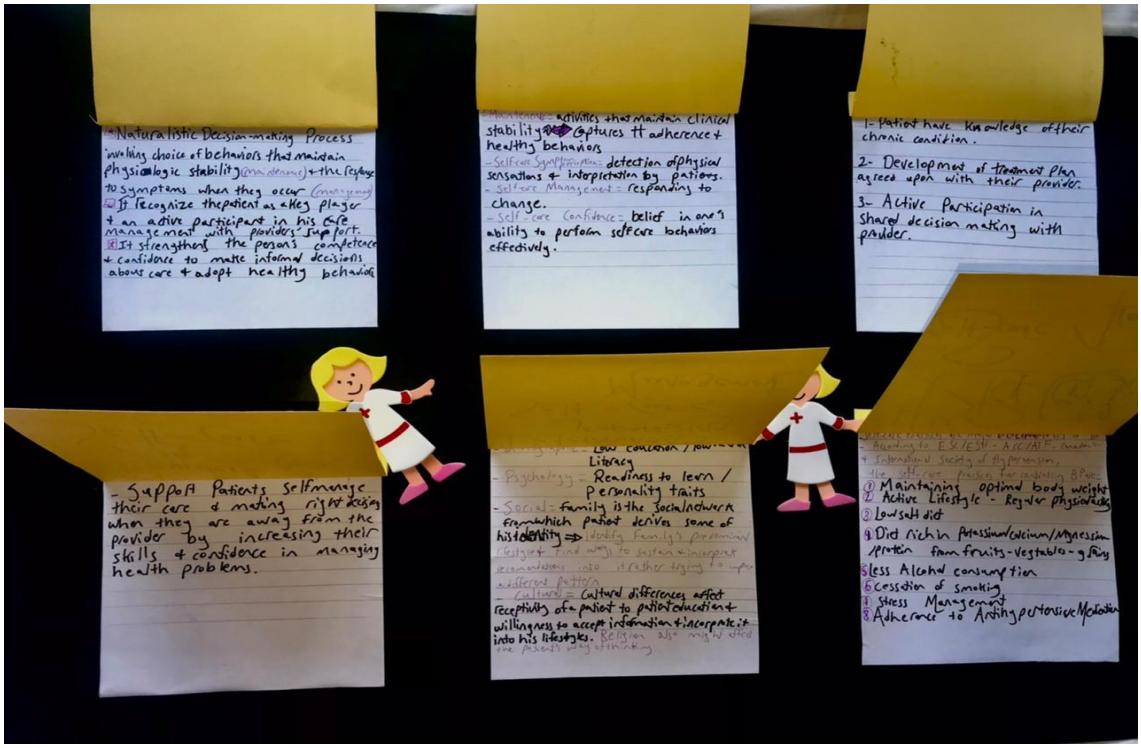


Figure 11. Topic Answers and Summary

b. Class Activities 30%

This course has 3 units (Community Assessment, Hypertension, Self-care, and Hypertension Disease Management, and Introducing Change through Motivational Interview and Goal Setting) - for each unit a class activity will be scheduled on Wednesday March 8, 15, and 22 from 2 pm till 2:30 pm. To note that, I will distribute the grading rubrics of the class activities and games in the first session in order to let the nurses have the opportunity to prepare for the class activities before if they want.

Total Grading Rubrics 30%.

- **Class Activity 1: Focused Assessment and Analysis of a Population and the Health Care Delivery Problem related to Hypertension (10%)**

Leaners are required to create a focused assessment of a population (PHCC and its region) and identify a health care delivery problem related to patients with hypertension using the four types of needs assessment as described in class. The chosen assessment must reflect healthcare needs to control hypertension of targeted population (hypertensive patients coming to the Primary Care Center). It is open book.

Grading rubric 10%, Appendix VII/ Date: Wednesday, March 8, 2023 / 2 pm- 2:30 pm.

- **Class Activity 2: Case Study as Group Work (10%)**

First learners will form groups of 3. Each group is expected to choose a hypertension case study that consists of hypertensive patient presenting to the healthcare facility (hospital, clinic, primary health care…) with uncontrolled blood pressure. The case study should be in English and selected from a nursing database. Then each group should formulate a table (2 columns and 7 rows). The first column include: Patient Information; History of the Presenting Illness; Chief Complaint; Diagnosis; Self-care Practices; Information you need more from the patient to know about his self-care practices; and Non-pharmacological management in your opinion

In the second column learners must fill the table from the case study and the last 2 topics are developed from material discussed in the session.

Grading rubric 10%, Appendix VIII/ Date: Wednesday, March 15, 2023/ 2 pm- 2:30 pm.

❖ **Class Activity 3: Reflective Journal (10%)**

Each learner must write one reflective writing. The learner must reflect on his/her previous experience on how did he/she assess the patient's self-care practices and how he/she followed up with the patient (how did the learner know if the patient changed their behavior in order to self-manage his/her hypertension) before being introduced to motivational interviewing and goal setting. Then, learners are expected to reflect on how did the motivational interviewing and goal setting approach did or will change the way of their thinking towards a better outcome (hypertension control).

Grading rubric 10%, Appendix IX/ Date: Wednesday, March 22, 2023/ 2 pm- 2:30 pm.

c. Objective Structured Clinical Examination (OSCE) 25%

The main purpose of this course is to prepare nurses to become experts in hypertension management. Theory alone is not enough, nurses must learn the right way in assessing the needs of hypertensive patients, their current self-care activities, and how to empower their patients in changing their behavior through motivational interviewing and goal setting. Objective Structured Clinical Examination will help me assess critical thinking, reasoning, application of knowledge, and judgment. OSCE will consist of case scenario where learner (individually) will assess the patient from the scenario, ask questions about patient's needs (all 4 needs must be well introduced and factors that might jeopardize patients current self-care behaviors) and self-care practices using the Patient Assessment tool (Assessment of Chronic Illness Care- ACIC tool) and the Self-care Activity Tool (Self-Care Activity Level Effects tool). Then the leaner is expected to present motivational interviewing and goal setting strategies for his/her patient from the

scenario. I will role-play the patient from the scenario and answer anything the learner wants from the patient.

Grading rubric 25%, Appendix X/ Date and time: Monday, March 27, 2023- 12 pm till 2 pm.

d. Final Exam 35%

The final exam will be held in class. Learners are expected to bring with them a pencil and show up on time. The exam will consist of 2 parts, first part consists of multiple choice questions, true or false questions, and matching questions. The second part will be to write an essay. The exam will cover all the concepts discussed in class.

Grading rubric 35%, Appendix XI/ Date and time: Wednesday, March 29, 2023- 12 pm till 2 pm.

Moreover, for evaluating the effectiveness of Hypertension Disease Management Patient's Visits and after putting the new hypertension management policy in place and providing nurses with the needed information about hypertension management through a course, I decided to use a qualitative approach to evaluate the effectiveness of these interventions (compliance with the policy and increase knowledge and confidence to provide hypertension education session and motivational interviewing and goal setting session). During the community assessment phase, I approached the team of Abey PHCC, observed, and asked them if there is a specialized policy or protocol for hypertension in their Chronic Disease Management Program, and if they have enough information for hypertension management. They said that there is no specific policy for hypertension disease, and that they don't have enough information to provide a thorough program.

Therefore, this is taken as a baseline information about the team before the beginning of our program intervention. After putting the new hypertension management policy (Appendix II) in place and after providing the nurses with the needed information about hypertension management through the Hypertension Disease Management course, a meeting will be held with the team of Abey PHCC that are working in the Hypertension Disease Management Program. This meeting includes asking the team short open-ended questions about the policy application to revise and improve the policy and protocols and update them. The questions that will be asked in these meetings are presented in Appendix XIX. I will ask the team short questions about their knowledge and confidence about hypertension and management.

After taking the consent of the team, I will be recording our meeting and try to include the exact team's responses between quotations. The answers will be then interpreted and summarized in a written report. Every one month meeting with staff will be held to assess if team are having difficulties applying the policy and protocols and if there is anything that can be improved (Appendix XIX).

2. Measuring Program Effectiveness with Respect to Hypertensive Patients

This step is measured through recalling the goals and setting for them standards, inclusion an exclusion criteria, independent variables, evaluation design, and outcomes. This step is summarized in the following tables. Goal one is reflected in table 1:

Goal 1	To increase awareness of hypertension by 90% among the newly diagnosed or previously diagnosed hypertensive adult patients at Primary Health Care Center that are participating in the program as measured by modified Hypertension Knowledge-Level Scale.

Objective Summary	To assess hypertensive patients' comprehension and understanding on hypertension by the Registered Nurse or Community Nurse at the Primary Health Care Center.
Standards	90% of the hypertensive participants will have a better understanding and comprehension on hypertension.
Inclusion and Exclusion Criteria	o Known to have hypertension or newly diagnosed o Living in surrounding area of the PHCC o Have no financial support o Adult patients
Independent Variables	o Age o Residency o Readiness and willingness of the patient to comprehend the information
Control Group	No control group, The patients are their own comparison group: measuring hypertension awareness pre-educational session by the modified Hypertension Knowledge-Level is considered as their baseline.
Evaluation Design	Quasi-Experimental (one group): Hypertensive adult patients at PHCC→Pretest→Program →Post-test.
Outcome Measures	Percentage of patients who have a post-test results different from pretest results on the awareness of hypertension in the first visit (Appendix XVI).

Table 5 Criteria of Measuring Effectiveness of Goal 1

To reach goal 2, the modified hypertension self-care activity level effect form will be asked to the patient at his first visit, and will be considered as his baseline information (Appendix XIII). So, at 6 months (end of the program), all patients will have a follow up visit as per the policy (Appendix II). In this visit, re-assessment will be done and the modified hypertension self-care activity level effect form will be re-asked to the patient. The difference in the self-care practices at baseline and at 6 months will show if this goal is reached or not. Also, for this goal to be reached, patient's blood pressure measurement at baseline and at 6 months will be checked and compared. This goal is reflected in the following table:

Goal 2	To increase the proportion of individuals who maintain normal blood pressure through self-care practices by 80% at Primary Health Care Center over 6 months as measured by Hypertension Self-Care Activity Level Effects tool.
Objective Summary	- To make certain that at least 80% of the hypertensive patients measure their blood pressure more frequently - 80% manage their antihypertensive medication and comply with medication regimens - 80% manage a healthy diet and maintain a regular physical activity - 50% of hypertensive adult smokers decrease their smoking at the Primary Health Care Center over six months.

	- 50% of hypertensive adult patients decrease their alcohol consumption at the Primary Health Care Center over six months of the program.
Standards	o 80% of the hypertensive participants will measure their blood pressure more frequently, comply with medication regimens, manage a healthy diet, and maintain a regular physical activity. o 50% of the hypertensive participants will decrease their smoking and alcohol habits.
Inclusion and Exclusion Criteria	o Known to have hypertension o Living in surrounding area of PHCC o Have no financial support o Adult patients
Independent Variables	o Age o Residency o Income o Availability of medication, blood pressure machine, and appropriate healthy food o Psychological state
Control Group	No control group, The patients are their own comparison group: measuring self-care practices pre-program and post-program after 6 months by the modified Hypertension Self-Care Activity Level Effects tool and measuring blood pressure are considered as their baseline.

Evaluation Design	Quasi-Experimental (one group): Hypertensive adult patients at PHCC→Self-care practices and blood pressure measurement at baseline→Program→Self-care practices and blood pressure measurement at 6 months of follow up.
Outcome Measures	➢ Percentage of patients who improved their self-care practice (Appendix XIII) ➢ Percentage of patients who had controlled blood pressure

Table 6 Criteria of Measuring Effectiveness of Goal 2

3. Measuring Program Effectiveness With Respect To the Hypertension Disease Management Training Program

The evaluation of goals 3 and 4 are represented in the below table.

