



PHARMACIST-LED MANAGEMENT OF HYPERTENSION: OPTIMIZING ANTIHYPERTENSIVE THERAPY AND PATIENT ADHERENCE

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ABSTRACT

Hypertension management by pharmacists is becoming an important initiative of maximizing the antihypertensive treatment and patient compliance. As hypertension is a highly prevalent condition and its role in cardiovascular diseases is considerable, it is necessary to have effective methods of management. Pharmacists, as one of the unique professionals, are placed in a unique position to improve patient outcomes through the management of medication therapy (MTM) based on the appropriate choice, dosage, and surveillance of antihypertensive drugs. Patient education enables pharmacists to overcome obstacles to adherence, counsel them individually, and encourage lifestyle modification including diet and activities. Frequent blood pressure checks, medication evaluation, and cooperation with other medical workers will also help in managing them successfully. This holistic system has been proven to enhance medication adherence, cardiovascular incidences and decreasing healthcare expenditures. The inclusion of pharmacists in the hypertension management presents a patient-centered and cost-effective approach towards optimal optimization of therapy, increased patient education, and an improved health outcome in the long term.

Keywords: Drug Pharmacist-led management, Hypertension, Medication adherence, Antihypertensive therapy.

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INTRODUCTION

Hypertension or a disease with a high blood pressure is one of the key social problems in the world since it is interconnected with high rates of cardiovascular diseases, stroke, and kidney failure. Though there are effective antihypertensive drugs, hypertension in most patients is not controlled effectively especially because of the problems in adherence to prescribed drugs, ineffective management of medications and proper education of patients.[1] Although the physicians have remained the key players in managing hypertension, pharmacists have also been identified to play a major role in the optimization of antihypertensive

treatment and enhancement of patient compliance. [1,2] Management of hypertension by pharmacists entails individualization of treatment plans, optimization of the selection and dosage of antihypertensive medication used, and the monitoring of possible side effects and interactions that will reduce the adherence of patients. Through collaboration and coordination with other health workers like physicians, the pharmacists themselves are able to make sure that the patients are provided with the best therapies based on the factors, which include comorbidities, age, and even the lifestyle factors. Moreover, pharmacists would be at an ideal position to inform the patient about his condition, the need to take

the prescribed drugs as required, lifestyle changes, including lifestyle modifications in terms of dietary changes, exercise, and stress management. [3,4] During direct interaction with patients, it is possible to overcome the barriers to adherence, e.g., forgetfulness, lack of understanding of the treatment plan, or fear of side effects, and offer individual solutions to these problems. The research demonstrated that intervention facilitated by a pharmacist may be a great way to control blood pressure, decrease the chances of adverse cardiovascular events, and increase patient satisfaction with their treatment program. Moreover, pharmacist participation in the treatment of hypertension has been linked to improved patient outcomes especially in ambulatory and community-based care where pharmacists can provide a continuous follow-up and individual care. In addition, the incorporation of internet technologies, (i.e., medication adherence monitoring devices, mobile health applications, telehealth appointments, etc.) can also contribute to the effectiveness of pharmacists in managing hypertension. [5] These devices offer patient tracking information in real-time, which allows pharmacists to make timely changes to treatment and offer patients remote assistance. To sum up, hypertension management by pharmacists can become an effective model of practice that can result in a positive patient outcome, increased medication adherence, and more personal care. Pharmacists can play a key role in the general hypertension management process, including optimizing antihypertensive treatment, working with adherence issues, and patient education, which helps to reduce the burden of cardiovascular diseases and improve the quality of life of patients.[6]

Global Burden of Hypertension

High blood pressure, also referred to as hypertension, is a massive health challenge in the world today, as its burden cuts across the developed and developing nations. It is a significant predisposing factor to a broad spectrum of heart diseases, stroke and kidney failure among other severe health complications, such as loss of sight and dementia. The World Health Organization (WHO) estimates that globally, about 1.13 billion individuals have hypertension, with a rising trend of the condition occurring because of the changes in lifestyles, old age, and urbanization. Hypertension has been estimated to have a prevalence of about 3045 in the world with more of an undiagnosed form of the disease which is causing a silent epidemic.[7] Quite a number of hypertensive people do not know about their condition, and thus, they do not receive prompt diagnosis and treatment, making the risks even greater. This is also a problem that increases the burden of hypertension as the world because the disease is usually a lifelong condition and would need constant control to avoid complications.

