

TITLE: LEVEL OF AWARENESS AND PRACTICE OF LIFESTYLE MODIFICATIONS AMONG ADULT HYPERTENSIVE PATIENTS AT THE OUT-PATIENT DEPARTMENT OF REMEDIOS TRINIDAD ROMUALDEZ HOSPITAL

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ABSTRACT

Introduction

Hypertension is a known risk factor for cardiovascular diseases with high prevalence. Appropriate lifestyle modifications have been advocated to its management. This study aimed to describe the level of awareness and practice of lifestyle modifications among adult hypertensive patients in our local setting.

Methods

A cross-sectional prospective study was conducted among eighty adult hypertensive patients seen at the Out-Patient Department (OPD) of Remedios Trinidad Romualdez Hospital (RTRH). Patients were interviewed using a validated researcher-made survey questionnaire as data collection tool from July 2019 to July 2020. Descriptive statistics were utilized.

Results

Among the eighty adult hypertensive patients seen, the mean age was 62 years old. Majority were females, overweight to obese, were able to receive a secondary to tertiary level of education and had no co-morbid illness.

Majority of the respondents agreed to the different statements pertaining to the recommended lifestyle modifications.

More than 1/3 of the respondents followed the diet-related recommendations; in contrast, more than 1/3 of the respondents practiced otherwise.

Fifty-five of the hypertensive patients were non-smokers. Thirty-three of the respondents were non-alcoholics. Of the 47 active alcoholic respondents, only 9 always practiced moderate alcohol consumption.

Fifty-three of the hypertensive patients were performing physical exercises. Twenty-four of them were exercising everyday while 28 were doing 16 – 30 minutes of exercises per day.

Conclusion

The adult hypertensive patients seen at the Out-Patient Department of Remedios Trinidad Romualdez Hospital (RTRH) were knowledgeable of the recommended lifestyle modifications.

The respondents were not consistent with following the diet-related recommendations. More than 2/3 of the alcoholic respondents did not practice moderate alcohol consumption most of the time.

Majority of the respondents were non-smokers and were engaging in physical exercises in most days of the week, with most of them reaching almost 30 minutes-duration of exercise per day.

CHAPTER I INTRODUCTION

Background of the Study

Hypertension is the largest risk factor for cardiovascular diseases, growing in prevalence and poorly controlled virtually everywhere. By 2030, 23 million cardiovascular deaths are projected, with 85% occurring in low- and middle-income countries.¹

Hypertension doubles the risk of cardiovascular diseases, including coronary heart disease (CHD), congestive heart failure (CHF), ischemic and hemorrhagic stroke, renal failure, and peripheral arterial disease.²

According to Food Nutrition Research Institute (FNRI), the National prevalence of hypertension among Filipino adults (20 years old and over), had significantly increased after a decline in 2013 from 22.3% to 23.9% in 2015. DOH also revealed that hypertension remains to be the leading cause of illness and said to be one of the identified precipitating factors of premature death in the Philippines.³

Accumulating evidence has shown that appropriate lifestyle modification serves as an adjunct to the management of hypertension and reduces the risk of hypertension and its primary co-morbidities. Lifestyle modification therefore has a great impact on the success or failure of therapeutic management of hypertension.⁵

Several studies all over the world have been done to assess the knowledge or awareness and practice of lifestyle modifications among adult hypertensive patients; however, there is paucity of research on these aspects here in the Philippines from available literature; hence, the conduct of this investigation.

The study aimed to describe the level of awareness and practice of lifestyle modifications among adult hypertensive patients in our local setting and to aid in the creation of effective strategies to control hypertension and its associated life-threatening complications.

Significance of the Study

In the Philippines, a study shows that deaths and burden of disease attributable to hypertension significantly grew over the last three decades. With the consistent prevalence rate, projected number of Filipino adults with hypertension is expected to grow almost double in the year 2050⁴; hence, this study was realized, focusing more on the level of awareness and practice of adult hypertensive patients of the recommended lifestyle recommendations.

The results of this study will be of immense benefit primarily to the patients; to the health workers and educators such as doctors, nurses, midwives who are in direct care of these patients.