Goal 3 and 4	**To improve the efficiency and effectiveness of the care provided at PHCC for HTN adult patients through creating Patient Registries and Follow up by Outreach** **To Form a Hypertension Disease Management Training Program related to American Heart Association Guidelines.**
Evaluation Design	Quasi-Experimental (one group): **ACIC tool pre-program at baseline** → Program → **ACIC tool post program after 6 months**

Outcome Measures	The **change of the level of support for chronic illness care** at baseline from **Basic support for chronic illness care (not reasonably good or fully developed) scoring 3** to **reasonably good support for chronic illness care scoring 6-8** or **fully developed chronic illness care scoring 9-11** according to ACIC tool after 6 months of the program.

Table 7 Criteria of Measuring Effectiveness of Goal 3 and 4

4. Sustaining the Program

Evaluation report will be summarizing the progress for each objective with improvement recommendations. If a discrepancy is noticed between the objectives and the outcomes, a program revision is then necessary. This evaluation report will be sent to the stakeholders (NGOs) to involve them in the evaluation (they will be involved in planning and implementation too). When the stakeholders are engaged in the program, they will support the sustainability of this program. Also, this program doesn't need a big budget to sustain. Even though, we must always have a backup plan for funding for the sustainability of this program.

Finally, a major step to take for sustaining the program is to always think about a marketing plan that will increase acceptance of the program and improve access to the target population. The first step is to gain approval from the PHCC for the marketing plan. The best approaches for introducing the program in my case are through flyers distributed in PHCC and its surrounding (in supermarkets, stores, and on walls all around the PHCC).

5. Feasibility of this program at Abey PHCC

At baseline, the team of Abey PHCC was approached, observed, and questioned. They said that there is no specific policy for HTN disease, and that they don't have enough information to provide a thorough program. After that, ACIC tool was filled resulting in Basic support for chronic illness care (scoring 3) (not reasonably good or fully developed). Moreover, the program doesn't need a big budget to be implemented. Also, patients are already coming every 1 month to the PHCC for getting their medications. Therefore, instead of just getting the medication, the patients will be seen for their motivational interviewing and goal setting sessions.

Finally, staff are engaged in the program through the monthly meeting discussing any concern, revising the protocols and policy, and filling the ACIC tool to check the change in the level of support for chronic illness care the program is providing.

CHAPTER IV

DISCUSSION, LIMITATIONS, AND CONCLUSION

A. Discussion

Certain socio-demographic and clinical factors such as older age, males, obese patients, low educational levels, and low income levels were associated with high odds of developing hypertension in Greater Beirut Area, Lebanon (Noubani, et al., 2018) Also, the major factors for hypertension in a sample across Lebanon by Farah, et al., (2016), in the local community of Byblos (Kanj, Khalil, M. Kossaify, and A. Kossaify, 2018), and in all six provinces (mohafazats) of Lebanon (Matar, et al., 2015) were low medication adherence, obesity, older age, male sex, and smoking. Also, hypertension awareness was lower in men and patients who have low income (Matar, et al., 2015).

Several research studies in United States of America, Canada, Europe, and Lebanon have found that blood pressure is controlled by self-care practices that help adjust modifiable factors that affect blood pressure, such as adhering to medication, maintaining a healthy body weight and waist circumference, scheduling routine exercises, eating a low salt diet with a decrease in alcohol consumption, ceasing smoking, and managing stress (Whelton, et al., 2018; Williams et al., 2018; Rabi et al., 2020; Leung et al., 2017; Unger, et al., 2020; Noubani, et al., 2018).

Moreover, studies have shown that people who participated in self-care of hypertension programs had better self-care behavior performance, controlled blood pressure, decreased waist circumference, and consistent anti-hypertensive medication adherence. Some examples on these models and programs are: community-based health promotion program (Wu, et al., 2012), nursing case management model (Mattei da Silva,

et al., 2020), nurses' counsel that emphasized on empowerment (Wraak, et al., 2015), elderly hypertension adoption education based on the health belief model (Khorsandi, Fekrizadeh, and Roozbahani, et al., 2017), self-management empowerment program for hypertensive rural older adults in South Korea (Shin, Kim, and Choi, 2016), nurses who got a counseling training (Drevenhorn, Bengtson, Nyberg, and Kjellgren, 2015), and Kaiser Permanente Northern California Hypertension program (Jaffe, Lee, Young, Sidney, and Go, 2013). All these programs improved self-care practices and thus blood pressure control among patients with hypertension.

In a study in the United States of America, an investigation of blood pressure trends, awareness, and management of hypertension from 1999 to 2010 included assessing current practice in the diagnosis and treatment of hypertension. The results from this landmark study indicated that even if hypertension awareness, control, and management improved, it was still deemed inadequate and since 2007 there was no improvement as explained in the below table(Guo, He, Zhang, and Walton, 2012).

HTN	**1999-2000**	**2001-2002**	**2003-2004**	**2005-2006**	**2007-2008**	**2009-2010**
Age-adjusted **Awareness** Rate	63.8(57.2–70.4)	63.7(60.0–67.3)	67.7(61.8–73.6)	69.2(64.6–73.8)	74.6(67.8–81.5)	74.0(68.6–79.4)
Age-adjusted **Control** Rate	27.5(22.6–32.4)	33.6(29.8–37.3)	36.6(29.3–43.9)	37.6(33.5–41.7)	46.1(40.4–51.9)	46.5(41.1–51.9)
Age-adjusted **Control in Management** Rate	46.5(38.6–54.5)	62.1(55.5–68.8)	63.4(56.0–70.8)	62.0(55.5–68.4)	70.5(64.9–76.1)	64.4(59.9–68.9)

Table 8. Age-adjusted Awareness, Control, and Control in Management Rate from 1999 to 2010 in the United States of America

The limitations in all these references share some similarities as the use of self-report instruments for certain variables that might lead to bias, the small size population, and the need of more time for follow up.

Finally, health inequity is a painful reality common in Lebanon especially in these harsh economic circumstances. Unfortunately, not all Lebanese people have the opportunity to attain their full health potential because of the presence of difficult circumstances (social, financial, and economic circumstances). Unfortunately, not all Lebanese people have the opportunity to attain their full health potential because of the presence of difficult circumstances (social, financial, and economic circumstances).

The Hypertension Disease Management Training Program helps the underprivileged community who are unable to afford medical services, have no coverage and health insurances, and lack appropriate knowledge and management for their wellbeing. They are in need for health services and guidance to improve their self-care measures on hypertension. The program enables them to take a more active role and be more competent managers of their health by increasing their knowledge regarding their disease condition guiding and supporting them to become active key players in their care management.

B. Limitations or the Anticipated Challenges

This proposed program is limited to 1 PHCC (Abey PHCC), which is a small size community (small sample size). If we are able to pilot this program successfully in Abey PHCC, then we can implement it in all primary health care centers. Therefore, we would prepare wider number of nurses to become qualified in hypertension management and thus helping greater numbers of hypertensive patients to control their blood pressure.

C. Conclusion

Hypertension Disease Management Training Program is a program that empowers nurses to become qualified in hypertension disease management and therefore, enable patients to manage their blood pressure, to have better outcomes by delaying micro-vascular and macro-vascular outcomes, and to improve their quality of life. Those nurses will help patients with hypertension take a more active role and be more competent managers of their health by increasing their knowledge regarding their disease condition (hypertension) and by becoming active key players in their own care management.

Moreover, there is no hypertension specific program in Lebanon that has been sustained. The Hypertension Disease Management Training Program will guide patients step by step in reaching their blood pressure target; moreover, healthcare professionals will provide the patients with a plan for health maintenance. For the sustainment of the program, each patient will be referred to the care of a cardiologist or nephrologist in the Abey PHCC for follow up in the future when the six months program finishes.

Last but not least, this program will provide the Abey underserved community with an opportunity to control their blood pressure, eventually decreasing the complications that may result from hypertension. This program will contribute to the elimination of health inequities in terms of blood pressure management in the near future.

APPENDIX I

ASSESSMENT OF CHRONIC ILLNESS CARE

Assessment of Chronic Illness Care
Version 3.5

Please complete the following information about you and your organization. This information will not be disclosed to anyone besides the ICIC/IHI team. We would like to get your phone number and e-mail address in the event that we need to contact you/your team in the future. Please also indicate the names of persons (e.g., team members) who complete the survey with you. Later on in the survey, you will be asked to describe the process by which you complete the survey.

Your name:	**Date:** _____/_____/_____ Month Day Year
Organization & Address:	**Names of other persons completing the survey with you:**
	1.
	2.
	3.
Your phone number: (_____) _ _ _ - _ _ _ _	**Your e-mail address:**

Directions for Completing the Survey

This survey is designed to help systems and provider practices move toward the "state-of-the-art" in managing chronic illness. The results can be used to help your team identify areas for improvement. Instructions are as follows:

1. **Answer each question** from the perspective of one physical site (e.g., a practice, clinic, hospital, health plan) that supports care for chronic illness.

   Please provide name and type of site (e.g., Group Health Cooperative/Plan) _____

2. **Answer each question** regarding how your organization is doing with respect to one disease or condition.

   Please specify condition _____

3. For each row, **circle the point value** that best describes the level of care that currently exists in the site and condition you chose. The rows in this form present key aspects of chronic illness care. Each aspect is divided into levels showing various stages in improving chronic illness care. The stages are represented by points that range from 0 to 11. The higher point values indicate that the actions described in that box are more fully implemented.

4. **Sum the points in each section** (e.g., total part 1 score), calculate the average score (e.g., total part 1 score / # of questions), and enter these scores in the space provided at the end of each section. Then sum all of the section scores and complete the average score for the program as a whole by dividing this by 6.

For more information about how to complete the survey, please contact:

Judith Schaefer, MPH **tel. 206.287.2077; Schaefer.jk@ghc.org** Improving
Chronic Illness Care
A National Program of the Robert Wood Johnson Foundation
Group Health Cooperative of Puget Sound
1730 Minor Avenue, Suite 1290
Seattle, WA 98101-1448

Part 1: Organization of the Healthcare Delivery System. Chronic illness management programs can be more effective if the overall system (organization) in which care is provided is oriented and led in a manner that allows for a focus on chronic illness care.

Components	Level D	Level C	Level B	Level A
Overall Organizational Leadership in Chronic Illness Care	...does not exist or there is a little interest.	...is reflected in vision statements and business plans, but no resources are specifically earmarked to execute the work.	...is reflected by senior leadership and specific dedicated resources (dollars and personnel).	...is part of the system's long term planning strategy, receive necessary resources, and specific people are held accountable.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Organizational Goals for Chronic Care	...do not exist or are limited to one condition.	...exist but are not actively reviewed.	...are measurable and reviewed.	...are measurable, reviewed routinely, and are incorporated into plans for improvement.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Improvement Strategy for Chronic Illness Care	...is ad hoc and not organized or supported consistently.	...utilizes ad hoc approaches for targeted problems as they emerge.	...utilizes a proven improvement strategy for targeted problems.	...includes a proven improvement strategy and uses it proactively in meeting organizational goals.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Incentives and Regulations for Chronic Illness Care	...are not used to influence clinical performance goals.	...are used to influence utilization and costs of chronic illness care.	...are used to support patient care goals.	...are used to motivate and empower providers to support patient care goals.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Senior Leaders	...discourage enrollment of the chronically ill.	...do not make improvements to chronic illness care a priority.	...encourage improvement efforts in chronic care.	...visibly participate in improvement efforts in chronic care.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Benefits	...discourage patient selfmanagement or system changes.	...neither encourage nor discourage patient selfmanagement or system changes.	...encourage patient selfmanagement or system changes.	...are specifically designed to promote better chronic illness care.
Score	0 1 2	3 4 5	6 7 8	9 10 11

Total Health Care Organization Score _____ Average Score (Health Care Org. Score / 6) _____

Part 2: Community Linkages. Linkages between the health delivery system (or provider practice) and community resources play important roles in the management of chronic illness.