Poor diet, excess salt, lack of exercise, obesity, excessive drinking, and tobacco consumption are all the factors that contribute and accelerate the development and progression of hypertension. Moreover, hypertension is strongly associated with other chronic illnesses, including diabetes and dyslipidemia, which create a group of metabolic risk factors that further contribute to the risks placed on the healthcare systems.[8] The effect of hypertension on the economy is also high because it results in increased healthcare expenditure, because of being hospitalized, complications, and lost productivity. The load is especially high in low- and middle-income countries, where the healthcare infrastructure might not be so adequately prepared to deal with the chronic disease issues. The inability to receive quality healthcare, deficiency of funds to implement prevention programs and scarcity of trained healthcare professionals make the situation worse. Globally, hypertension has been considered a top cause of untimely mortality with 9.4 million mortalities per annum attributed to the development of complications associated with high blood pressure such as heart disease and stroke[9]. The urgency to cope with hypertension has been identified by the World Health Organization, and it has demanded a stronger strategy towards prevention and management of hypertension along with its diagnosis. Lifestyle change programs like salt reduction, exercise and nutrition programs are essential in preventing the increasing cases of hypertension. In addition, enhancing the healthcare systems and making people obtain regular blood pressure checks, proper diagnosis and proper treatment are key measures to reduce worldwide weight of hypertension. With proper management of hypertension, there may be a strong decrease in cardiovascular events and premature death, thereby promoting the population health and healthcare cost in the planet.[10]

Rationale for Pharmacist Involvement

Pharmacists have a role to play in the management of hypertension because they have the special knowledge on managing medication therapy, counselling and prevention of diseases. Pharmacists are very qualified in maximizing drug treatment, determining the possibility of the drug interacting with other drugs and getting patients the best medications considering their health histories. Having profound knowledge of pharmacology, pharmacists can assist in setting and changing dosages, changing medicines when needed, and providing follow-ups, which would considerably improve the safety and effectiveness of hypertension treatment. Additionally, pharmacists in most instances have easy access as they are the most commonly available health care professionals and most patients see them frequently when they need to refill their medication or seek some advice.[1,3] This constant

contact offers a chance to educate patients by pharmacists on their condition, the necessity to stay adherent to antihypertensive therapies, and lifestyle change that could be used to supplement medical therapies. The lack of adherence to hypertension medications is a major impeding factor towards successful treatment and research indicates that half of all patients fail to take their prescribed medications. Pharmacists can be used to narrow this divide by attending to the issues that elevate concerns on side effects, medication regimen and possible misconceptions about the treatment thereby enhancing patient compliance. Moreover, the pharmacists can be in a good position to track the blood pressure of patients, progress, and coordinate with other healthcare providers to modify the treatment plans as the patients require. This is particularly important in environments where physicians are either not accessible to all like in rural or underserved communities and pharmacists, in this case, play a critical role in enhancing the management of hypertension by lowering the overall cost of cardiovascular diseases.[11] Moreover, as more and more digital health tools become available, pharmacists have an opportunity to be more helpful in assisting patients manage their hypertension by using technologies like mobile health applications and remote monitoring. Finally, it has been concluded that pharmacist role in controlling hypertension is not only a necessity to define optimal therapy and enhance adherence but also to offer individualized care that fulfills the needs of patients and eventually results in improved health conditions.

Pathophysiology and Classification

Pathophysiology of hypertension is a complex interaction that combines genetic, environmental and physiological factors that contribute to a long term elevation of blood pressure. The main features of it include elevated systemic vascular resistance caused by augmentation of the cardiac output and blood vessel constriction. Dysregulation of renin-angiotensin-aldosterone system (RAAS), playing a central role in blood volume and vascular tone regulation is one of the most important processes in the development of hypertension. When RAAS is overactivated, this results in more sodium and water retention by kidneys leading to the accumulation of fluid, rise in blood volume and eventually, high blood pressure. [12] Besides RAAS, the sympathetic nervous system (SNS) also plays a role in hypertension through improving the tone of the vessels and the rate of heart. The hyperactivity of the SNS causes the vasoconstriction causing even further increased blood pressure. The other critical component is endothelial dysfunction which occurs when the blood vessels cannot dilate because of the lack of nitric oxide, and this increases peripheral resistance. This malfunction

