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HYPERTENSIVE ADULTS TYPOLOGY AND SELF-CARE BEHAVIORS IN THE MANAGEMENT OF HYPERTENSION IN LANA DEL SUR, PHILIPPINES

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ABSTRACT

Background: Self-care behaviors have always been tagged as vital component in the management and prevention of hypertension and its related complications. However, scientific literatures reveal that in spite of its clear benefits, compliance rates is relatively poor and low in both developed and developing countries including Philippines.

Objective: This study aims to assess the hypertensive adults' typology and self-care behaviors in the management of hypertension in the Province of Lanao del Sur, Philippines. **Methods:** Cross-sectional non-experimental quantitative design utilizing descriptive and predictive approach was used in the conduct of this study.

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Using stratified-random sampling, a total of three-hundred (300) known or diagnosed hypertensive adults from thirty-nine (39) municipalities of Lanao del Sur Province served as participants of this study. Self-administered questionnaire (SAQ) tool patterned with the existing literatures was validated and used for the data gathering process. Ethical considerations were primarily observed throughout the conduct of the study. **Results:** Hypertensive adults in this study have always perceived the use of medication (\bar{x} =3.336), often considered diet (\bar{x} =3.154) and habits (\bar{x} =3.252), and sometimes use exercise (\bar{x} =2.452) as effective means of self-care behaviors in the management of hypertension. Moreover, participants' actual and sudden increase of blood pressure, sign and symptoms of hypertension they had experienced, and the effects of blood pressure in their activities of daily living have found out to have significant influence among hypertensive adults self-care behaviors in the management of hypertension. **Conclusion:** Hypertensive adults' typologies in the context of blood pressure readings, symptoms of hypertension, and its effects on ADL must be taken into consideration as important significant predictors of one's self-care behaviors compliance in the management of hypertension.

Introduction

Non-communicable diseases including hypertension have always been ranked as top contributor of both morbidity and mortality worldwide, and is escalating in number day by

day (Li, Liang, Bu, & Hesketh, 2020). Prevalence of hypertension cases have increased by three (3) times since the last twenty-five (25) years, and is accounting to eighty-percent (80%) of total deaths among developing countries (Bagale, 2019). Hypertension has always been attributed to various associating risk factors including behavioral aspects such as physical inactivity, inadequate and poor nutrition, stress, overweight, smoking, alcohol use, and other unhealthy lifestyles (Fazel, Motlagh, Chaman, Sadeghi, & Eslami, 2016). Poor hypertension management is a greater risk factor of both cardiovascular related diseases and renal problems among hypertensive adults (Legesse et al., 2019).

Moreover, literatures have revealed self-care behaviors including compliance with prescribed medications and lifestyle changes involving diet restriction, physical and mental exercise, alcohol abstinence and smoking cessation are vital activities need to be undertaken for the improvement one's health and prevention of hypertension related diseases (Legesse et al., 2019). Hence, increasing awareness on hypertensive adults' typology and their self-care behaviors is one of the main focuses of primary prevention of this disease (Kisokanth et al., 2018). Evaluation of one's self-care behaviors in the management of hypertension will provide both clinician and patient with scientific knowledge on how to effectively and efficiently control, manage, and prevent hypertension and its complications

(Fazel et al., 2016).

However, in spite of the known scientific benefits of self-care behaviors among hypertensive adults, the compliance and practice of self-care activities have always been poor and relatively low for both developed and developing countries like Philippines (Legesse et al., 2019; Yang, Jeong, Kim, Lee, & Lee, 2013). Thus, the need to constantly monitor and assess the status of hypertensive population is crucial especially in the development and enhancement

of local based interventions, management, and policies (Legesse et al., 2019; Fazel et al., 2016; Yang et al., 2013). In view of this discourse, the study aims to assess the hypertensive adults' typology and self-care behaviors in the management of hypertension among thirty-nine (39) municipalities of Lanao del Sur, Philippines and come-up with best scientific strategies to enhance the delivery of hypertension health services in the community and the country in general.