Components	Level D	Level C	Level B	Level A
Linking Patients to Outside Resources	…is not done systematically.	…is limited to a list of identified community resources in an accessible format.	…is accomplished through a designated staff person or resource responsible for ensuring providers and patients make maximum use of community resources.	… is accomplished through active coordination between the health system, community service agencies and patients.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Partnerships with Community Organizations	…do not exist.	…are being considered but have not yet been implemented.	…are formed to develop supportive programs and policies.	…are actively sought to develop formal supportive programs and policies across the entire system.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Regional Health Plans	…do not coordinate chronic illness guidelines, measures or care resources at the practice level.	…would consider some degree of coordination of guidelines, measures or care resources at the practice level but have not yet implemented changes.	…currently coordinate guidelines, measures or care resources in one or two chronic illness areas.	…currently coordinate chronic illness guidelines, measures and resources at the practice level for most chronic illnesses.
Score	0 1 2	3 4 5	6 7 8	9 10 11

Total Community Linkages Score _____ Average Score (Community Linkages Score / 3) _____

Part 3: Practice Level. Several components that manifest themselves at the level of the individual provider practice (e.g. individual clinic) have been shown to improve chronic illness care. These characteristics fall into general areas of self-management support, delivery system design issues that directly affect the practice, decision support, and clinical information systems.

Part 3a: Self-Management Support. Effective self-management support can help patients and families cope with the challenges of living with and treating chronic illness and reduce complications and symptoms.

Components	Level D	Level C	Level B	Level A
Assessment and Documentation of Self-Management Needs and Activities	…are not done.	…are expected.	…are completed in a standardized manner.	…are regularly assessed and recorded in standardized form linked to a treatment plan available to practice and patients.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Self-Management Support	…is limited to the distribution of information (pamphlets, booklets).	…is available by referral to selfmanagement classes or educators.	…is provided by trained clinical educators who are designated to do self-management support, affiliated with each practice, and see patients on referral.	…is provided by clinical educators affiliated with each practice, trained in patient empowerment and problem-solving methodologies, and see most patients with chronic illness.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Addressing Concerns of Patients and Families	…is not consistently done.	…is provided for specific patients and families through referral.	…is encouraged, and peer support, groups, and mentoring programs are available.	…is an integral part of care and includes systematic assessment and routine involvement in peer support, groups or mentoring programs.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Effective Behavior Change Interventions and Peer Support	…are not available.	…are limited to the distribution of pamphlets, booklets or other written information.	…are available only by referral to specialized centers staffed by trained personnel.	…are readily available and an integral part of routine care.
Score	0 1 2	3 4 5	6 7 8	9 10 11

Total Self-Management Score_____ Average Score (Self Management Score / 4) _____

Part 3b: Decision Support. Effective chronic illness management programs assure that providers have access to evidence-based information necessary to care for patients--decision support. This includes evidence-based practice guidelines or protocols, specialty consultation, provider education, and activating patients to make provider teams aware of effective therapies.

Components	Level D	Level C	Level B	Level A
Evidence-Based Guidelines	…are not available.	…are available but are not integrated into care delivery.	…are available and supported by provider education.	…are available, supported by provider education and integrated into care through reminders and other proven provider behavior change methods.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Involvement of Specialists in Improving Primary Care	…is primarily through traditional referral.	…is achieved through specialist leadership to enhance the capacity of the overall system to routinely implement guidelines.	…includes specialist leadership and designated specialists who provide primary care team training.	…includes specialist leadership and specialist involvement in improving the care of primary care patients.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Provider Education for Chronic Illness Care	…is provided sporadically.	…is provided systematically through traditional methods.	…is provided using optimal methods (e.g. academic detailing).	…includes training all practice teams in chronic illness care methods such as population-based management, and self-management support.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Informing Patients about Guidelines	…is not done.	…happens on request or through system publications.	…is done through specific patient education materials for each guideline.	…includes specific materials developed for patients which describe their role in achieving guideline adherence.
Score	0 1 2	3 4 5	6 7 8	9 10 11

Total Decision Support Score_____ Average Score (Decision Support Score / 4) _____

Part 3c: Delivery System Design. Evidence suggests that effective chronic illness management involves more than simply adding additional interventions to a current system focused on acute care. It may necessitate changes to the organization of practice that impact provision of care.

Components	Level D	Level C	Level B	Level A
Practice Team Functioning	...is not addressed.	...is addressed by assuring the availability of individuals with appropriate training in key elements of chronic illness care.	...is assured by regular team meetings to address guidelines, roles and accountability, and problems in chronic illness care.	...is assured by teams who meet regularly and have clearly defined roles including patient selfmanagement education, proactive follow-up, and resource coordination and other skills in chronic illness care.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Practice Team Leadership	...is not recognized locally or by the system.	...is assumed by the organization to reside in specific organizational roles.	...is assured by the appointment of a team leader but the role in chronic illness is not defined.	...is guaranteed by the appointment of a team leader who assures that roles and responsibilities for chronic illness care are clearly defined.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Appointment System	...can be used to schedule acute care visits, follow-up and preventive visits.	...assures scheduled follow-up with chronically ill patients.	...are flexible and can accommodate innovations such as customized visit length or group visits.	...includes organization of care that facilitates the patient seeing multiple providers in a single visit.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Follow-up	...is scheduled by patients or providers in an ad hoc fashion.	...is scheduled by the practice in accordance with guidelines.	...is assured by the practice team by monitoring patient utilization.	...is customized to patient needs, varies in intensity and methodology (phone, in person, email) and assures guideline follow-up.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Planned Visits for Chronic Illness Care	...are not used.	...are occasionally used for complicated patients.	...are an option for interested patients.	...are used for all patients and include regular assessment, preventive interventions and attention to self-management support.
Score	0 1 2	3 4 5	6 7 8	9 10 11

Continuity of Care	...is not a priority.	...depends on written communication between primary care providers and specialists, case managers or disease management	...between primary care providers and specialists and other relevant providers is a priority but not implemented systematically.	...is a high priority and all chronic disease interventions include active coordination between primary care, specialists and other relevant
Components	**Level D**	**Level C**	**Level B**	**Level A**
Score	0 1 2	companies. 3 4 5	6 7 8	groups. 9 10 11

(From Previous Page)

Total Delivery System Design Score_____ Average Score (Delivery System Design Score / 6) _____

Part 3d: Clinical Information Systems. Timely, useful information about individual patients and populations of patients with chronic conditions is a critical feature of effective programs, especially those that employ population-based approaches.[7,8]

Components	Level D	Level C	Level B	Level A
Registry (list of patients with specific conditions)	...is not available.	...includes name, diagnosis, contact information and date of last contact either on paper or in a computer database.	...allows queries to sort subpopulations by clinical priorities.	...is tied to guidelines which provide prompts and reminders about needed services.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Reminders to Providers	...are not available.	... include general notification of the existence of a chronic illness, but does not describe needed services at time of encounter.	...includes indications of needed service for populations of patients through periodic reporting.	...includes specific information for the team about guideline adherence at the time of individual patient encounters.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Feedback	...is not available or is non-specific to the team.	...is provided at infrequent intervals and is delivered impersonally.	...occurs at frequent enough intervals to monitor performance and is specific to the team's population.	...is timely, specific to the team, routine and personally delivered by a respected opinion leader to improve team performance.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Information about Relevant Subgroups of Patients Needing Services	...is not available.	...can only be obtained with special efforts or additional programming.	...can be obtained upon request but is not routinely available.	...is provided routinely to providers to help them deliver planned care.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Patient Treatment Plans	...are not expected.	...are achieved through a standardized approach.	...are established collaboratively and include self management as well as clinical goals.	...are established collaborative an include self management as well as clinical management. Follow-up occurs and guides care at every point of service.
Score	0 1 2	3 4 5	6 7 8	9 10 11

Total Clinical Information System Score_____ Average Score (Clinical Information System Score / 5) _____

Integration of Chronic Care Model Components. Effective systems of care integrate and combine all elements of the Chronic Care Model; e.g., linking patients' self-management goals to information systems/registries.

Components	Little support	Basic support	Good support	Full support
Informing Patients about Guidelines	…is not done.	…happens on request or through system publications.	…is done through specific patient education materials for each guideline.	…includes specific materials developed for patients which describe their role in achieving guideline adherence.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Information Systems/Registries	…do not include patient selfmanagement goals.	…include results of patient assessments (e.g., functional status rating; readiness to engage in selfmanagement activities), but no goals.	…include results of patient assessments, as well as selfmanagement goals that are developed using input from the practice team/provider and patient.	…include results of patient assessments, as well as selfmanagement goals that are developed using input from the practice team and patient; and prompt reminders to the patient and/or provider about follow-up and periodic re-evaluation of goals.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Community Programs	…do not provide feedback to the health care system/clinic about patients' progress in their programs.	…provide sporadic feedback at joint meetings between the community and health care system about patients' progress in their programs.	…provide regular feedback to the health care system/clinic using formal mechanisms (e.g., Internet progress report) about patients' progress.	…provide regular feedback to the health care system about patients' progress that requires input from patients that is then used to modify programs to better meet the needs of patients.
Score	0 1 2	3 4 5	6 7 8	9 10 11
Organizational Planning for Chronic Illness Care	…does not involve a populationbased approach.	…uses data from information systems to plan care.	…uses data from information systems to proactively plan population-based care, including the development of self-management programs and partnerships with community resources.	…uses systematic data and input from practice teams to proactively plan population-based care, including the development of selfmanagement programs and community partnerships, that include a built-in evaluation plan to determine success over time.
			6 7 8	
Components	Little support	Basic support	Good support	Full support
Score	0 1 2	3 4 5		9 10 11
Routine follow-up for appointments, patient assessments and goal planning	…is not ensured.	is sporadically done, usually for appointments only.	is ensured by assigning responsibilities to specific staff (e.g., nurse case manager).	is ensured by assigning responsibilities to specific staff (e.g., nurse case manager) who uses the registry and other prompts to coordinate with patients and the entire practice team.
	0 1 2	3 4 5	6 7 8	9 10 11
Guidelines for chronic illness care	…are not shared with patients.	…are given to patients who express a specific interest in selfmanagement of their condition.	…are provided for all patients to help them develop effective selfmanagement or behavior modification programs, and identify when they should see a provider.	…are reviewed by the practice team with the patient to devise a selfmanagement or behavior modification program consistent with the guidelines that takes into account patient's goals and readiness to change.
	0 1 2	3 4 5	6 7 8	9 10 11

Total Integration Score (SUM items): _____ **Average Score (Integration Score/6) =** _____

Briefly describe the process you used to fill out the form (e.g., reached consensus in a face-to-face meeting; filled out by the team leader in consultation with other team members as needed; each team member filled out a separate form and the responses were averaged).

Description: _____

_____

Scoring Summary
(bring forward scoring at end of each section to this page)

Total Org. of Health Care System Score	_____
Total Community Linkages Score	_____
Total Self-Management Score	_____
Total Decision Support Score	_____
Total Delivery System Design Score	_____
Total Clinical Information System Score	_____
Total Integration Score	_____
Overall Total Program Score (Sum of all scores)	_____
Average Program Score (Total Program /7)	_____

What does it mean?