and alterations in the structure of the blood vessels, which include thickening of the arterial walls, is part of the long term high blood pressure that is observed in hypertensive patients. Hypertension can be divided into two types and they are primary (essential) and secondary hypertension. [13] Proper classification of hypertension is imperative in determining the treatment procedures and those patients who are at risk of greater complications of heart disease, stroke, and kidney failure.[14,15]

Pharmacotherapy of Hypertension

Treatment of hypertension through pharmacotherapy is intended to lower the high blood pressure, avoid complications and enhance good health in the long term. Antihypertensive drugs are chosen based on a number of factors, such as the severity of hypertension, comorbidity, and patient-specific factors such as age and ethnicity. The major types of antihypertensive medications are diuretics, angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers (ARBs), calcium channel blockers (CCBs), beta-blockers, and direct renin inhibitors. [16,17] The use of diuretics especially thiazide diuretics has been regarded as the first line treatment of uncomplicated hypertension because of its ability to lower the blood volume and peripheral vascular resistance.[18] The action of these drugs is to slow the heart rate and cardiac output thus decreasing blood pressure. Besides these conventional classes, some more recent agents are available including direct renin inhibitor and aldosterone antagonist that can be applied in the cases of resistant hypertension or in those that are not responsive to other treatments. Polypharmacy is commonly required to attain the best blood pressure control, particularly with patients who are experiencing stage 2 hypertension or are resistant to monotherapy. One should make pharmacotherapy specific to each patient, taking into account their compliance to the treatment plan and possible adverse effects and drug interactions. In addition, pharmacologic treatment should be used together with lifestyle changes like minimizing sodium intake, physical activity, and stress management in order to realize maximum results in the management of hypertension. Constant monitoring of blood pressure should be carried out to make sure that therapy is successful and manipulated accordingly to avoid the complications that are linked to uncontrolled blood pressure.[19-21]

Resistant Hypertension Management

Resistant hypertension is characterized by the condition of blood pressure that is still high after the administration of three or more antihypertensives like a diuretic agent at optimal levels. It is a problematic

condition, which should be evaluated closely and handled in a complex way. Confirmation of the diagnosis is one of the initial stages in resistant hypertension management because factors including poor medication compliance, inaccurate blood pressure measurement, or white coat syndrome can pass off as resistance.[22] After the confirmation it is important to intervene on lifestyle factors, which encompass reduction of weight, alteration of dietary habits (particularly reduction in sodium-containing foods), physical exercise, reduction in alcohol intake, and stress management. With regard to pharmacological therapy, a fourth antihypertensive agent, which is commonly a mineralocorticoid receptor antagonist like spironolactone, has proven to be very useful in the management of resistant hypertension. Spironolactone acts by suppressing the effects of aldosterone which facilitates retention of sodium and raises blood pressure. Additional drug considerations are a beta-blocker, alpha-blocker, or centrally acting such as clonidine which may be especially effective among patients with other conditions such as heart failure or obstructive sleep apnea.[23,24] Moreover, secondary etiologies of hypertension should be assessed and controlled because such conditions as hyperaldosteronism, pheochromocytoma, renal vascular disease, and primary hyperparathyroidism may be the cause of resistant hypertension. In other situations, invasive procedures like renal denervation can be resorted to. Renal denervation is a procedure that interferes with the renal sympathetic nerves that deal with blood pressure regulation by applying radiofrequency energy. Though this process has been more or less a mixed result, it could be used in patients with really resistant hypertension that are nonresponsive to pharmacological interventions. The other significant factor in the management of resistant hypertension is checking and treatment of comorbidities, including diabetes, chronic kidney disease, and sleep apnea, which may make it harder to manage hypertension [24,25]. Follow up with blood pressure check regularly is important to determine the treatment effectiveness and implement the required corrections. A holistic, personalized intervention can help to reduce blood pressure, decrease the chances of heart disease, and increase the overall quality of life of patients with resistant hypertension.[26]