Conceptual Framework

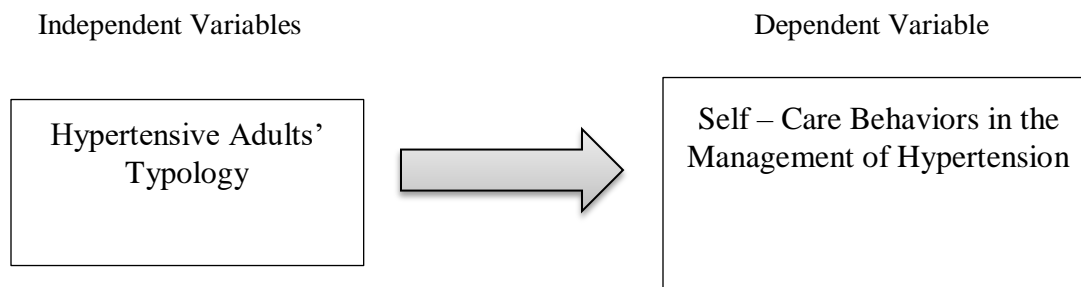


Figure 1: Schematic diagram showing the relationship between variables.

Objectives of the Study

1. Determine the respondent's typology with respect to hypertension.
2. Identify the self-care behaviors of the hypertensive adults in the management of hypertension in terms of diet, exercise, habits, and medication.
3. Investigate the significance influence between hypertensive adults' typology and their self-care behaviors in the management of hypertension.

HO1: Hypertensive adults' typology has no significance influence between their self-care behaviors in the management of hypertension.

Methodology

Design and Setting

A cross-sectional non-experimental quantitative design utilizing descriptive and predictive approach was employed in the conduct of this study. Descriptive studies describe the nature of a situation as it exists, explores, and documents the course of a

Null hypothesis

particular phenomenon; events, beliefs, attitudes, structures, processes and salient behaviours (Polit & Beck, 2012). In this study, descriptive approach was used to describe the hypertensive adults' typology as well as their self-care behaviors in the management of hypertension.

Meanwhile, predictive analysis is the application of empirical evidence to forecast about how variables will behave in a new setting and with different individuals (Polit & Beck, 2012). In this study, it attempted to investigate whether hypertensive adults' typology significantly influence their self-care behaviors in terms of diet, exercise, habits, and medication in the management of hypertension.

The study was conducted in the thirty-nine (39) municipalities of Lanao del Sur under the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), and is dominated by Meranao tribe or commonly known as People of the Lake, a member of Muslim communities in the Philippines (Philippine Statistics Authority, 2017).

Participants and Sampling

Hypertensive adults as respondents of this study were residents of any municipalities of Lanao del Sur ages 20 years old and above regardless of their socio-demographic profiles and must be known or medically diagnosed with any type of hypertension for at least one (1) year and must be living within their respective municipality for the last six (6) months.

Moreover, a total of three-hundred (300) respondents participated in this study using probability stratified – random sampling in selecting its participants to assure its representativeness from the total population. This design subdivides the population into homogenous subsets from which an appropriate number of elements are selected at random (Polit and Beck, 2012).

Instrument and Data Gathering Procedures

Self – administered questionnaire (SAQ) was used in the data gathering procedures after careful and thorough evaluation of its validity and reliability from panel of experts and pre-pilot test of individuals who shares similar characteristics as to the target respondents respectively. Both validity and reliability tests are important matrices for evaluating methods to measure the research variables (Polit and Beck, 2012).

In gathering the data, the researchers' secured a permission to conduct by submitting an intent letter addressed to the heads of each municipality's where the researchers plan to distribute their research tools. Prior to questionnaires' distribution, a written consent addressed to the target participants was also secured. Purpose of the study and their rights as respondents was discussed and assured by the researchers throughout the conduct of this study. In assessing the blood pressure typology of the hypertensive adults as part of the questionnaire

tool, basic principles in fundamentals of nursing was observed to effectively and accurately measure their respective results (Berman et al., 2016).

Ethical Considerations

Prior to the actual implementation of this study, a compliance checklist was reviewed and approved by panel of ethics experts from Mindanao State University – College of Health Sciences and Mindanao Institute of Healthcare Professionals Incorporated as part of the research protocol. Informed written consent was also obtained from all the participants prior to data collection. Hypertensive adult respondents were aware that they are allowed to refuse and stop in answering questions anytime without any reason.