The ACIC is organized such that the highest "score" (an "11") on any individual item, subscale, or the overall score (an average of the six ACIC subscale scores) indicates optimal support for chronic illness. The lowest possible score on any given item or subscale is a "0", which corresponds to limited support for chronic illness care. The interpretation guidelines are as follows:

Between "0" and "2" = limited support for chronic illness care
Between "3" and "5" = basic support for chronic illness care
Between "6" and "8" = reasonably good support for chronic illness care
Between "9" and "11" = fully developed chronic illness care

It is fairly typical for teams to begin a collaborative with average scores below "5" on some (or all) areas the ACIC. After all, if everyone was providing optimal care for chronic illness, there would be no need for a chronic illness collaborative or other quality improvement programs. It is also common for teams to initially believe they are providing better care for chronic illness than they actually are. As you progress in the Collaborative, you will become more familiar with what an effective system of care involves. You may even notice your ACIC scores "declining" even though you have made improvements; this is most likely the result of your better understanding of what a good system of care looks like. Over time, as your understanding of good care increases and you continue to implement effective practice changes, you should see overall improvement on your ACIC scores.

APPENDIX II

HYPERTENSION DISEASE MANAGEMENT PROGRAM POLICY

Policy:

1. All hypertensive adult patients seeking the care of primary health care center shall **be assessed and diagnosed** as per the Written Protocols for Patients Visit- Appendix III**.**
2. Hypertension Management Program team shall **develop and discuss treatment plan** with each hypertensive adult patient seeking their health care.
3. Hypertension Management Program team must **follow-up with the hypertensive patients** according to the Written Protocols for Patients Visit- Appendix III.
4. In the first visit, team must have a one-one education with the patient according to his knowledge about hypertension management.
5. Community nurse must provide the patient a motivational session and goal setting for his/her lifestyle self-care activities after finishing assessment, diagnosis, discussing the plan, and providing education.

Purpose:

To ensure that every hypertensive patient participating in the Hypertension Management Program is managed well and according to a written policy and protocol to have a standard hypertensive management outcome.

Summary of the Procedure: (full procedure is Written Protocols for Patients Visit- Appendix III)

Steps for Patient's Visit:

1. Step 1**: Build a relationship with the patient.**

2. Step 2: **Assess, measure, and diagnose the patient.**

    - During the assessment phase, team will document:
        - The **Background and Assessment Asked to each Patient by the Team**- Appendix XII.
        - The **Modified Hypertension Self-Care Activity Level** Effects for each hypertensive patient in the first patient visit and **re-assess and document self-care activities** when the program ends after 6 months- Appendix XIII.

3. Step 3: **Talk about patient's blood pressure.**

4. Step 4: **Talk about patient's medications.**

5. Step 5: **Develop and discuss treatment plan.**

6. Step 6: **Follow-up with the patient.**

7. Step 7: **Refer or consult when necessary.**

APPENDIX III

WRITTEN PROTOCOLS FOR PATIENTS VISIT

Steps for Patient's Visit:

1. Step 1**: Build a relationship with the patient.**

2. Step 2: **Assess, measure, and diagnose the patient**:
   - Check patients **vital signs and Body Mass Index**
   - Take the **medical and surgical history** of the patient
   - **Conduct a Focused Physical Exam for the Hypertensive Patient during the regular physical exam** (Kumar, O'Neal, & Davis, 2016; James, et al., 2014)

System	**Assessment**
General	-**Measurement of height and weight for BMI** -Blood pressure measurement in both arms
Eyes/Ears/Throat	-**Examination for hypertensive retinopathy** (i.e., arteriolar narrowing, hemorrhages and exudates, focal arteriolar constrictions, disc edema) -Carotid bruits -Distended veins (for volume overload) -Enlarged thyroid gland/thyroid nodules
Heart	-**Murmurs and clicks** -**Third and fourth heart sounds (S3 and S4 gallop)**

	-Arrhythmias (e.g., skipped beats, bradycardia or tachycardia, atrial fibrillation) - **Laterally displaced apical beat** -Precordial heave - Unequal blood pressure in both arms
Lungs	-**Rale Breath Sounds** (suggestive of pulmonary edema)
Abdomen	- **Abdominal and femoral bruits** -Abdominal masses (e.g., abdominal aortic aneurysm) -Abnormal aortic pulsation -Palpable kidneys
Extremities	- Diminished or absent peripheral arterial pulsations - Peripheral edema - Bruits
Neurologic	**-Complete neurologic assessment for signs/symptoms of previous or current stroke/transient ischemic attack** -**Cranial nerve exam II-XII** (facial drooping, slurred speech) - **Hyper-reflexia, spasticity, and Babinski sign** - Gait disturbances - **Muscular atrophy** -**Reduced sensory function** (pain, temperature, light touch, proprioception)

Table 9 Focused Physical Examination for Hypertensive Patients

- **Basic and Optional Laboratory Tests for Primary Hypertension** (Whelton et al., 2017)

- Basic testing
  - Fasting blood glucose
  - Complete blood count Lipid profile Serum creatinine with eGFR
  - Serum sodium, potassium, calcium
  - Thyroid-stimulating hormone
  - Urinalysis
  - Electrocardiogram
- Optional testing
  - Echocardiogram
  - Uric acid
  - Urinary albumin to creatinine ratio

3. Step 3: **Talk about their blood pressure**: Based on an average of more than or equal to 2 careful readings obtained on 2 or more occasions (Whelton et al., 2017).

Stage of Hypertension	**Blood pressure**
Normal	SBP < 120 **AND** DBP < 80 mmHg
Elevated	SBP 120-129 **AND** DBP <80 mmHG
Stage I Hypertension	SBP 130-139 **OR** DBP 80-89 mmHg
Stage 2 Hypertension	SBP ≥ 140 **OR** DBP ≥ 90 mmHg

Table 10 Hypertension Stages according to the ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: A

report of the American college of Cardiology/American heart association task force on clinical practice guidelines.

4. Step 4: **Talk about their medications.**
5. Step 5: **Develop and discuss treatment plan and follow up plan** (Whelton et al., 2017).
    - **Educate patient on the Lifestyle Modifications and Self-care Practices (discussed in the educational session).**
    - **Medication prescription and education.**
    - **Schedule follow up visit** according to ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: A report of the American college of Cardiology/American heart association task force on clinical practice guidelines (Whelton et al., 2017). Treatment plan and follow up visits are represented in figure 9.

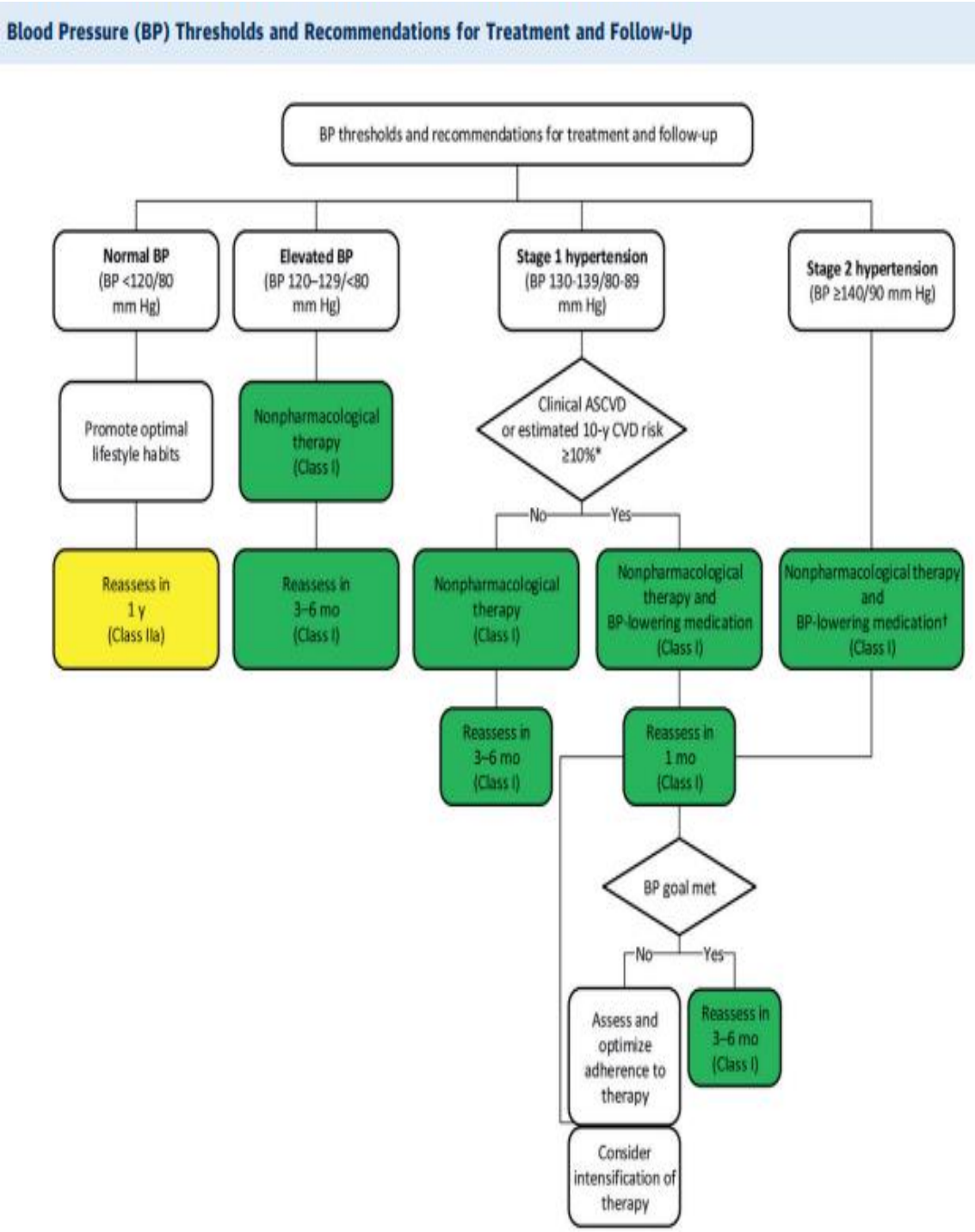


Figure 12 Blood Thresholds and Recommendations for Treatment and Follow-Up

6. Step 6: **<u>Refer or consult when necessary.</u>**

APPENDIX IV

MEETING TOPICS WITH THE DOCTOR

I. Hypertension Management Program

- Mission
- Doctor's Role in the Program
- Nurses Role in the Program
- Motivational Interviewing and Goal Setting Sessions

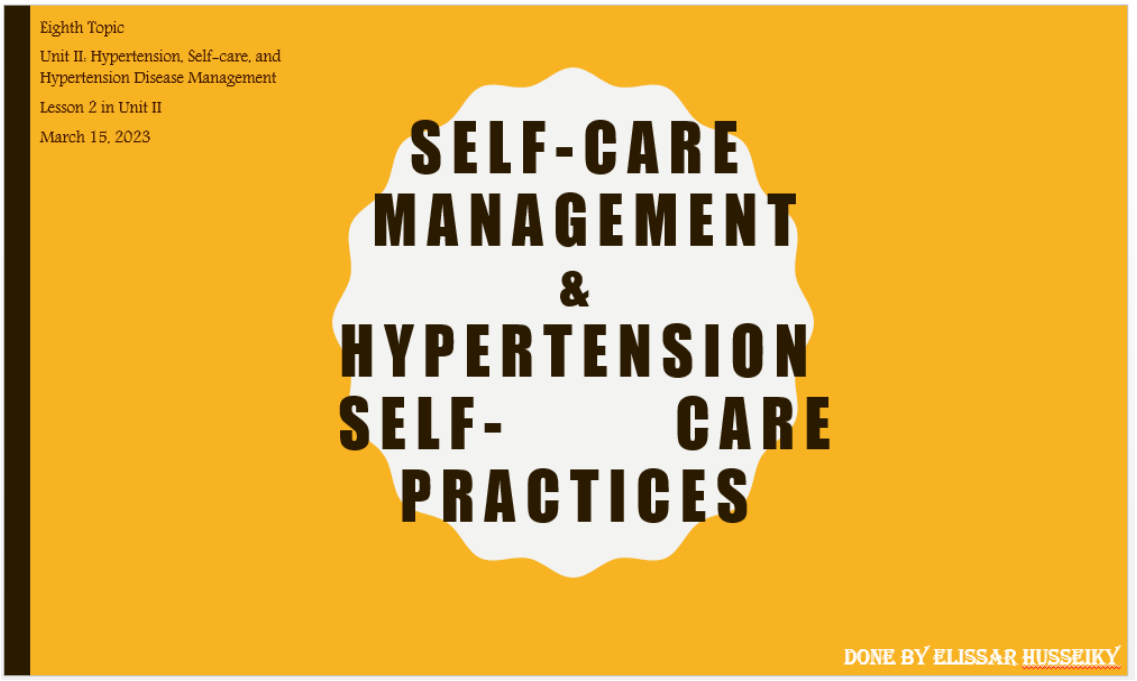
II. Hypertension Management Program Forms

1. Hypertension Management Policy for the program (Appendix II).
2. Written Protocols for Patients Visit (Appendix III).
3. Background and Assessment Asked to each Patient by the Team (Appendix XII).
4. Modified Hypertension Self-Care Activity Level Effects asked by the team to the patients (Appendix XIII).
5. Policy and Protocol Observation Checklist (Appendix XIV).
6. Teams feedback on the hypertension management policy and protocols every 1 months to revise and improve the policy and protocols and update them (Appendix XIX).