Medication Therapy Management (MTM)

Medication Therapy Management (MTM) is a unified intervention that is designed to maximize therapeutic effects on patients by making sure that medications are safe and effective. It entails comprehensive examination of all medications that a patient is taking, both prescription and over-the-counter drugs, and dietary supplements with the aim of

recognizing possible drug-related issues, which include drug interactions, side effects, duplication of treatment, and adherence challenges.[27] The major aim of MTM is to enhance the outcomes of patients by avoiding medication errors, increasing the chances of taking medications on schedule, and reducing the cases of adverse drug reactions. The pharmacists are active participants in MTM undertaking medication reviews, educating patients, and offering them personal counseling on medication intake. Pharmacists guarantee that the patients comprehend the goal, the method of dosage, and the side effects of their medications through face-to-face interactions or phone follow-ups, thereby correcting any misconceptions or fears that might cause them to discontinue their medications. [28] MTM enables patients to gain control of their healthcare by ensuring personalized care and results in improved communication among patients, pharmacists, and other healthcare professionals. Finally, MTM improves quality of care and contributes to the maximum therapeutic outcomes, especially in the group of complex medication regimens or a risk of polypharmacy.

Blood Pressure Monitoring Services

The services of blood pressure monitoring play a vital role in the further management and control of hypertension, as it provides patients with regular evaluations through which it becomes possible to ensure an early indication of increased blood pressure and the efficiency of the treatment plan. These services are offered in a number of ways such as in-office measurements, home monitoring devices and telehealth platforms, which are all vital in blood pressure management, especially in individuals with chronic hypertension. Frequent evaluation gives a more precise overview of the way a patient blood pressure changes over time, which is essential when defining what modifications to the treatment strategies are necessary.[29] Furthermore, blood pressure monitoring services may improve patient education by offering information on the impacts of lifestyle attributes, including diet, exercise, and stress management, on blood pressure. These services can also enhance patient adherence to treatment regimens by providing options like mobile applications that help patients follow their readings, send alerts, and get tailored health-related tips[30]. Additionally, the monitoring services can be integrated into the bigger healthcare systems to facilitate greater coordination among the pharmacists, physicians, and other healthcare providers such that all parties will be aware and able to cooperate to maximize care. All in all, blood pressure monitoring services can play an important role in enhancing patient outcomes, lowering the risk of hypertension-associated diseases, such as

stroke, heart disease, and kidney failure, and reducing proactive health management.

Dose Adjustment and Therapy Optimization

Personalized medicine is also essential as a part of dose adjustment and optimization of therapy, especially in treating chronic diseases such as hypertension, diabetes, and heart failure. These procedures will be associated with the close adjustment of the dosage of the medications according to the reaction of the particular patient with the aim to increase the therapeutic effect and reduce the side effects. [31]. Moreover, optimization of therapies incorporates the combination therapy in which various classes of drugs are taken in combination to increase the overall effectiveness of therapy. As an example, the combination of an ACE inhibitor, diuretic, and a calcium channel blocker can be used to better manage blood pressure than when used separately. Periodic tests such as blood tests, patient feedbacks and objective measurements (such as blood pressure measurements) are essential in informing dose changes. Healthcare professionals can assess the efficacy and tolerability of therapy in a consistent manner and make sure that patients obtain the expected therapeutic results without any needless complications. [32] To summarize, the dynamic therapy optimization and dose adjustment are patient-centered processes which demand collaborative effort among patients, pharmacists and physicians, thus resulting in more effective and personalized treatment regimens that increase patient outcomes.

Improving Medication Adherence

The enhance chronic disease management such as hypertension, diabetes and heart disease management, medication adherence is an urgent issue since lack of medication adherence might result in poor health outcomes, disease progression and higher healthcare expenses. Lack of understanding among patients about the significance of their medication is one of the major causes of poor medication adherence and it can be incorporated by effective communication and patient education. The pharmacists can be helpful in their education of the patients on the purpose of their medications, proper manner of taking them and the possible effects of lack of compliance. [3,33] Another useful method is simplifying drug schedules; example is the taking of fixed-dose combination pills; a combination pill entails combining multiple drugs into one pill making the regimen easier to remember and adhere to by the patients. Also, it is possible to provide patients with a tool that can remind them of taking medication regularly, e.g., by using pill organizers or sending reminders through mobile applications. In patients with side effects, healthcare providers should