Moreover, the results of this study will provide basis as to which recommended lifestyle modifications should be given emphasis in terms of implementation among hypertensive patients, so that risks and complications associated with hypertension will be controlled.

Likewise, to the Department of Health, information that will be derived from the study can be used as part of their inputs in formulating policies and developing programs that will aid in the adherence among hypertensive patients to the recommended lifestyle modifications.

Objectives of the Study

General Objective:

To assess the level of awareness and practice of recommended lifestyle modifications among Adult Hypertensive patients seen at the Out-Patient Department of Remedios Trinidad Romualdez Hospital (RTRH).

Specific Objectives:

1. To describe the profile of Adult Hypertensive patients seen at the Out-Patient Department of Remedios Trinidad Romualdez Hospital (RTRH).
2. To determine the different sources of information about lifestyle modification practices among adult hypertensive patients seen at the Out-Patient Department (OPD) of Remedios Trinidad Romualdez Hospital (RTRH).
3. To assess the level of knowledge and practice of the recommended lifestyle modifications among all adult hypertensive patients seen at the Out-Patient Department (OPD) of Remedios Trinidad Romualdez Hospital (RTRH).

Scope and Limitations of the Study

The study was limited to adult hypertensive patients seen at the Out–Patient Department (OPD) of Remedios Trinidad Romualdez Hospital (RTRH) from July 2019 to July 2020 who satisfied the criteria set in the conduct of the study. This includes all newly / previously diagnosed hypertensive patients, aged 19 years old and above, currently taking anti–hypertensive medications or not, must be ambulatory without acute illness for the past two (2) weeks prior to the conduct of the study, have consented to be included in the study population and have no previous history of myocardial infarction (MI) or other critical illness within two (2) weeks prior to the conduct of the study.

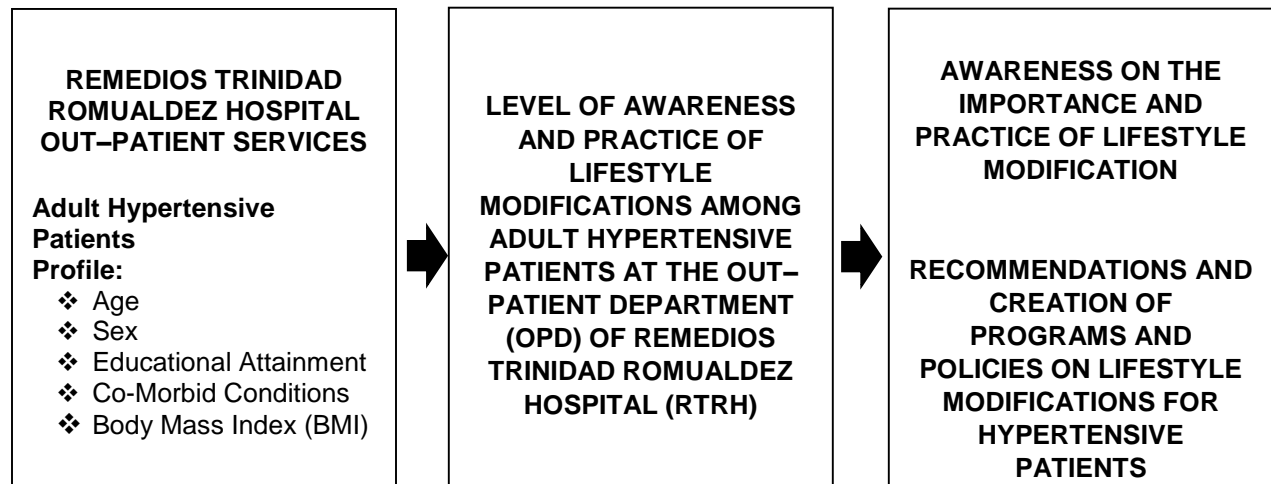


Fig. 1. Flowchart of the Basic Conceptual Framework of the Study.

Definition of Terms

To facilitate understanding in this study; the following terms are defined:

Profile. This is operationally defined as such which describes or relating to the respondents in terms of Age, Sex, Educational Attainment, Co-Morbid conditions and Body-Mass Index (BMI).