Statistical Tools

Using IBM SPSS version 23, descriptive (frequency, percentage, mean, and standard deviation) and inferential statistics using simple linear regression were applied to analyse the available data from the respondents of this study.

Results and Discussion

The flow of the presentation, discussion and analysis of data follows the pattern of the study's statement of the problem.

A. Hypertensive Adults Typology

Table 1 shows the frequency and percentage distribution of the typology of hypertensive adults. Finding shows that half of the hypertensive respondents have a family history of hypertension (50.3%). Upon assessment of their blood pressure, it was found out that majority of them are on stage 1 and 2 hypertension, (39.3%) and (22%) respectively. Moreover, when they were asked if they had a blood pressure reading of 140/90 mmHg or above in the previous month, it shows a higher number of yes responses (92.7%). Symptoms of hypertension they had were related to dizziness (49.7%), blurry vision (28.1%), and headaches (17.6%), whereas fewer symptoms reported are chest pain and other non-specific related symptoms (1.2%). Most of them claimed that increased blood pressure had affected their ability to perform usual daily activities (86.3%).

Table 1: Frequency and Percentage Distribution of Hypertensive Adults Typology

Typology of Hypertensive Adults		Frequency	Percentage
<i>Do you have a family history of Hypertension?</i>	Yes	151	50.3
	No	149	49.7
<i>Blood Pressure (upon the start of data gathering):</i>			
Pre- Hypertension (120-139/80-89 mmHg)		90	30.0
Stage 1 (140-159/90-99 mmHg)		118	39.3
Stage 2 (above 160/ above 100 mmHg)		66	22.0
Stage 3 (above 180/ above 110 mmHg)		26	8.7
<i>Have you had a blood pressure reading of 140/90 mmHg or above in the last month?</i>	Yes	278	92.7
	No	22	7.3
<i>Which of the following symptoms have you had?</i>	Blurry Vision	147	28.1
	Chest Pain	13	2.5
	Dizziness	260	49.7
	Headaches	92	17.6
	None	5	1.0
	Other (specify)	6	1.2
<i>Does high blood pressure affect your ability to perform your usual daily activities?</i>	Yes	259	86.3
	No	41	13.7

One way to manage high blood pressure among hypertensive adults is to involve them with their own surveillance (Fazel et al., 2016). This typology of hypertensive adults implies that hypertensive clients in this study have acknowledged the negative influence and effects of their respective hypertensive state with respect to their health status and the usual activities they perform. Similarly, majority of community clients in China with hypertension did not meet the ideal recommended blood

pressure targets among their age groups (Qu et al., 2019). Moreover, Gebremichael et al. (2019) found out that majority (76.2%) of hypertensive patients in Ethiopia had an average blood pressure reading of $\geq 140/90$ mmHg during their three consecutive consultations, and 30.3% of them has a family history of hypertension. Typologies such as economic status, family history, and health – seeking behaviors are some of the identified factors being linked with this variable (Legesse et al., 2019; Qu et al., 2019).

B. Self – Care Behaviours in the Management of Hypertension.

b.1: Diet as Self – Care Behavior in the Management of Hypertension

Table 2: Mean and Standard Deviation, Diet as Self-Care Management of Hypertension

Diet as Self-Care Management of Hypertension	Mean	Standard Deviation	Descriptive Rating
<i>In terms of diet, I am preventing possible increase of blood pressure by:</i>			
1. Avoiding salty, fatty, and oily foods that can increase my blood pressure.	2.72	.929	Often
2. Eating more fruits and vegetables every day.	3.61	.626	Always
3. Eating more whole grain products, fish, poultry, and nuts every day to reduce high blood pressure.	3.38	.859	Always
4. Restricting from drinking caffeinated drinks that can be at risk for hypertension.	2.66	1.033	Often
5. Drinking 8 -12 glasses of water a day.	3.40	.806	Always
Weighted Mean	3.154		Often

Scaling: 1.00-1.75 = Never; 1.76-2.50 = Sometimes; 2.50-3.25 = Often; 3.26-4.00=Always