7. Education provided to patients by the team (Appendix XV- Hypertension Education Outline/ Appendix XVI- Pre- and Posttest based on Hypertension Knowledge-Level Scale (HK-LS)).
8. Handouts that are given to the patients to write their blood pressure measures daily (Appendix XVII- My Blood Pressure Log).
9. How to make a motivational interviewing and goal setting session (Appendix XVIII).

APPENDIX V

SELF-CARE MANAGEMENT AND HYPERTENSION SELF-CARE PRACTICES SESSION



I. OVERVIEW ON DECISION-MAKING

❑All patients with chronic diseases as hypertension perform decisions influencing their conditions.

-99% of the time patient spends outside the health care system

-95% of the decisions are done by the patient

I. OVERVIEW ON DECISION-MAKING

- ❑ As patients, they make daily decisions on the following:
  - ➢ Medication use: how, when and how often?
  - ➢ How to recognize warning signs?
  - ➢ What to do when symptoms occur?
  - ➢ How to adopt healthy practices?
- ❑ Those decisions are made at home, on the street, at work, with family and friends
- ❑ More importantly away from health care providers

II. SELF-CARE MANAGEMENT

❑Self-management recognizes the person as a **key player** and an **active participant in his/her care management,** with the health care provider in a supportive role.

❑The goal of self-management support is to **strengthen the person's competence and confidence** to manage his/her condition, **make informed decisions** about care, and **adopt healthy behaviors**.

❑Self-management is defined as the "naturalistic decision-making process involving the choice of **behaviors that maintain physiologic stability** (maintenance) and the **response to symptoms** when they occur (management)" *(Riegel, Lee, Dickson & Carlson, 2009).*

III. PASSIVE AND ACTIVE SELF-CARE MANAGEMENT

PASSIVE SELF-CARE MANAGEMENT:

- ✓ Low-differentiating individuals
- ✓ Patients are reliant on health care providers
- ✓ Minimum involvement
- ✓ Onus on the provider

ACTIVE SELF-CARE MANAGEMENT:

- ✓ High differentiation individuals
- ✓ Patients are willing and ready to learn new skills related to:
- ✓ Dealing with their illness
- ✓ Continuing a normal life
- ✓ Dealing with emotions

IV. CONCEPTS IN SELF-CARE

❑Self-management is a natural decision-making process that focuses on four concepts:

- ❖ **Self-care Maintenance**
- ❖ **Self-care Monitoring**
- ❖ **Self-care Management Behaviors**
- ❖ **Moderated by self-care Confidence**

Adopted from the Situation-Specific Theory of Self-Care in Heart Failure
(Riegel & Dickson, 2008)

Self-care Maintenance

Is activities that maintain **clinical stability**

Captures **treatment adherence** and **healthy behaviors**:

- Diet
- Exercise
- Medication
- Tobacco
- Sleep
- Stress management

Self-care Symptom Perception

Involves both the **detection of physical sensations** and the **interpretation by patients**

Specifically, symptom perception involves monitoring signs, as well as recognition, interpretation, and labeling of symptoms.

- **Body listening**
- **Symptom perception**
- **Recognition of symptoms**
- **Interpretation of symptoms**

Self-care Management

Self-care management involves **responding to change** by taking an extra diuretic, limiting fluids, or calling one's health care provider.

Self-care Confidence

Self-care confidence is **the belief in one's ability to perform self-care behaviors effectively**.

V. PRINCIPLES OF SELF-CARE

- ❑Patients have knowledge of their chronic condition
- ❑Development of a **treatment plan** agreed upon with their health provider
- ❑Active participation in **shared decision making** with their health care provider

VI. PROVIDER'S ROLE IN SELF-CARE

- Tap to add text

The role of health care provider is to **support patients self-manage their care** and **making the right decisions when they are away from us** by increasing patients' skills and confidence in managing their health problems, including regular assessment of progress and problems, goal setting, and problem-solving support." *(IOM, 2003)*

We need to:

- ❖ **Educate them or their main caregiver to:**
- ❖ **Enable them to change behavior**
- ❖ **Empower them to handle the emotional sequel of chronic disease**

Determinants jeopardizing Self-care Management

Demographics

- **Low education**
- **Low health literacy**
- *Providers may feel a patient understands a concept but in reality the patient has misinterpreted important information*

Psychology

- **Readiness to learn**
- **Personality traits :**
- *People who prioritize their emotions: think that a chronic illness is like falling into a deep pit and you will have hard time motivating them*
- *People who prioritize their intellectual thinking: think that a chronic disease is a path, goes up and down, sometimes flat, sometimes smooth, sometimes rough*

Social

- The family is the social network from which the patient **derives some of his or her own identity**, with which the patient has strong psychological bonds, and in which each individual has a specific role.
- *Family relationships including levels of conflict, high levels of cohesion and organization, and good communication patterns are associated with better regimen adherence*
- Identifying the family's **predominant lifestyle** and find ways to sustain and incorporate recommendations into it rather than trying to impose a different pattern.

Culture

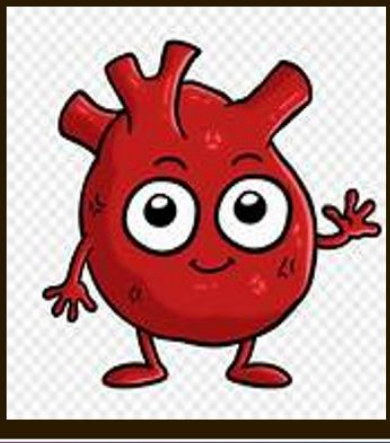
-Cultural differences will affect the **receptivity of a patient to patient education** and willingness to **accept information and incorporate it into his or her lifestyles.**
*-Cultural background. Try to determine **what an illness means from the patient's cultural or religious perspective**. Religious beliefs and cultural norms can also affect a patient's readiness to learn.*

VIII. HYPERTENSION SELF-CARE PRACTICES

- **Self-care practices are major determinants of controlled blood pressure.**

- According to: -European Society of Cardiology (ESC)/ European Society of Hypertension (ESH) *(Williams, et al., 2018)*
  -American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines *(Whelton, et al., 2018)*,
  -Hypertension Canada's 2020 guidelines *(Rabi, et al., 2020)*,
  -International Society of Hypertension *(Unger, et al., 2020)*,

the self-care practices for controlling blood pressure are:



- Maintenance of an **optimal body weight and waist circumference**,
- Active lifestyle (**regular physical activity**),
- **Low-salt diet**,
- Diet rich in sufficient intake of **potassium, calcium, magnesium, and protein from vegetables, fruits, and whole grains,**
- **Less alcohol** consumption,
- **Cessation of smoking,**
- **Stress management**,
- **Adhering to antihypertensive medications**.

APPENDIX VI

GRADING RUBRICS FOR PARTICIPATION IN THE SESSION

		Interacting Class Game		
	Grade	1 point	0.5 point	0 point
Session 1	Topic 1 Lesson 1	Actively listens to peers, engages in the game, and plays an active role in answering his part.	Limited interactions with peers, disrupted engagement in the game, and hesitate while answering his part.	No interaction with peers, no engagement in the game, and doesn't try to answer his part.
	Topic 2	Actively listens to pears, engage in the game, and play an active role in answering his part.	Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.	No interaction with pears, no engagement in the game, and doesn't try to answer his part.

	Topic 3	**Actively listens to pears, engage in the game, and play an active role in answering his part.**	**Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.**	**No interaction with pears, no engagement in the game, and doesn't try to answer his part.**
Session 2	Topic 4	**Actively listens to pears, engage in the game, and play an active role in answering his part.**	**Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.**	**No interaction with pears, no engagement in the game, and doesn't try to answer his part.**
Session 3	Topic 5	**Actively listens to pears, engage in the game, and play an active role in answering his part.**	**Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.**	**No interaction with pears, no engagement in the game, and doesn't try to answer his part.**

	Topic 6	**Actively listens to pears, engage in the game, and play an active role in answering his part.**	**Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.**	**No interaction with pears, no engagement in the game, and doesn't try to answer his part.**
Session 4	**Topic 7**	**Actively listens to pears, engage in the game, and play an active role in answering his part.**	**Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.**	**No interaction with pears, no engagement in the game, and doesn't try to answer his part.**
	Topic 8	**Actively listens to pears, engage in the game, and play an active role in answering his part.**	**Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.**	**No interaction with pears, no engagement in the game, and doesn't try to answer his part.**

	Topic 9	**Actively listens to pears, engage in the game, and play an active role in answering his part.**	**Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.**	**No interaction with pears, no engagement in the game, and doesn't try to answer his part.**
Session 5	Topic 10	**Actively listens to pears, engage in the game, and play an active role in answering his part.**	**Limited interactions with pears, disrupted engagement in the game, and hesitate while answering his part.**	**No interaction with pears, no engagement in the game, and doesn't try to answer his part.**
Total				

Table 11 Grading Rubrics for Participation in the Session

APPENDIX VII

ASSIGNMENT ONE GRADING RUBRIC

Content	**Grade Point**	**Description of the Performance**	**Number of Pages**
1. Description of target population with their population health need overview.	2.5/2.5	**Complete description** of target population and their health needs (with the contributing factors from literature review).	1 page
	1.25/2.5	**Partial or inadequate description** of target population and their health needs (with the contributing factors from literature review).	
	0.75/2.5	**Superficial description** of target population and their health needs.	
2. Problem Analysis	2.5/2.5	**-Accurate identification** of **factors and behaviors** related to health care delivery problem or population health need that will be the focus for knowing the types of intervention needed. -**Rationale** for their selection.	2 pages
	1.25/2.5	**-Imprecise identification** of **factors and behaviors** related to health care delivery problem or population health need that will be the focus for knowing the types of intervention needed. -**Without rationale** for their selection.	