Body Mass Index (BMI). Is a person’s weight in kilograms divided by the square of height in meters. A high BMI can be an indicator of high body fatness. BMI can be used to screen for weight categories that may lead to health problems but it is not diagnostic of the body fatness or health of an individual. (<https://www.cdc.gov/healthyweight/assessing/bmi/index.html>)

Adult Hypertensive Patients. This is operationally defined in the study as all newly / previously diagnosed hypertensive patients, aged 19 years old and above, currently taking anti-hypertensive medications or not, must be ambulatory without acute illness for the past two (2) weeks prior to the conduct of the study, have consented to be included in the study population and have no previous history of myocardial infarction (MI) or other critical illness within two (2) weeks prior to the conduct of the study.

Co-Morbid Conditions. This is operationally defined as the presence of one or more additional conditions often co-occurring (that is, concomitant or concurrent with) with the primary condition of the respondent which is hypertension.

Awareness. Is the state or ability to perceive, to feel, or to be conscious of events, objects, or sensory patterns. In this level of consciousness, sense data can be confirmed by an observer without necessarily implying understanding. More broadly, it is the state or quality of being aware of something. In biological psychology, awareness is defined as a human's or an animal's perception and cognitive reaction to a condition or event. (<https://www.definitions.net/definition/awareness>). In the study, this was also used interchangeably with the term 'knowledge'.

Practice. Is something that is usually or regularly done, often as a habit, tradition or custom. (<https://dictionary.cambridge.org/us/dictionary/english/practice>)

Lifestyle Modifications. This term is operationally defined as the recommended lifestyle recommendations among adult hypertensive patients based on the JNC 7 Guidelines on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure which includes the ff: adopting a DASH diet, dietary sodium reduction, physical activity, moderation of alcohol consumption and smoking cessation.

CHAPTER II

METHODOLOGY

Research Design

The descriptive – cross – sectional method of research was utilized in this study.

Research Respondents

The respondents of the study were adult hypertensive patients seen at the out–patient department (OPD) of Remedios Trinidad Romualdez Hospital (RTRH) from July 2019 to July 2020.

The sample size of the study was estimated using the sampling for proportion method. The confidence interval was set at 95% with a corresponding margin of error at 5%. The estimated population size was one hundred (100) adult hypertensive patients. Using the sample for proportion formula, the results yielded a recommended sample size of eighty (80) hypertensive patients. The formula for the determining the estimated sample size is as follows: (Yamane, Taro, 1967: *Statistics, An Introductory Analysis, 2nd Edition, Harper and Row*)

$$n = \frac{N}{1 + N(e)^2}$$

where:

n = Sample Size

N = Population Size

e = Confidence Interval (.05)

Data Gathering Procedure

The study was conducted in RTR Hospital, a level II modern medical center with a 100-hospital bed capacity and has a level II accreditation from the Philippine College of Physicians Internal Medicine Residency Training. Its outpatient services include multi-specialty clinics which cater to nearly 200 ambulatory patients per month of varying medical conditions.

Eighty (80) hypertensive patients were chosen as the primary respondents and were given by the researcher–made survey questionnaire.

Research Instrument

A researcher-made questionnaire was utilized as a data gathering tool to answer the research objectives. A face-to-face interview utilizing the structured survey form was administered by the researcher and a qualified research assistant during the 12-month study period. Informed consent was sought and patient information sheet about the study was provided. Free translation was done by the researcher and the research assistant of the questions

in the level of awareness and practice of lifestyle recommendations. The research instrument has undergone pretesting to 24 patients in the OPD in RTR Hospital last June 2019 to determine the reliability of the questionnaire in the level of awareness and practice of recommended lifestyle modifications among hypertensive patients. The reliability of the research questionnaire was determined based on the computed Cronbach's alpha. The overall result of the Cronbach's alpha yielded a value of 0.7 which indicates that the researcher-made survey questionnaire is a reliable research instrument and can be utilized in the study.

A letter to grant the conduct of the study in the hospital including the approved research proposal was given to the Medical Director and Hospital Administrator. Ethics approval from the hospital Ethics board was secured. Once approved, the data collection process started.

After the study, the information collected was processed and encoded in Excel format for analysis in the SPSS software version 25. Managed data were treated with utmost confidentiality and survey forms were discarded thru shredding.