Table 2 shows the mean and standard deviation of diet as self-care behaviors of the respondents in the management of hypertension. In terms of diet, hypertensive client as respondents claimed that they prevent possible increase of their blood pressure by “always” eating more fruits and vegetables every day (\bar{x} =3.61, $SD\pm$.626) as well consuming more whole grain products, fish, poultry, and nuts

every day (\bar{x} =3.38, $SD\pm$.859), and drinking 8 - 12 glasses of water a day (\bar{x} =3.40, $SD\pm$.806). Oftentimes, they believe that they could prevent possible increase of blood pressure by avoiding salty, fatty, and oily foods (\bar{x} =2.72, $SD\pm$.929), and restriction from drinking caffeinated beverages that can be a risk of hypertension (\bar{x} =2.66, $SD\pm$ 1.033). In general, hypertensive adults in this study often considered diet as an

important self-care behaviors in the management of hypertension (\bar{x} =3.154).

Findings above imply that hypertensive adults as respondents of the study are often conscious about their dietary lifestyle in the management of hypertension. Similarly, hypertensive patients in Sri Lanka have concluded that lifestyle modifications including dietary restrictions were useful approach in the management of high blood pressure and its related complication (Kisokanth et al., 2018). Systematic reviews have revealed that dietary lifestyle changes may safely and effectively prevent and improve high blood pressure among individuals including those at risk and known to be with hypertension problem (Mejia et al., 2019). Dietary Approaches to Stop Hypertension (DASH) which includes consuming more fruits and vegetables, strict compliance with low fat dairy products, whole grain foods, fish, lean meats, poultry, nuts, and low in sodium and sugar as well as increasing fluid intake has always been effective and highly recommended by health experts as primary dietary approach in the management and prevention of hypertension and its related complication (Organia et al., 2019; Simces, Ross, & Rabkin, 2012).

b.2: Exercise as Self – Care Behavior in the Management of Hypertension

Table 3 above shows the mean and standard deviation of exercise as self-care behaviors in the management of hypertension. In terms of exercise, hypertensive client as respondents claimed that they prevent possible increase of their blood pressure by “always” walking for at least 20-30 minutes a day (\bar{x} =3.66, $SD\pm .657$). They “often” do stretching for at least 5-10 minutes a day (\bar{x} =2.71, $SD\pm .928$), and jog or run for at least 15-20 minutes a day (\bar{x} =2.53, $SD\pm .905$). Meanwhile, hypertensive adults “sometimes” perform aerobics physical activities, dance or zumba for 10-15 minutes a day (\bar{x} =1.79, $SD\pm .895$). However, riding a bike is not part of their daily activities to control their respective blood pressure (\bar{x} =1.57, $SD\pm .960$). In general, hypertensive adults considered exercise self-care behaviors as sometimes effective strategy to manage hypertension (\bar{x} =2.452).

Table 3: Mean and Standard Deviation, Exercise as Self-Care Management of Hypertension

Exercise as Self-Care Management of Hypertension	Mean	Standard Deviation	Descriptive Rating
<i>In terms of exercise, I am preventing possible increase of blood pressure by:</i>			
1. Walking for at least 20-30 minutes a day to control my blood pressure.	3.66	.657	Always
2. Jogging or run for at least 15- 20 minutes a day.	2.53	.905	Often
3. Stretching for at least 5-10 minutes a day.	2.71	.928	Often
4. Doing aerobics physical activities /dance /Zumba for 10-15 minutes a day.	1.79	.895	Sometimes
5. Riding a bike every day to control my blood pressure.	1.57	.960	Never
Weighted Mean	2.452		Sometimes
Scaling: 1.00-1.75 = Never; 1.76-2.50 = Sometimes; 2.50-3.25 = Often; 3.26-4.00=Always			

Findings above imply that hypertensive client as respondents of the study are occasionally concern on doing regular exercise to halt the possible increase of blood pressure. This is similar with the studies in Ethiopia and Jordan where most of the hypertensive participants have poor engagement on regular exercise (Legesse et al., 2019). Thus, this result is quite perturbing considering that scientific evidences suggest that physical activity or exercise plays an important factor in the management and prevention of hypertension and

its related complications (Mendes et al., 2015). Physical exercise for at least thirty (30) minutes a day including aerobic activities has been proven by literatures and clinical trials to improve one’s blood pressure among hypertensive clients, and both useful in the prevention and management of hypertension cases (Legesse et al., 2019; Bagale, 2016).