	0.75/2.5	Factors/behaviors unrelated to health care delivery problem or population health need.	
3. Needs Assessment approach & Formulating a hypothesis of the main problem in this population	4.5-5/5	-All 4 needs assessment types are presented accurately -Hypothesis include: hypothesis of etiology, condition, consequence, intervention, and outcome.	3-4 pages
	3-4/5	-3 types of needs assessment are accurately presented, **or** all 4 types imprecisely presented -Hypothesis include: hypothesis of precondition, condition, intervention, and outcome.	
	2-.2.5/5	-2 needs assessment types are accurately presented -Formulation of an Imprecise hypothesis	
	0-1.5/5	-Needs assessment is imprecisely presented -No hypothesis formulation	

Table 12 Assignment One Grading Rubric

APPENDIX VIII

ASSIGNMENT TWO GRADING RUBRIC

Content	Grade Point	Description of the Performance
Choosing an appropriate case study	**1/1**	Appropriate hypertension case study that consists of hypertensive patient presenting to the healthcare (hospital, clinic, primary health care…) with uncontrolled blood pressure. The case study should be in English and selected from a nursing database.
	0-0.5/1	Irrelevant case study or case study that misses most of the discussed and needed topics.
Patient Information	**0.25/0.25**	All patient information presented in the case study.
	0/0.25	Missing or wrong information that doesn't reflect the information in the case study.
History of the Presenting Illness	**0.25/0.25**	Appropriate information about the history of the patient from the presenting illness.
	0/0.25	Missing or wrong information that doesn't reflect the information in the case study.
Chief Complaint	**0.25/0.25**	Addressing the right chief complaint from the case study.

	0/0.25	Missing or wrong information that doesn't reflect the information in the case study.
Diagnosis	**0.25/0.25**	Writing the right diagnosis from the case study.
	0/0.25	Missing or wrong information that doesn't reflect the information in the case study.
Self-care Practices	**2/2**	Addressing all the patient's self-care practices found in the case study.
	½	Addressing some patient's self-care practices found in the case study and missing to write all of the practices.
	0/2	Addressing irrelevant patient's self-care practices found in the case study.
Information you need more from the patient to know about his self-care practices	**2/2**	All the information you need more from the patient to know about his self-care practices are presented.
	½	Few information you need more from the patient to know about his self-care practices are presented.
	0/2	Irrelevant information you need more from the patient to know about his self-care practices are presented.

Non-pharmacological management in your opinion	**3-4/4**	All the non-pharmacological practices learnt in class must be addressed and relevant to the case study.
	1-2/4	Most or few non-pharmacological practices learnt in class addressed and relevant to the case study.
	0/4	Irrelevant non-pharmacological practices presented.

Table 13. Assignment Two Grading Rubric

APPENDIX IX

ASSIGNMENT THREE GRADING RUBRIC

Skills	**Grading Points**	**Description of the Performance**
Organization	**4/4**	Information is very organized with well-constructed paragraphs, use of subheadings, and information is factual and correct.
	2-3/4	Information is organized but paragraphs are not well-constructed, and information is factual.
	¼	Information is disorganized and inaccurate.
Quality of Information	**4/4**	Information clearly relates to the main topic. It includes several supporting details and/or examples.
	¾	Information clearly relates to the main topic. It provides 1-2 supporting details and/or examples.
	2/4	Information clearly relates to the main topic. No supporting details and/or examples.
	¼	Information has nothing to do with the main topic.
Mechanics	**2/2**	No grammatical, spelling or punctuation errors.
	1.5/2	Almost no grammatical, spelling or punctuation errors.

	½	A few grammatical, spelling or punctuation errors.
	0.5/2	Many grammatical, spelling or punctuation errors.

Table 14. Assignment Three Grading Rubric

APPENDIX X

Objective Structured Clinical Examination Grading Rubric

Content	Description of the Performance	Grading Point	
Patients Assessment	All 4 types of needs are presented (normative need, perceived need, expressed need, and relative need)-*as explained in Unit 1.*	Each type of need →1 points.	Total: 4 points.
Self-care	The tools must be presented- Self-care Activity Tool (Self-Care Activity Level Effects tool) - *as explained in Unit 2.*	4 points.	Total: 8 points.
Motivational Interviewing and Goal Setting	Learners must use the strategy of motivational interviewing and goal setting to change the behavior of the hypertensive patient- *as explained in Unit 3.*	*Explained below.*	Total: 13 points.
Motivational Interviewing	**A. <u>Preparatory change talk</u>** **1. Desire** **2. Ability** **3. Reasons** **4. Needs**	 **1 point** **1 point** **1 point** **1 point**	
	B. <u>Eliciting change talk</u> **5. Querying extremes** **6. Looking back** **7. Looking forward**	 **1 point** **1 point** **2 points**	

Goal Setting	**A. Goal** **B. Reality** **C. Options Available** **D. Ways to Complete Plan of Action**	**1 point** **1 point** **1 point** **2 points**	

Table 15. Objective Structured Clinical Examination Grading Rubric

APPENDIX XI

FINAL EXAMINATION (35%)

I. **Questions** (total 15%): Multiple Choice Questions (6%)/ True or False Questions (5%)/ Matching Question (4%)

i. **Answer the following multiple choice questions by choosing the most suitable answer from the given choices. There is one answer for each question. (6%)**

1. ____b___ involves responding to change by taking an extra diuretic, limiting fluids, or calling one's health care provider.

    a. Self-care Maintenance

    b. Self-care Management

    c. Self-care Confidence

    d. Self-care Symptom Perception

2. Self-care practices are major determinants of controlled blood pressure. According to the European Society of Cardiology (ESC)/ European Society of Hypertension (ESH), American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines, Hypertension Canada's 2020 guidelines, *and* International Society of Hypertension, the self-care practices for controlling blood pressure are __d__.

    a. Maintenance of an optimal body weight, low-salt diet, diet with low intake of potassium, calcium, magnesium, and protein from vegetables, fruits, and whole grains, no alcohol consumption, cessation of smoking, stress management, and adhering to antihypertensive medications.

b. Maintenance of an optimal body weight and waist circumference, active lifestyle (regular physical activity), low-salt diet, diet rich in sufficient intake of potassium, calcium, magnesium, and protein from vegetables, fruits, and whole grains, less alcohol consumption, cessation of smoking, stress management, and adhering to antihypertensive medications.

c. Maintenance of an optimal body weight and waist circumference, active lifestyle (regular physical activity), low-salt diet, diet with low intake of potassium, calcium, magnesium, and protein from vegetables, fruits, and whole grains, cessation of smoking, stress management, and adhering to antihypertensive medications.

d. Maintenance of an optimal body weight and waist circumference, active lifestyle (regular physical activity), low-salt diet, diet rich in sufficient intake of potassium, calcium, magnesium, and protein from vegetables, fruits, and whole grains, less alcohol consumption, cessation of smoking, stress management, and adhering to antihypertensive medications.

e. Maintenance of an optimal body weight and waist circumference, active lifestyle (regular physical activity), low-salt diet, diet rich in sufficient intake of potassium, calcium, magnesium, and protein from vegetables, fruits, and whole grains, less alcohol consumption, cessation of smoking, and stress management.

f. Maintenance of an optimal body weight and waist circumference, active lifestyle (regular physical activity), low-salt diet, diet rich in

sufficient intake of potassium, calcium, magnesium, and protein from vegetables, fruits, and whole grains, less alcohol consumption, cessation of smoking, and adhering to antihypertensive medications.

3. __b____ involves both the detection of physical sensations and the interpretation by patients.
    a. Self-care Confidence
    b. Self-care Symptom Perception
    c. Self-care Maintenance
    d. Self-care Management
4. __c___ is the belief in one's ability to perform self-care behaviors effectively.
    a. Self-care Symptom Perception
    b. Self-care Maintenance
    c. Self-care Confidence
    d. Self-care Management
5. Self-management is a natural decision-making process that focuses on four concepts: __a_ The focus of this question is the sequence of the decision-making process and not on the four concepts.

In the decision-making process of self-management, the flow of the concepts will be:

a. Self-care Maintenance, Self-care Symptom Perception, Self-care Management, and then Self-care Confidence.
b. Self-care Symptom Perception, then Self-care Maintenance, then Self-care Management, finally Self-care Confidence.

c. Self-care Symptom Perception, then Self-care Maintenance, then Self-care Confidence, finally Self-care Management.

d. Self-care Maintenance, then Self-care Symptom Perception, then Self-care Confidence, finally Self-care Management.

e. All of the above, the sequence is not important- the presence of the concepts is what matters.

6. __a__ is activities that maintain clinical stability, capturing treatment adherence and healthy behaviors.

Which of the following describes activities that maintain clinical stability, capturing treatment adherence and healthy behaviors?

a. Self-care Maintenance

b. Self-care Management

c. Self-care Symptom Perception

d. Self-care Confidence

All these above questions are from Unit 2/ Lesson 7/ session 4.

ii. **Answer with True or False. If you answered with False, explain why (5%).**

7. Self-management recognizes the person as a key player and an active participant in his/her care management, through the education of the health care provider.

False. Answer is from Unit 2 and 3/ Lesson 7 and 10/ sessions 4 and 5. Education alone is not enough to change a behavior and empower the patient to self-manage his care, motivational interviewing and goal setting strategies are the key.

---

8. The social determinants of health (SDH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems.

   True. Answer is from Unit 1/ Lesson 1/ session 1.

9. One commonly known behavioral change model is Prochaska and DiClemente's Stages of Change. The sequence of behavioral stages include: preparation/ pre-contemplation/contemplation/ action/maintenance.

   False. The correct sequence is: pre-contemplation/contemplation/ preparation/ action/maintenance. Answer is from Unit 3/ Lesson 9/ session 5.

10. Hypertension Self-Care Activity Level Effects tool is the only tool used in determining the self-care behaviors of the hypertensive patient.

    False. There are some other tools but not directly specific to behavioral changes. Answer is from Unit 2/ Lesson 8/ session 4.

11. Motivational Interviewing and Goal Setting strategy is to have set of points and questions that the registered nurse ask the patient from, let the patient set his answers (and goals), decide with the patient on a self-care plan, and document all these points on a Motivational Interviewing and Goal Setting form. This form will be the starting point in the first session, then will be

updated. The updated form will be the starting form in the second session…

This is how the patient become empowered to self-manage his behavior.

True. Answer is from Unit 3/ Lesson 10/ session 5 and 6.

---

iii. Matching questions (4%)

Match the <u>need type</u> with its corresponding <u>definition and example.</u> *(Each type has 1 definition and 1 example).* Answer is in Unit 1/ Lesson 3/ session 2.

12. **Normative Need** **e, g**

13. **Perceived Need** **b, h**

14. **Expressed Need** **a, d**

15. **Relative Need** **c, f**

a. Need defined in terms of the number of people who actually have sought help
b. Number of people in a community who define themselves in survey as being in poor health
c. Percentage of homeless people placed in shelters in community X compared to % in community Y
d. Number of people in a community who are on waiting lists to receive family counseling
e. Number of people in a community living in substandard housing as defined by federal housing standards
f. Need measured by the gap between the level of services existing in one community & those existing in similar communities or geographic areas
g. Need defined as falling below a standard or criterion established by custom, authority, or general consensus
h. Need defined in terms of what people think their needs are or feel their need to be

II. Essay: (20%)

Mr. Raji is 55 years old man. He is known to have hypertension and arrhythmia. He lives in Abey and is a math teacher. He only takes his blood pressure once every week- the results are between 146/88-168/90- and he doesn't visit any doctor for checkup. Today

he felt a little dizzy at 9am after he ate, and then at noon he felt some headache. He remembered that sometimes he forgets to take his blood pressure medication; he forgot to take it yesterday and today. He then searched for his medication and forgot where he put it.

His neighbor was visiting him and told him to take his blood pressure. So he did. His blood pressure was 178/80. He decided to come to Abey Primary Health Care Center (PHCC) and solve this problem. In the PHCC, his blood pressure was also 178/88.

What actions would the registered nurse in Abey PHCC take? How can Mr. Raji's blood pressure become controlled? How can this registered nurse impact Mr. Raji to change his self-care behaviors?