Scoring and Interpretation

The statistical measures that were utilized in the study are descriptive statistics in the form of frequency count, percentage distribution, mean scores and the corresponding qualitative description of each mean range.

Knowledge. To measure the over-all level of knowledge of recommended lifestyle modifications among hypertensive patients seen at the OPD of RTRH.

Mean Range	Qualitative Description
4.5 – above	Very Knowledgeable
3.50 – 4.49	Knowledgeable
2.50 – 3.49	Moderately Knowledgeable
1.50 – 2.49	Slightly Knowledgeable
1.00 – 1.49	Unknowledgeable

Practice. To measure the level of practice of recommended lifestyle modifications among hypertensive patients seen at the OPD of RTRH.

Mean Range	Qualitative Description	Frequency / Week	% of the time*
4.5 – above	Always Practiced	7x a week	81-100%

3.50 – 4.49	Often Practiced	5-6x a week	61-80%
2.50 – 3.49	Sometimes Practiced	3-4x a week	41-60%
1.50 – 2.49	Seldom Practiced	1-2x a week	21-40%
1.00 – 1.49	Never Practiced	None	0-20%

*This applies to alcohol consumption. (e.g. if respondent answers ‘sometimes’, it means 41-60% of the time, every time he/she is drinking alcoholic beverages, he/she practices moderate alcohol consumption; that is, ≤ 2 drinks/day in men and ≤ 1 drink/day in women)

Statistical Treatment

The data collected were carefully analyzed, tabulated and were subject to statistical treatment such as frequency counts, percentages and weighted means of the adult hypertensive patient’s responses.

To describe the responses of the patients in terms of age, sex, educational attainment, co-morbidity, body mass index and lifestyle modifications, descriptive statistics was used; frequency count, percentages and weighted mean were used.

Weighted mean was used to analyze the patient’s overall knowledge and practice on the recommended lifestyle modifications on hypertensive patients. The following formula was used:

$$\bar{X} = \frac{\sum fx}{n}$$

where:

\bar{X} – Weighted Mean

f – frequency

x – weights

n – total number of respondents

All computations and analysis were checked using Statistical Packages for Social Sciences (SPSS) Software Version 25.

CHAPTER III RESULTS AND DISCUSSION

PROFILE OF THE ADULT HYPERTENSIVE PATIENTS

Table I shows the distribution of the patient's profile in terms of age, sex, body mass index (BMI), educational attainment and co-morbid conditions.

Table I. Socio-Demographic Profiles and Health Variables of the Hypertensive Patients Seen at the OPD of RTRH

Variable	Category	Frequency (N=80)	Percentage (%)
Age	26 – 35 years old	1	1.25
	36 – 45 years old	6	7.50
	46 – 60 years old	29	36.25
	>60 years old	44	55
Sex	Male	32	40
	Female	48	60
BMI (kg/m ²)	<18.5 (Underweight)	3	3.75
	18.5 – 22.9 (Normal)	14	17.50
	23 – 24.9 (Overweight)	13	16.25
	25 – 29.9 (Obese Class I)	34	42.50
	≥ 30 (Obese Class II)	16	20
Educational Attainment	Elementary Level	9	11.25
	Elementary Graduate	1	1.25
	Secondary Level	16	20
	Secondary Graduate	17	21.25
	College Level	13	16.25
	College Graduate	21	26.25
	Post Graduate	3	3.75
Co-Morbid Conditions	Diabetes Type 2	12	15
	Chronic Kidney Disease	2	2.50
	Congestive Heart Failure	1	1.25
	Chronic Sinusitis	1	1.25
	Diabetes Mellitus & Congestive Heart Failure	2	2.50
	Diabetes Mellitus & Chronic Kidney Disease	1	1.25
	Osteoarthritis & Bronchial Asthma	1	1.25
	Dyslipidemia & Bronchial Asthma	1	1.25
	No Co-Morbidity	59	73.75