b.3: Habits as Self – Care Behavior in the Management of Hypertension

Table 4 shows the mean and standard deviation of habits as self-care behaviors in the management of hypertension. In terms of habits, hypertensive adults as respondents claimed that they prevent possible increase of their blood pressure by “always” sleeping 7- 8 hours a day (\bar{x} =3.43, $SD\pm$.783); spending enough time to rest, relax, or take a nap to reduce or prevent them from stress (\bar{x} =3.48, $SD\pm$.828); and provides help in household chores daily (\bar{x} =3.27,

$SD\pm$.861). Oftentimes, part of their habits in the self-care management of hypertension are to restrict from using cigarettes or tobacco for smoking (\bar{x} =3.04, $SD\pm$ 1.116) and consulting a doctor or healthcare professionals for blood pressure check-ups (\bar{x} =3.04, $SD\pm$.841). In general, hypertensive adults have considered some important habits as often important in self-care management of hypertension (\bar{x} =3.252).

Table 4: Mean and Standard Deviation, Habits as Self-Care Management of Hypertension

Habits as Self-Care Management of Hypertension	<i>Mean</i>	<i>Standard Deviation</i>	<i>Descriptive Rating</i>
<i>In terms of habits, I am preventing possible increase of blood pressure by:</i>			
1. Restrict from smoking cigarettes or tobacco that can increase my blood pressure and not smoking at all if smoker or non-smoker respectively.	3.04	1.116	Often
2. Sleeping 7- 8 hours a day.	3.43	.783	Always
3. Resting, relaxing, or taking a nap to reduce or prevent from stress that can increase my blood pressure.	3.48	.828	Always
4. Doing or help in household chores every day.	3.27	.861	Always
5. Seeing the doctor/ healthcare professionals for blood pressure check- ups.	3.04	.841	Often
Weighted Mean	3.252		Often

Scaling: 1.00-1.75 = Never; 1.76-2.50 = Sometimes; 2.50-3.25 = Often; 3.26-4.00=Always

Findings above imply habits as an important factor to be kept abreast off in the prevention and management of high blood pressure. Hypertensive adults in this study are not just diet and physically conscious but also are involve in other lifestyle habits that could maintain and manage their blood pressure. Literatures revealed that non-pharmacological interventions including stress management (e.g. taking enough and adequate rest periods, having vacations, and doing the things that makes you

happy) helps in improving the blood pressure reading among hypertensive individuals (Mejia et al., 2019). Meanwhile, social support like seeking of professional help (e.g. health experts) has been found to be effective in increasing individuals self-efficacy and development of better self-care behaviors in the prevention and management of hypertension among people of the community with known condition (Yuan, 2018).

b.4: Medication as Self – Care Behavior in the Management of Hypertension

Table 5: Mean and Standard Deviation, Medications as Self-Care Management of Hypertension

Medications as Self-Care Management of Hypertension	Mean	Standard Deviation	Descriptive Rating
<i>In terms of Medications, I am preventing possible increase of blood pressure by:</i>			
1. Taking my medications for high blood pressure every day.	3.31	.693	Always
2. Checking the expiration of my medicine before taking.	3.11	.918	Often
3. Taking my medicine with water and food.	3.81	.458	Always
4. Taking medications prescribed by my doctor.	3.45	.793	Always
5. Taking herbal medicine (e.g. garlic, ginger, etc.) as alternative treatment to manage my blood pressure.	3.00	.816	Often
Weighted Mean			
		3.336	Always

Scaling: 1.00-1.75 = Never; 1.76-2.50 = Sometimes; 2.50-3.25 = Often; 3.26-4.00=Always

Table 5 shows the mean and standard deviation of medication as self-care behaviors in the management of hypertension. In terms of medication, hypertensive adults as respondents claimed that they prevent possible increase of their blood pressure by “always” taking medications for high blood pressure every day ($\bar{x}=3.31$, $SD\pm .693$) and those prescribed by their respective doctors ($\bar{x}=3.45$, $SD\pm .793$), and take those medications with water and food ($\bar{x}=3.81$, $SD\pm .458$). Meanwhile, “oftentimes” hypertensive adults make sure to check the expiration date of their medications before consuming ($\bar{x}=3.11$, $SD\pm .918$), and would considered using herbal medicines (e.g. garlic, ginger, etc.) as alternative treatment to manage my blood pressure ($\bar{x}=3.00$, $SD\pm .816$). In general, use of medication has always been perceived as effective means of self-care behaviors in the management of hypertension ($\bar{x}=3.336$).