-Write a 500 word essay discussing these questions. Start your essay by stating in few words the needs assessment of this problem, then self-care definition, concepts, and registered nurse's role in self-care. Then continue your essay by identifying the questions the registered nurse must ask in his motivational interviewing and goal setting session. Elaborate in the motivational interviewing and goal setting session strategies.

The grading rubrics of the essay is:

RUBRICS FOR ESSAY

	FOCUS The single controlling point made with an awareness of task about a specific topic.	CONTENT The presence of ideas developed through facts, examples, anecdotes, details, opinions, statistics, reasons, and/or explanations.	ORGANIZATION The order developed and sustained within and across paragraphs using transitional devices and including introduction and conclusion.	STYLE The choice, use and arrangement of words and sentence structures that create tone and voice.	CONVENTIONS Grammar, mechanics, spelling, usage and sentence formation.
4	Sharp, distinct controlling point made about a single topic with evident awareness of task.	Substantial, specific, and/or illustrative content demonstrating strong development and sophisticated ideas.	Sophisticated arrangement of content with evident and/or subtle transitions.	Precise, illustrative use of a variety of words and sentence structures to create consistent writer's voice and tone appropriate to audience.	Evident control of grammar, mechanics, spelling, usage and sentence formation.
3	Apparent point made about a single topic with sufficient awareness of task.	Sufficiently developed content with adequate elaboration or explanation.	Functional arrangement of content that sustains a logical order with some evidence of transitions.	Generic use of a variety of words and sentence structures that may or may not create writer's voice and tone appropriate to audience.	Sufficient control of grammar, mechanics, spelling, usage and sentence formation.
2	No apparent point but evidence of a specific topic.	Limited content with inadequate elaboration or explanation.	Confused or inconsistent arrangement of content with or without attempts at transition.	Limited word choice and control of sentence structures that inhibit voice and tone.	Limited control of grammar, mechanics, spelling, usage and sentence formation.
1	Minimal evidence of a topic.	Superficial and/or minimal content.	Minimal control of content arrangement.	Minimal variety in word choice and minimal control of sentence structures.	Minimal control of grammar, mechanics, spelling, usage and sentence formation.

RUBRICS BY JENNY TUAZON
BSE_MATH

APPENDIX XII

BACKGROUND AND ASSESSMENT ASKED TO EACH PATIENT BY THE TEAM

A. DEMOGRAPHIC INFORMATION

1. Gender:

Male

Female

Others: _____

2. Date of Birth:

Month: _____ Day: _____ Year: _____

3. The highest level of formal education:

Less than high school

Some high school

Completed high school

Some college or technical school

Completed technical school/associate's degree

Completed B.A. or B.S. degree

Graduate study/advanced degree(s)

4. Current employment status:

Employed full-time (35 hours a week or more)

Employed part-time (less than 35 hours a week)

Not currently employed

5. How many adults and children live in patient's household, including himself?

____ Adults and children live in his household

B. HEALTH HISTORY

6. Have you ever been told by a doctor or other health professional that you had…

	Yes	No		Yes	No
Diabetes or sugar diabetes			Weak or failing kidneys		
A heart attack			Kidney dialysis		
Congestive heart failure			Narrowing of the arteries		
Enlarged heart			Speech difficulty		
Angina (chest pain)			Weakness on one side		
A coronary bypass			Slurred speech		
A stroke			Loss of balance		
High cholesterol			Fainting or losing consciousness		

7. Did your mother die from or suffer a heart attack or stroke before she was 65 years old?

Yes

No

Don’t know/Not applicable

8. Did your father die from or suffer a heart attack or stroke before he was 55 years old?

Yes

No

Don’t know/Not applicable

9. Do you now take diabetic pills or insulin for diabetes?

Yes

No

Don’t know

10. Within the past 30 days, have you had the following problems?

	Yes	**No**		**Yes**	**No**
Dizziness			Numbness, tingling of hands		
Headaches			Leg pain or swelling		
Shortness of breath			Leg cramps		
Feeling tired			Cold hands or feet		
Thumping or racing heart			Difficulty breathing		

Feeling weak when I stand up	○	○	Dry, hacking cough.	○	○
Feeling depressed or blue	○	○	Decreased interest in sex.	○	○
Frequent thirst	○	○	Unable to get an erection	○	○
Frequent urination	○	○	Difficulty sleeping	○	○
Dry mouth	○	○	Rash or hives	○	○
Loss of taste	○	○	Constipation or diarrhea	○	○
Blurry vision	○	○	Others: SPECIFY: _____	○	○

C. YOUR HIGH BLOOD PRESSURE & LIFESTYLE

11. How long have you been taking medication for high blood pressure?

○ Less than one year

○ 1–2 years

○ More than 2 years

○ Don't know

12. Has your doctor or health care provider ever told you what your blood pressure GOAL should be?

- Yes, he/she told me my blood pressure numbers should be: ____/_____ or lower.
- Yes, he/she gave me a blood pressure goal, but I do not remember the numbers.
- No, he/she has never told me what my blood pressure numbers should be.
- I don't remember.

13. What do you think your blood pressure numbers should be?

- I think my blood pressure numbers should be: ____/_____ or lower.
- I don't know what my blood pressure numbers should be

14. What do you think about your blood pressure level today? Do you think it was…?

- High
- Borderline high
- Normal/OK
- Low
- Don't know

15. How often can you tell by the way you feel that your blood pressure is too high?

- Never
- Rarely
- Sometimes

Usually

Always

16. How concerned are you about your blood pressure level at this time?

Very concerned

Somewhat concerned

A little concerned

Not at all concerned

D. YOUR HEALTH STATE TODAY

17. Please check which statement best describes your health state today. Check one box in each group.

a. Mobility

I have no problems walking.

I have some problems walking.

I am confined to bed.

b. Self-care

I have no problems with self-care.

I have some problems washing or dressing myself.

I am unable to wash or dress myself.

c. Usual activities (for example: work, study, housework, family or leisure activities)

- I have no problems with performing my usual activities.
- I have some problems with performing my usual activities.
- I am unable to perform my usual activities.

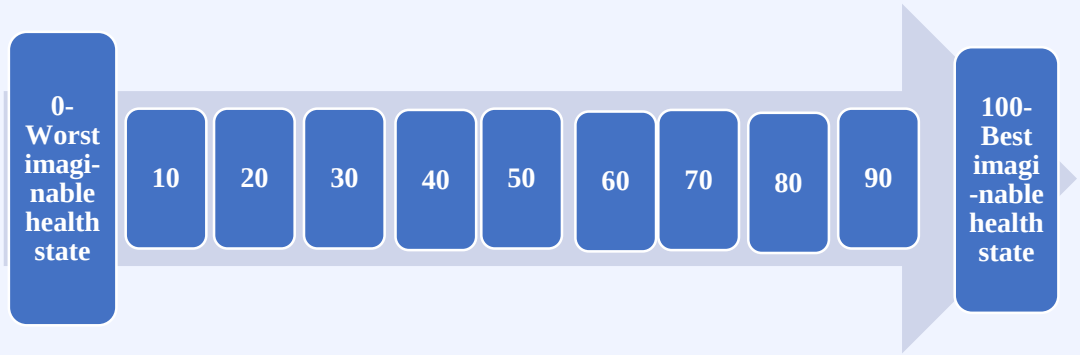
d. Pain/discomfort

- I have no pain or discomfort.
- I have moderate pain or discomfort.
- I have extreme pain or discomfort.

e. Anxiety/depression

- I am not anxious or depressed.
- I am moderately anxious or depressed.
- I am extremely anxious or depressed.

18. Below is a scale for helping people rate their health state. The worst state you can imagine is marked by 0. The best state you can imagine is marked by 100. CHOOSE one number that indicates how good or bad your own health state is today.



APPENDIX XIII

MODIFIED HYPERTENSION SELF-CARE ACTIVITY LEVEL EFFECTS

1) Blood Pressure Measurement:

	Yes	**No**
I have my own blood pressure machine.	○	○
My neighbor has a blood pressure machine that I can use.	○	○
I use a blood pressure monitor to check my blood pressure at home.	○	○
I check my blood pressure daily.	○	○
I check my blood pressure few times per week.	○	○
I check my blood pressure few times per month.	○	○
I check my blood pressure when I don't feel well.	○	○
I use a special card or PAPER to keep track of my blood pressure readings	○	○

---

2) Medication Adherence:

a) The number of days in the past week that I take Blood pressure medication,

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

b) The number of days in the past week that I take it at the same time every day

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

c) The number of days in the past week that I take the recommended dosage.

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

d) Do I currently use the following methods for remembering my blood pressure medication?

	Yes	**No**		**Yes**	**No**
I use a 7-day pill box	○	○	**I take pills before or after a daily routine (e.g., brushing teeth, eating, going to bed)**	○	○
I use another type of box	○	○	**I keep my pills where I can see them**	○	○
I carry my pills with me	○	○	**I use a watch with alarm(s)**	○	○
I take my pills at the same time(s) each day	○	○	**Others: SPECIFY:** _____		

---

3) **Diet Practices:**

a) Do I check food labels to help control or reduce the salt or sodium in my diet?

Yes

No

b) How many servings of fruit do I eat in a typical day? A serving includes: 1 medium fruit, ½ cup fresh, frozen, or canned fruit, ¼ cup dried fruit, or 6 ounces fruit juice. (IF NONE, WRITE '0' ON THE LINE.) ____ Fruit servings per day

c) How many servings of vegetables do I eat in a typical day? A serving includes 1 cup raw leafy vegetables, ½ cup cooked or cut-up vegetable, or 6 ounces vegetable juice. (IF NONE, WRITE '0' ON THE LINE.) ____ Vegetable servings per day

d) How many days do I ….?

	0 days	**1-2 days**	**3-4 days**	**5- 6 days**	**7 days**
Follow a healthy eating plan					
Eat packaged bakery goods					
Eat fried foods such as chicken, French fries, or fish					
Avoid eating fatty foods and salt items					
Eat potato chips, salted nuts, or salted popcorn					
Eat processed meats such as ham, bacon, bologna, or sausage					
Eat smoked meat or smoked fish					

Eat pickles, olives, or other vegetables in brine	○	○	○	○	○
Eat frozen prepared dinners or frozen pizza	○	○	○	○	○
Salt food at the table	○	○	○	○	○
Add salt when cooking	○	○	○	○	○

e) Please check the number of times you have eaten the following foods in the past 2 days, not counting today.

	Never	**1-2 times**	**3-4 times**	**5-6 times**	**7 times or more**
In the last 2 days, how many times did you eat a salty snack (e.g. potato or corn chips, salted nuts or crackers, pretzels, cheese puffs)?	○	○	○	○	○
In the last 2 days, how many times did you add salt to your food at the table?	○	○	○	○	○
In the last 2 days, how many times did you eat fast food, pizza, or a frozen meal (other than low salt)?	○	○	○	○	○

In the last 2 days, how many times did you eat ham, bacon, hot dogs, sausage, or luncheon meat?	○	○	○	○	○
In the last 2 days, how many times did you eat canned vegetables or soup (other than low-salt)?	○	○	○	○	○

---

4) <u>Physical Activity:</u>

a) In the last 7 days, about how many days did I walk at least 30 minutes per day? (This includes at work and at home, walking to work and other places, and any other walking I do for recreation, sport, exercise, or leisure).

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

b) In the last 7 days, about how many days did I do other aerobic physical activities at least 30 minutes per day? This includes any activity that takes physical effort and makes me breathe harder than normal (e.g., bicycling, water aerobics, basketball, dancing fast, washing floors, and heavy lifting).