Most of the respondents were 61 years old and above with a frequency of 44 followed by those aging from 46 – 60 years old, with 29 in number. Mean age was 62 years old. Therefore, majority of the respondents were 46 years old and above. Female patients predominated the total sampled population with a frequency of 48 compared to male respondents with a frequency of 32. Most of the respondents had a body mass index (BMI) of 25 – 29.9 (Obese Class I) with a frequency of 34, followed by patients having a BMI of 18.5 – 24.9 (Normal-Overweight), and a BMI of 30 and above (Obese Class II) with a frequency of 27 and 16 respectively. Therefore, most of the respondents were overweight and obese based on the Asia-Pacific Classification. Most of the hypertensive patients were college graduates accounting for 21 (26.25%) of the total

respondents, followed by those who graduated in the secondary level with a frequency of 17, then followed closely by respondents attaining a secondary level of education with 16 in number. Therefore, most of the respondents received secondary to tertiary level of education. Fifty-nine of the hypertensive patients had no co-morbid conditions, followed by respondents with Type 2 Diabetes Mellitus, with a frequency of 12. Therefore, majority of the respondents had no co-morbidity.

Distribution on the Level of Awareness About Lifestyle Modifications Among Hypertensive Patients Seen at the OPD of RTRH

Table II shows the distribution of the adult hypertensive patients' level of awareness about the overall recommended lifestyle modifications.

Table II. Distribution on the Level of Awareness About Lifestyle Modifications Among Hypertensive Patients Seen at the OPD of RTRH

Lifestyle Modification Practices	Strongly Disagree		Disagree		Neither Agree Nor Disagree		Agree		Strongly Agree	
	f	%	f	%	f	%	f	%	f	%
All hypertensive patients should stop smoking.	3	3.75	1	1.25	1	1.25	10	12.50	65	81.25
All hypertensive patients should have a diet low in salt, high in fruits and vegetables, reduced saturated and total fat.	5	6.25	-	-	5	6.25	15	18.75	55	68.75
All hypertensive patients should practice moderate alcohol consumption. (≤ 2 drinks/day in men and ≤ 1 drink/day in women)	3	3.75	-	-	1	1.25	26	32.50	50	62.50
All hypertensive patients should engage in aerobic activity (at least 30 mins exercise per day).	5	6.25	3	3.75	4	5	17	21.25	51	63.75
Lifestyle Modification Practices					Mean		Qualitative Description			
All hypertensive patients should stop smoking.					4.66		Very Knowledgeable			
All hypertensive patients should have a diet low in salt, high in fruits and vegetables, reduced saturated and total fat.					4.44		Knowledgeable			
All hypertensive patients should practice moderate alcohol consumption. (≤ 2 drinks/day in men and ≤ 1 drink/day in women)					4.50		Very Knowledgeable			
All hypertensive patients should engage in aerobic activity (at least 30 mins exercise per day).					4.33		Knowledgeable			
Overall Mean					4.48		Knowledgeable			

Most of the adult hypertensive patients strongly agreed about the different statements on the recommended lifestyle modification practices. Sixty-five of them strongly agreed that "All hypertensive patients should stop smoking"; 55 of the respondents strongly agreed that "All hypertensive patients should have a diet low in salt, high in fruits and vegetables, reduced

How often do you include fruits, vegetables, grains, and beans in your diet?	1	1.25	15	18.75	31	38.75	16	20	17	21.25		
How often do you consume foods that contain high saturated fat?	4	5	23	28.75	29	36.25	18	22.50	6	7.50		
How often do you consume salt in your food?	6	7.50	14	17.50	23	28.75	27	33.75	10	12.5		
Diet – Related Recommendations					Mean		Qualitative Description					
How often do you include fruits, vegetables, grains and beans in your diet?					3.41		Sometimes Practiced					
How often do you consume foods that contain high saturated fat?					2.99		Sometimes Practiced					
How often do you consume salt in your food?					3.26		Sometimes Practiced					
Overall Mean					3.22		Sometimes Practiced					
Cigarette Smoking Cessation Practices					YES			NO				
					f		%	f		%		
Have you ever smoked cigarettes?					25		31.25	55		68.75		
Do you still smoke cigarettes?					4		16	21		84		
Have you tried to quit smoking?					4		100	-		-		
Alcohol Consumption Practices			Non – Alcoholic		Alcoholic							
					Seldom		Sometimes		Often		Always	
			f	%	f	%	f	%	f	%		
I practice moderate alcohol consumption. (≤2 drinks/day in men and ≤1 drink/day in women)			33	41.25	26	32.50	9	11.25	3	3.75	9	11.25
Exercise Related Issues					YES			NO				
Do you perform physical exercise?					53		66.25	27		33.75		
					f		%					
How often do you exercise?					13		24.53					
1 – 2x per week					12		22.64					
3 – 4x per week					4		7.55					
5 – 6x per week					24		45.28					
Everyday					f		%					
For how long do you exercise per session?					15		28.30					
<15 mins per day					28		52.83					
16 – 30 mins per day					1		1.89					
31 – 45 mins per day					7		13.21					
46 – 60 mins per day					2		3.77					
61 mins and above												