Findings above imply that hypertensive clients as respondents of this study are highly compliant to medication regimen prescribed by medical doctor or physician. Similarly, (Kisokanth et al., 2018) literature have found that majority of hypertensive patients agreed that doctors listen and understand their concerns during hospital visits, and clearly explains their condition with regards to hypertension. This result reveals important information for both medical practitioners and health experts to

effectively treat and manage high blood pressure among hypertensive adults. Meanwhile, herbal remedies are getting more significance in the treatment of hypertension in both developed and developing countries because of the known side effects of modern synthetic medicines and its economic disadvantage (Lakshmi, Roy, Durgha, & Manjusha, 2011).

C. Significance Influence between Hypertensive Adults Typology and their Self – Care Behaviours in the Management of Hypertension.

Table 6 shows the significant influence between hypertensive adults’ typology and their self-care behaviors in the management of hypertension. In general, result shows that variables under consideration have good probability of predicting an influence to the end variable, self-care behaviours in the management of hypertension ($r^2=0.968$). However, particular variables such as family history of hypertension and hypertensive experience in the previous month has no significant influence with self-care behaviours in the management of hypertension ($p=0.857$ and $p=0.676 > 0.05$ α level respectively). Meanwhile, typology of respondents in terms of the current blood pressure, symptoms of hypertension, and effects of elevated blood pressure to activities of daily living has significant influence with self-care behaviors in

the management of hypertension ($p=0.000$, respectively).
 $p=0.000$, and $p=0.000 < 0.05$ α level

Table 6. Significant Influence, Respondent's Profile and Self-care Management of Hypertension

Variables	Statistical Tools	R Square	Standardized Beta Value	Significance (p Value)	Interpretation
1. Family history of hypertension.			0.009	.857	Not Significant
2. Blood pressure.			-0.530	.000	Significant
3. Hypertensive experience in previous month.	Self – Care Behaviours in the Management of Hypertension	0.968	0.007	.676	Not Significant
4. Symptoms of hypertension.	Simple Linear Regression		-0.404	.000	Significant
5. Effects of BP to activities of daily living.			-0.179	.000	Significant

Note: Alpha level of significance = 0.05 (2-tailed)

Results of this simple linear regression implies that most of the significant influencers of hypertensive adults' self-care behaviors in the management of hypertension are those factors that is currently or presently being experienced by the participants; actual and sudden increase of blood pressure, sign and symptoms of hypertension they had experienced, and the effects of blood pressure in their activities of daily living. This further supports the result of a study in Ethiopia wherein controlled blood pressure was found out to have good statistical association ($p=0.011$) with hypertensive patients' self-care practice (Gebremichael et al., 2019). Further, this is backed by the study in Iran claiming that hypertensive clients tend to be more likely compliant and concern with their self-care behaviors when they had experienced striking health problems (Fazel et al., 2016).

Conclusion

Joint scientific evidences from literatures have concluded the compliance of hypertensive adults in the practice of self-care behaviors is an effective and efficient means of controlling and maintaining one's blood pressure as well as reduces the possibility of developing complications leading to hypertension related deaths. However, factors such as blood pressure readings, symptoms of hypertension, and its effects on activities of daily living among hypertensive adults should be taken into consideration as important significant predictors of one's self-care behaviors' compliance in the management of hypertension. In footnote, it is highly recommended by the researchers to: (a) improve and strengthen the health – education platforms among hypertensive clients to effectively influence one's self-care behaviors, (b) healthcare professionals including nurses, doctors, and midwives as public health front liners should put more emphasis on the context of hypertension self-care to improve patients' self-care behaviors in the management of hypertension, (c) emphasis must be strengthen in the

context of exercise as means of self-care strategies in the management of hypertension considering the low adherence of most hypertensive population on this aspect, (d) constantly monitor and assess the improvement of hypertensive adults' compliance with scientific self-care behaviors in the management of hypertension among communities, and (e) involve patients' social support system to efficiently implement one's self-care behaviour practices in the management of hypertension.

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