have an open-line conversation, which should cover the issues and make the treatment plan more tolerable in case it is required [34]. Frequent follow-ups in the form of either physically visiting the patient, using phone calls or telehealth sessions can also assist in keeping them engaged and give healthcare providers a time to evaluate the progress, detect obstacles in adherence, and implement required changes. The next important factor is the social support systems because the encouragement of family members, caregivers or support group can help to convince the patient to adhere to her treatment plans. Consideration of financial aspects, including high price of medicines, is also relevant as some patients might skip doses or refuse to refill a prescription because of the affordability problem. [35-38] This can be mitigated by the provision of cheaper alternatives or application of patient assistance programs. Finally, a complex intervention of educating, simplifying regimens, frequent follow-up and support enables one to enhance medication adherence and make patients attain maximum levels of health outcomes.

Reduction in Cardiovascular Risk

One of the primary aims in the treatment of hypertension, diabetes, hyperlipidemia, and other previously mentioned chronic illnesses, which help in the progression of heart disease, is reduction in cardiovascular risk. Cardiovascular diseases (CVD) represent one of the main burden of morbidity and mortality around the globe, and risk factors including high blood pressure, high levels of cholesterol, smoking, unhealthy diet, and lack of exercise are the key contributors of the burden. Prevention of the onset of acute events such as heart attacks and strokes through the reduction of the cardiovascular risk is a complex process that is based on controlling these risk factors. [39] The control of hypertension is one of the most effective methods to decrease the cardiovascular risk because high blood pressure is among the most notable risk factors in cardiovascular disease. The combination of antihypertensive drugs, together with lifestyle change, such as limited intake of sodium, physical activity and stress management can also reduce blood pressure and minimise the risk of cardiovascular complications. Besides high blood pressure, it is also essential to control the level of cholesterol. Lipid-lowering drugs are usually given to eliminate LDL cholesterol (the bad cholesterol) and raise the levels of HDL cholesterol (the good cholesterol), which in turn prevents the formation of plaque in the arteries of the person, a process called atherosclerosis. It can be prescribed to patients who have a high risk of developing CVD to take medications like aspirin or other antiplatelet drugs to decrease the chance of clot developing and causing a heart attack or stroke. [40] Another significant

aspect in the prevention of cardiovascular risk is smoking cessation because tobacco consumption is a major risk factor of atherosclerosis and heart disease. Counseling, Nicotine replacement therapy, and drugs, such as varenicline, can assist people in quitting smoking and reducing their cardiovascular risk. Moreover, it is important to regulate the levels of blood sugar in diabetic patients to avoid the destructive impact of high glucose rates on the blood vessels. The risk of cardiovascular complications of diabetes can be minimized by tight glycemic control, including the use of such drugs as metformin or insulin, and by monitoring of blood

glucose levels. Management of weight is also of importance; obesity is closely associated with risk of cardiovascular, and dietary and physical weight loss can make significant contributions in reducing this risk. Such a combination of hypertension, cholesterol, blood glucose, and weight control, as well as smoking quitting and physical exercise, can result in significant remission of heart risk. In addition, frequent screenings and preventative healthcare checkups are needed to detect and manage the risk factors early on so that they can be intervened before the outcome is adverse. [41,42].