Thirty-one of the adult hypertensive patients sometimes (3–4x per week) ate a diet which includes fruits, vegetables, grains and bean while 29 of the them sometimes (3–4x per week) consumed foods that contains high level of saturated fats. Twenty-seven of the respondents often (5–6x per week) ate a diet which includes salt in the food. From the data, it can be inferred that more than 1/3 of the respondents' diet included the recommended intake of fruits, vegetables, grain and beans; nevertheless, more than 1/3 of the respondents also consumed foods that contain high saturated fats and salt.

Overall mean of the different practices about the diet – related recommendations of the adult hypertensive patients was 3.22 which corresponds to the qualitative description of “sometimes practiced”. “including fruits, vegetables, grains and beans in diet” had the highest mean of 3.41 which corresponds to the qualitative description of “sometimes practiced”;

followed by “including salt in food” with a mean of 3.26 which corresponds to the same qualitative description; while “consuming foods with high saturated fat content” had the lowest mean of 2.99 which corresponds also to the qualitative description of “sometimes practiced”. This means that the adult hypertensive patients seen at the out-patient department of Remedios Trinidad Romualdez Hospital (RTRH) had relatively the same frequency of eating a diet which includes fruits, vegetables, grains and beans with consuming foods with high contents of saturated fat and salt.

Fifty-five of the hypertensive patients were non-smokers while 25 of them have smoked a cigarette. Twenty-one out of the 25 patients who smoked have already quit smoking. However still active smokers, the remaining 4 respondents have already tried to stop smoking. Thus, majority of the respondents were already non-smokers.

Thirty-three of the adult hypertensive patients were non-alcoholic while 47 were presently drinking alcoholic beverages. Twenty-six of the active alcoholic drinkers seldom practiced moderate alcohol consumption; followed by respondents who sometimes and always practiced moderate alcohol consumption, both with a frequency of 9. Although most of the respondents were non-alcoholics, more than 2/3 of the alcoholic respondents did not practice moderate alcohol consumption most of the time.

Fifty-three of the adult hypertensive patients were performing physical exercises while 27 of them were doing otherwise. Twenty-four of the physically active patients were doing physical exercises everyday while 28 of the 55 physically active patients were engaging in about 16 – 30 minutes of physical exercises per day. Thus, majority of the respondents were engaging in physical exercise in most days of the week, with most of them reaching almost 30 minutes duration of exercise per day.

DISCUSSION

As per a statement of World Health Organization (WHO), Hypertension is one of the silent killers in 21st century and is one of the biggest global public health concerns. It is a major contributor of cardiac complications, stroke, heart diseases, kidney failure, blindness, including

premature death and disabilities. As per the estimation of WHO, globally more than 1.13 billion of people are affected with Hypertension among which less than 1 in each 5 is under control. Unhealthy diets, lack of physical activities, consumption of alcohol & tobacco are the main contributing factors of Hypertension.¹⁸ Thus, the adoption of healthy lifestyles by all persons is critical for the prevention of high BP and is an indispensable part of the management of those with hypertension.¹⁹

Although numerous studies have already been conducted around the world, existing local literature about the level of awareness, knowledge and practice of recommended lifestyle modifications among adult hypertensive patients is very limited. Hence, this study was done to elicit further data pertaining to such topics.