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

---

5) **Smoking Exposure:**

a) **"How many of the past 7 days did I smoke a cigarette or cigar, even just one puff or any other kind of smoking?"**

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

b) **"How many of the past 7 days did I stay in a room or ride in an enclosed vehicle while someone was smoking?" (passive smoking exposure)**

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

---

6) **Alcohol Intake:**

a) **On average, how many days per week do you drink alcohol?**

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

b) **On a typical day that you drink alcohol, how many drinks do you have?**

0 days	1 day	2 days	3 days	4 days	5 days	6 days	7 days
○	○	○	○	○	○	○	○

APPENDIX XIV

POLICY AND PROTOCOL OBSERVATION CHECKLIST

- **Patient's Name:_____**
- **Date of Birth:_____**
- **Case Number: _____**

Criteria	**Met**	**Not Met**
Build a relationship with the patient		
Assessed Patient in this Visit		
Team measured blood pressure in this visit		
If this is the first visit, diagnosis was the same as the protocol?		
If this is the first visit, Appendixes XII and XIII were filled.		
Team reviewed blood pressure handout documented by patient since last week Appendix XVII.		
Team provided blood pressure handout to patient to fill it before next visit.		
Team developed and discussed treatment plan with patient.		
Follow up schedule was set.		
One-one hypertension education done (refer to the next below table to elaborate)		
Goal setting and motivational interviewing about smoking cessation and managing an appropriate diet provided.		

Goal setting and motivational interviewing form filled.		

Table 16 Policy and Protocol Observation Checklist

Hypertension Topic	**Date**	**Signature**	**Comments**

Table 17 Hypertension Education Form

APPENDIX XV

HYPERTENSION EDUCATION OUTLINE

1. Distributing to the Patient the Pretest
2. Asking Patients What They Know About Hypertension
3. Definition of Blood Pressure and Hypertension
4. Normal Blood Pressure Values and Abnormal Values (stages of hypertension)
5. Signs and Symptoms of Hypertension
6. Risk Factors and Causes of Hypertension
7. Complications of Hypertension
8. Nonmedical Treatment
    a. Weight Reduction
    b. Managing a Health Low Salt and Fat Diet
    c. Physical Activity
    d. Smoking Cessation
    e. Alcohol Reduction
9. Other Self-care Activities
    a. Medication Adherence (Importance and Ways)
    b. Measuring Blood Pressure (Importance, Way, Blood Pressure Hand-out)

10. Patient’s Own Anti-hypertensive medication (Newly Prescribed or Already Taking)

11. Questions

12. Distributing to the Patient the Post-test

APPENDIX XVI

PRE- AND POSTTEST BASED ON HYPERTENSION KNOWLEDGE-LEVEL SCALE (HK-LS)

I. Definition

1. **High diastolic or systolic blood pressure indicates increased blood pressure.**

   ○ Yes

   ○ No

2. **Increased diastolic blood pressure also indicates increased blood pressure.**

   ○ Yes

   ○ No

II. Medical Treatment

1. **Drugs for increased blood pressure must be taken every day.**

   ○ Yes

   ○ No

2. **Individuals with increased blood pressure must take their medication only when they feel ill.**

   ○ Yes

   ○ No

3. **Individuals with increased blood pressure must take their medication throughout their life.**

Yes

No

4. **Individuals with increased blood pressure must take their medication in a manner that makes them feel good.**

Yes

No

III. Drug Compliance

1. **If the medication for increased blood pressure can control blood pressure, there is no need to change lifestyles.**

Yes

No

2. **Increased blood pressure is the result of aging, so treatment is unnecessary.**

Yes

No

3. **If individuals with increased blood pressure change their lifestyles, there is no need for treatment.**

Yes

No

4. **Individuals with increased blood pressure can eat salty foods as long as they take their drugs regularly.**

Yes

No

IV. Lifestyle

1. **Individuals with increased blood pressure can drink alcoholic beverages.**

   Yes

   No

2. **Individuals with increased blood pressure must not smoke.**

   Yes

   No

3. **Individuals with increased blood pressure must eat fruits and vegetables frequently.**

   Yes

   No

4. **For individuals with increased blood pressure, the best cooking method is frying.**

   Yes

   No

5. **For individuals with increased blood pressure, the best cooking method is boiling or grilling.**

   Yes

   No

V. Diet

1. **The best type of meat for individuals with increased blood pressure is white meat.**

   Yes

   No

2. **The best type of meat for individuals with increased blood pressure is red meat.**

   Yes

   No

VI. Complications

1. **Increased blood pressure can cause premature death if left untreated.**

   Yes

   No

2. **Increased blood pressure can cause heart diseases, such as heart attack, if left untreated.**

   Yes

   No

3. **Increased blood pressure can cause strokes, if left untreated.**

   Yes

   No

4. **Increased blood pressure can cause kidney failure, if left untreated.**

   Yes

No

5. **Increased blood pressure can cause visual disturbances, if left untreated.**

Yes

No

VII. Some guidelines

	How hard do you think it would be for you to follow this guideline?	**How helpful do you think it would be for you to follow this guideline?**
Reduce the salt or sodium in your diet if needed	Very hard Moderately hard Not at all hard	Very helpful Moderately helpful Not at all helpful
Walk or exercise 30 minutes per day 5 days a week	Very hard Moderately hard Not at all hard	Very helpful Moderately helpful Not at all helpful
Eat 5 or more servings of vegetables and fruit a day	Very hard Moderately hard	Very helpful Moderately helpful

	○ Not at all hard	○ Not at all helpful
Maintain normal weight or lose weight if needed	○ Very hard ○ Moderately hard ○ Not at all hard	○ Very helpful ○ Moderately helpful ○ Not at all helpful
Take blood pressure medication every day	○ Very hard ○ Moderately hard ○ Not at all hard	○ Very helpful ○ Moderately helpful ○ Not at all helpful

APPENDIX XVII

MY BLOOD PRESSURE LOG

سجل حركة ضغط الدم

جرب هذه النصائح لتتبع ضغط الدم في المنزل:

- قم دائمًا بقياس ضغط الدم في نفس الوقت كل يوم
- قس ضغط الدم مرتين على الأقل ، بفاصل دقيقة أو دقيقتين

التاريخ	صباحا			مساءً			ملاحظة
	الوقت	القراءة الأولى	القراءة الثانية	الوقت	القراءة الأولى	القراءة الثانية	

APPENDIX XVIII

MOTIVATIONAL INTERVIEWING AND GOAL SETTING FORM

I. Motivational Interviewing

A. Preparatory change talk

1. Desire:

What are you looking for from these sessions? What do you hope our work will accomplish? How would you like your life to be in a year's time?

2. Ability:

How confident are you that you could manage your diet and stop smoking if you have your mind made up? What ideas do you have for how you could manage your diet and stop smoking?

3. Reasons:

What are the downsides with how things are now? What are the advantages of managing your diet and stopping smoking? Why do you want to do so? What might be good about that?

4. Needs:

How important or urgent is this for you? What do you think must change?

B. Eliciting change talk

5. **Querying extremes**

If you make that change, what are the best results you can imagine? If you succeed, what good changes might happen?

6. **Looking back**

What were the differences between you five years ago and now? What has changed? How have these difficulties changed you as a person? How have they stopped you from growing or moving forward?

7. **Looking forward**

If you make the changes, how do you think the future will be different from the past? If you don't make the changes, how do you think the future will differ from the past?

II. <u>Goal Setting</u>

A. Goal:

Where do you want to be? Describe in detail what your ideal end point looks like. On a scale of 1 to 10 (10 being the best), how hopeful that you can reach that end point? What bigger goals will achieving this goal lead to?

B. Reality:

Where are you right now with this goal? What strengths can you use to achieve your goal? What assumptions do you have about reaching your potential? What obstacles

are you currently facing? What strengths are available to help you take steps toward your goal?

C. Options Available:

What are some of the options to reaching your goal? What will you do in the next 24 hours? If money was not an obstacle, what would you do?

D. Ways to Complete Plan of Action:

What is your first step forward? What are sub-steps that need to be taken? Who needs to be included in your process? How will you be held accountable?

APPENDIX XIX

TEAMS FEEDBACK ON THE HYPERTENSION MANAGEMENT POLICY AND PROTOCOLS

1. Are you having difficulties applying the policy and protocols?
2. How do you think we can improve them?
3. How are you seeing the patient after the education and goal setting session?
4. Do you have any comments?

APPENDIX XX

GANTT CHART

Month	March									April			
Day (March) and Week of (April till October)	1,2, or 3	Monday/ Wednesday								Week of			
Activity		6	8	13	15	20	22	27	29	3	10	17	24
Secure all Equipment Needed													
Poster and Educational Handouts Design													
Meeting With The Cardiologist													
Hypertension Disease Management Course													
Course Evaluation (OSCE and Final Exam)													
Background and Assessment Asked to each Patient by the Team										A	B	C	D
Team Asking Patient about Hypertension Self-Care Activity Level										A	B	C	D
Policy and Protocol Observation Checklist										A	B	C	D
Hypertension Education to Each Patient										A	B	C	D
Pre- and Posttest based on Hypertension Knowledge-Level Scale										A	B	C	D
Educationl Handouts and Blood Pressure Handouts										A	B	C	D
Filling the Hypertension Education Form in the Checklist										A	B	C	D
Checking Blood Pressure Handout of the Patient										A	B	C	D
Motivational Interviewing and Goal Setting Form										A	B	C	D
Team Feedback on Policy and Program (Meeting)													

Month	May					June				July				
Day (March) and Week of (April till October)	Week of					Week of				Week of				
Activity	1	8	15	22	29	5	12	19	26	3	10	17	24	31
Secure all Equipment Needed														
Poster and Educational Handouts Design														
Meeting With The Cardiologist														
Hypertension Disease Management Course														
Course Evaluation (OSCE and Final Exam)														
Background and Assessment Asked to each Patient by the Team														
Team Asking Patient about Hypertension Self-Care Activity Leve	A	B	C	D	A	B	C	D	A	B	C	D	A	B
Policy and Protocol Observation Checklist	A	B	C	D	A	B	C	D	A	B	C	D	A	B
Hypertension Education to Each Patient														
Pre- and Posttest based on Hypertension Knowledge-Level Scale														
Educationl Handouts and Blood Pressure Handouts														
Filling the Hypertension Education Form in the Checklist	A	B	C	D	A	B	C	D	A	B	C	D	A	B
Checking Blood Pressure Handout of the Patient	A	B	C	D	A	B	C	D	A	B	C	D	A	B
Motivational Interviewing and Goal Setting Form	A	B	C	D	A	B	C	D	A	B	C	D	A	B
Team Feedback on Policy and Program (Meeting)														

Month	August				September				October		
Day (March) and Week of (April till October)	Week of				Week of				Week of		
Activity	7	14	21	28	4	11	18	25	2	9	16
Secure all Equipment Needed											
Poster and Educational Handouts Design											
Meeting With The Cardiologist											
Hypertension Disease Management Course											
Course Evaluation (OSCE and Final Exam)											
Background and Assessment Asked to each Patient by the Team											
Team Asking Patient about Hypertension Self-Care Activity Leve	C	D	A	B	C	D	A	B	C	D	
Policy and Protocol Observation Checklist	C	D	A	B	C	D	A	B	C	D	
Hypertension Education to Each Patient											
Pre- and Posttest based on Hypertension Knowledge-Level Scale											
Educationl Handouts and Blood Pressure Handouts											
Filling the Hypertension Education Form in the Checklist	C	D	A	B	C	D	A	B	C	D	
Checking Blood Pressure Handout of the Patient	C	D	A	B	C	D	A	B	C	D	
Motivational Interviewing and Goal Setting Form	C	D	A	B	C	D	A	B	C	D	
Team Feedback on Policy and Program (Meeting)											

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