Table 1: Benefits of Pharmacist-Led Hypertension Management

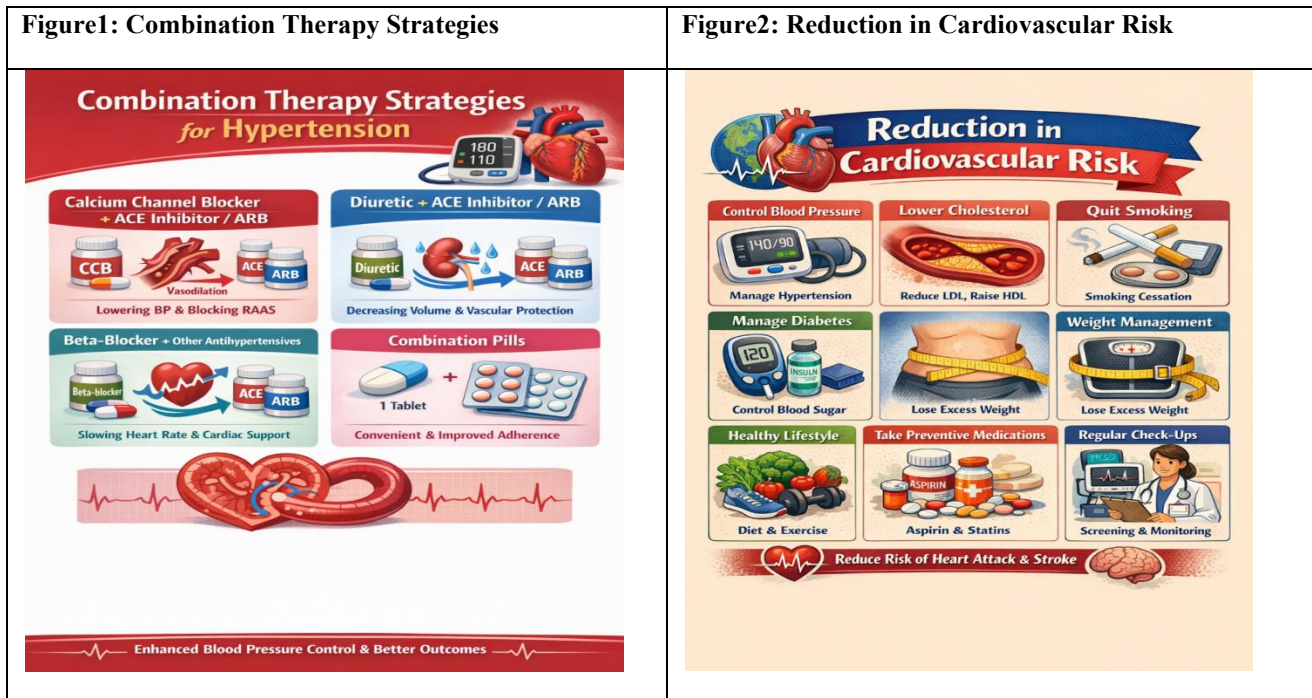
Benefit	Description
Medication Optimization	Pharmacists ensure the correct choice, dosage, and combination of antihypertensive medications.
Enhanced Adherence	Regular counseling and education help improve patient adherence to prescribed therapies.
Patient Education	Pharmacists educate patients about hypertension, treatment regimens, and lifestyle modifications.
Monitoring and Follow-up	Pharmacists regularly monitor blood pressure and adjust treatment plans based on patient progress.
Cost Reduction	Pharmacist interventions can reduce healthcare costs by preventing complications and hospitalizations.

Table 2: Classification of Hypertension Stages and Blood Pressure Levels

Stage of Hypertension	Systolic BP (mm Hg)	Diastolic BP (mm Hg)
Normal	<120	<80
Elevated	120-129	<80
Stage 1 Hypertension	130-139	80-89
Stage 2 Hypertension	≥140	≥90

Table 3: Common Antihypertensive Drug Classes and Their Mechanism of Action

Drug Class	Mechanism of Action	Common Uses
Diuretics (e.g., Thiazides)	Reduce blood volume through increased renal sodium and water excretion	Uncomplicated hypertension
ACE Inhibitors (e.g., Lisinopril)	Inhibit the conversion of angiotensin I to angiotensin II, reducing vasoconstriction and fluid retention	Hypertension with diabetes or kidney disease
ARBs (e.g., Losartan)	Block the action of angiotensin II on blood vessels	Hypertension with diabetes or chronic kidney disease
Calcium Channel Blockers (e.g., Amlodipine)	Inhibit calcium entry into smooth muscle cells, causing vasodilation	Hypertension, particularly in elderly or isolated systolic hypertension
Beta-Blockers (e.g., Metoprolol)	Block beta-adrenergic receptors, reducing heart rate and cardiac output	Hypertension with heart disease or arrhythmias