Eighty (80) hypertensive patients seen at the Out-Patient Department were chosen as the primary respondents and were made to answer the researcher-made survey questionnaire thru face-to-face interview. Most of the respondents were 46 years old and above, females, overweight to obese, were able to receive a secondary to tertiary level of education and had no co-morbidities.

The respondents in the study were knowledgeable that hypertensive patients should stop smoking; eat food that are low in salt, but to take more of fruits and vegetables, eat diet with reduced saturated and total fat; should practice moderate alcohol consumption (≤ 2 drinks/day in men and ≤ 1 drink/day in women) and; engage in aerobic / physical activities / exercises of at least 30 minutes per day since most of them agreed to the different statements on the recommended lifestyle modification practices as shown in Table II.

These findings were consistent in a cross-sectional study conducted in a Hypertension Clinic of the Medicine Out-patient Department in one of the hospitals in India wherein nearly 84% had knowledge about the influence of smoking and alcohol on hypertension, 82% had knowledge about at least 3 dietary factors which control hypertension and about 70% of the respondents were aware that more than 30 minutes of physical activity/day is needed to control hypertension.¹²

Moreover, similar results were also noted in the study conducted among patients attending a primary health care clinic in Botswana.⁹

Comparable data were also noted in a study made in Eastern Ethiopia wherein 200 (73.0%) participants had good knowledge about lifestyle modifications recommended for hypertension management. Over three-fourth 78.8%, and 77.4% knew the effect of drinking alcohol and smoking cigarette on controlling BP, respectively.¹⁶

Although similar findings were noted in North-Western Nigeria in terms of awareness of regular exercise, salt restriction, intake of fruits and vegetables being part of the recommended lifestyle modifications, only a few number of the respondents were noted to be aware of the roles of unsaturated oil and reduction in dairy food intake in the control of BP.¹¹

Meanwhile, although a bit more than half of the participants in a prospective study done in Kwara State of Nigeria knew the benefit of exercise for the control of BP, only 41.1% and 1.8% of the patients were aware that excessive salt and fat intake could adversely affect the control of hypertension respectively. In contrast, almost half of the respondents of the said study believed that smoking has no effect on the propensity to develop complications.¹⁴

On the other hand, results of the study were only consistent with the awareness rate on salt restriction on the study conducted in Turkey since the awareness rates of the latter on the other recommended lifestyle modifications were only ranging from 18-50%.⁸

The findings of the study were in stark contrast with the results reported in South-East Nigeria wherein up to 87.1% were unaware that regular exercise is part of lifestyle modification while 60% were unaware of the need for moderation of alcohol intake. More than 80% were unaware of the roles of vegetables, fruits, unsaturated oil and reduction in dairy food intake in the control of BP.¹

Differences in the level of awareness and/or knowledge of the recommended lifestyle modifications among the respondents of the study with other participants of other related studies might be attributed to several factors such as age, sex, level of educational attainment and co-morbidities.

More than 1/3 of the respondents' diet included the recommended intake of fruits, vegetables, grain and beans; nevertheless, more than 1/3 of the respondents also consumed foods that contain high saturated fats and salt as shown on Table III. Moreover, the respondents have relatively the same frequency of eating a diet which includes fruits, vegetables, grains and

beans with consuming foods with high contents of saturated fat and salt. In other words, the patients were not consistent with following the diet-related recommendations.

The results of the study were more or less the same with findings from several studies. In a study done in Kingdom of Saudi Arabia, only 17(11.8%) patients admitted full adherence to a healthy hypertensive diet.¹³ Also, nearly half (42%) of the participants in a hospital-based cross-sectional study conducted in Eastern Ethiopia did not plan regularly to include diets rich in fruits, vegetables and low-fat dairy products in meal program.¹⁶ Results were also nearly consistent with the study in the out-patient department in India wherein 25% were adding extra salt in their diet and none of them increased fiber intake.¹²

On the contrary, the results of the study were also not consistent with some of the current literature. In the institutional-based cross-sectional study done in Ethiopia almost all respondents rarely or never consumed food that contained high saturated fat and >60% of them rarely or never consumed spicy food since diagnosis. Respondents who never or rarely used salt in their food were 12.4%.¹⁷ Furthermore, more than half (59.6%) of the participants in a descriptive study conducted in Jordan showed adherence to a low sodium diet.¹⁵ Finally, among 88 participants with some knowledge of salt restriction in a study done in South-East Nigeria, 68.2% practiced it.¹

Differences in the practice of diet-related recommendations between Filipinos and other ethnicities might be due to cultural differences or level of educational attainment and probably occupation and socio-economic status.

Although 4 of the hypertensive patients of the study are still active smokers, majority of the respondents were already non-smokers. Findings of the study were consistent with most of the current literature particularly on the studies conducted in India, Turkey and Ethiopia.^{12,15,17}

A study done in South-East Nigeria however showed contrasting results wherein among those who had knowledge on cigarette smoking cessation, only 6.5% practiced it.¹

Similarities of the findings in the study to most of the available literature may be attributed to the common understanding and knowledge of the majority of the general harmful effects of smoking to our health and body.

Although most of the respondents were non-alcoholic drinkers, more than 2/3 of the alcoholic respondents did not practice moderate alcohol consumption most of the time.

Similar findings were noted in the study done in India wherein 72% of the respondents did not consume alcohol.¹² Comparable data were also noted in the study conducted in South-East Nigeria wherein only 32.3% of those with knowledge of moderate alcohol consumption practiced it.¹ Similarity of results may be attributed to several factors such as age, sex, marital status, level of educational attainment, and socio-economic status among others.

Majority of the respondents in the study engaged in physical exercise in most days of the week, with most of them reaching almost 30 minute-duration of exercise per day.

Similar findings were noted on 2 studies and a single study conducted in Ethiopia and India respectively.^{12,16,17} On the contrary, almost 2/3 of the respondents in the study done in Jordan did not do any exercise because they reported some barriers.¹⁵ Similar data holds true in the study in South-East Nigeria wherein only 8.6% of those with knowledge of regular exercise practiced it.¹

The practice, frequency and duration of exercise may be influenced by some factors such as age, sex, culture, occupation and co-morbidities.

Consistent with literature, the most common source of information about the recommended lifestyle modifications was the attending physician and/or healthcare professionals.^{1,10,11}

CHAPTER V

CONCLUSION

Based on the findings of the study, the following conclusions were drawn:

1. The adult hypertensive patients seen at the Out–Patient Department of Remedios Trinidad Romualdez Hospital (RTRH) were aware and /or knowledgeable of the recommended lifestyle modifications.
2. The most common source of information about the recommended lifestyle modifications was the attending physician and/or healthcare professionals.

3. The adult hypertensive patients seen at the out-patient department of Remedios Trinidad Romualdez Hospital (RTRH) were not consistent with following the diet related recommendations.
4. Although most of the respondents were non-alcoholic drinkers, more than 2/3 of the alcoholic respondents did not practice moderate alcohol consumption most of the time.
5. Majority of the respondents were non-smokers and were engaging in physical exercise in most days of the week, with most of them reaching almost 30 minutes-duration of exercise per day.

RECOMMENDATIONS

After the analysis of the data gathered through survey from the adult hypertensive patients seen at the Out-Patient Department of Remedios Trinidad Romualdez Hospital (RTRH), the researcher highly recommends the following:

1. Additional reinforcement among adult hypertensive patients on the significance of adopting a DASH type of diet or a diet which is low in salt, high in fruits and vegetables, reduced saturated and total fat and practicing moderate alcohol consumption in the management or control of hypertension.
2. Further studies be done on the following:
 - a. The relationship of patients' socio-demographic or clinical profile on the level of knowledge and practice of recommended lifestyle modifications specifically, in terms of Age, Sex, Educational Attainment, BMI and Co-Morbid conditions.
 - b. The relationship of level of knowledge of recommended lifestyle modifications on the control of blood pressure among hypertensive patients.
 - c. Factors affecting the level of knowledge and practice of recommended lifestyle modifications among adult hypertensive patients.
3. Same study be conducted on in-patients or admitted patients of the same institution or to do a comparative study between out-patients and in-patients.

4. Inclusion of weight reduction and weight management in the recommended lifestyle modifications in future studies about the assessment of awareness and practice of lifestyle modifications among adult hypertensive patients since this aspect was not included in the said study.

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