Cost-Effectiveness of Pharmacist Interventions

This has made the cost-effectiveness of pharmacist interventions in healthcare to gain more and more prominence particularly concerning the treatment of chronic illnesses like hypertension, diabetes and cardiovascular diseases. Pharmacists are in a unique position to enhance health outcomes whilst minimizing costs of health care by utilizing their medication management, patient education, and therapeutic optimization skills. Medication therapy management (MTM) is one of the most important factors of pharmacists helping to make it cost-effective. MTM services involve thorough medication reviews, drug issue recognition and encouraging compliance with prescribed treatment.[43] Through making sure that the patients are on the most suitable drugs and taking them properly, the pharmacists can minimize the emergency room visits, hospitalizations, and long term care that comes with medication errors, drug interactions, or poor disease control. It has been demonstrated that interventions conducted by pharmacists can be an effective way to enhance medication adherence as it is an essential aspect of avoiding the worsening of the disease and the emergence of complications. As an example, antihypertensive medications can be more adhered to in the case of patients suffering hypertension, and fewer heart attacks, strokes and kidney disease will occur, thereby saving money in the long-run as the patients did not have to undergo expensive treatments and hospitalization.[28] Moreover, pharmacists can also make sure that the stream of drugs and the coordination

of the drug regimen is carried out correctly by preventing polypharmacy when a patient has several drugs, and they are not always appropriate. This enhances patient safety as well as minimizing the expenditures on useless drugs, adverse reactions, and side effect treatment. Pharmacists also take part in cost-effectiveness by educating the patient on lifestyle change, including diet, exercise and smoking cessation that can complement pharmacological treatments and enhance health outcomes. [44,45] As an example, diabetic patients who are counseled about proper nutrition and physical exercises might be able to control their glucose levels better, which means that they would not have to undergo more serious treatments or hospitalization. Moreover, by including pharmacists into the healthcare teams, especially in primary care fields, the resources can be used more effectively as the treatment plans can be optimized, and the complications can be prevented at the initial stage. The result of this form of collaboration can be decreased workload on physicians and other healthcare professionals, which would enable improved resource allocation.[3,46] Furthermore, the pharmacist interventions in the prevention and management of medicine related complications are associated with great cost savings in healthcare expenditure and hence their participation in healthcare systems is a cost effective strategy. The health outcomes of patients are enhanced at reduced costs, through the cut in hospitalization, emergency cases and complex treatment requirements, which are achieved through intervention of pharmacists, which ultimately

enhances the efficiency and sustainability of health systems. To sum up, pharmacist interventions could be more cost-effective than they seem because they improve medication adherence, prevent adverse events, simplify treatment regimens, and educate patients all of which help to achieve better health outcomes and low healthcare spending.[47]

CONCLUSION

The role of pharmacist in hypertension management is critical in maximizing the therapy of antihypertension, enhancing the adherence and finally increasing the patient outcomes. As a chronic disease that has serious cardiovascular consequences, hypertension is to be managed individually and constantly, which is something pharmacists are the only ones to offer. Pharmacists have the opportunity to provide the most effective and safe treatment choices to patients using their expertise in medication therapy management (MTM) depending on their needs, comorbidities, and preferences toward treatments. Among the essential advantages of pharmacist involvement, there is the possibility to perform a comprehensive medication review, identify the possible drug-related issues, and regulate treatment in order to

reduce the occurrence of side effects or drug interactions. Such interventions are especially useful with patients who might receive numerous drugs because of comorbidities, and polypharmacy might give rise to problems and non-compliance. Pharmacists can also play a critically important role in educating patients about the kind of importance their antihypertensive treatment has, the presence of misconceptions, and encouraging them to have a better understanding of their situation. By directly counseling patients, pharmacists are able to increase patient adherence to prescribed therapy, which is usually a problem in treating hypertension. This training goes through to counseling the patients on lifestyle changes i.e. eating, exercise and weight management that are essential supplements to pharmacotherapy. By stressing on the importance of the changes, the pharmacists can assist the patients in understanding that hypertension management is not only a matter of taking medication but a long-term, long-sustainable changes in their lifestyle. Moreover, it is possible to track the treatment progress with the help of regular checks of blood pressure and constant communication of the pharmacist who must be sure of the effectiveness of the therapy provided and the absence of serious side effects suffered by patients.

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