

## The Relationship of Compliance to Medication among Hypertensive Heads of Units and their Diet and Attitude towards Medical Consultation

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### Abstract

Higher arterial blood pressure is called hypertension. This is an abnormal high systolic blood pressure ranging from 19 to 140mmHg or greater while a diastolic blood pressure is about 90mmHg or greater. Hypertension is common among adults and sometimes they were not aware of its existence. The study aimed to find out the compliance on medication among hypertensive heads of units. This study utilized a descriptive-correlational research design to determine relationships between variables. Purposive sampling was used to obtain the respondents of the study, and a researcher-constructed survey questionnaire was implemented to gather data. The data were analysed utilizing percentage distribution, weighted mean, standard deviation, Pearson Moment Correlation Coefficient, and Multiple Regression Analysis. The findings of the study revealed that majority of the respondents had a monthly income of 16,000 to 20,000, have 4 to 6 children, are chairmen of a department in a government agency, taking antihypertensive medication for less than a year likewise for 1 to 5 years, diagnosed with stage 2 hypertension and taking 2 types of antihypertensive medications. As to the level of knowledge on hypertension, majority strongly agreed on the information about hypertension. As to their perception on the effects of medication, most of them agreed on the effects of medications to their body system. Lifestyle in terms of diet and attitude towards medical consultation are factors for compliance of antihypertensive medications.

**Keywords:** Hypertensive, Compliance, Medications, Diet, Attitude, Marawi City, Philippines

### Introduction

Hypertension is one of the most common diseases affecting humans worldwide. It is with associated morbidity and mortality among the populace. The presence of hypertension can be detected by routine blood pressure checks at clinics or doctor's offices (<http://www.abct.org/docs/dmembers/Factsheets/Hypertension> 2009). For the past several decades' extensive research, widespread education and concerted efforts towards health care professionals have led to the decreased morbidity and mortality rate due to hypertension and its complication. Hypertension could be the most modifiable risk factors for coronary diseases, stroke, congestive heart failure and other internal diseases (Smeltzer and Bare 2004).

One of the major health challenges that we faced today is the increased number of cases of non-communicable diseases which include hypertension. This growing challenge is threatened

the economic and social development as well as the lives of millions of people. In the Philippines, urbanization, lifestyle changes, and increasing life expectancy brought a considerable change on the health status of the populace in the country (Palaganas 2003). Monitoring and diagnosing are unique position of responsibility of the physicians. They have roles to portray in actively encourage patients compliance to their regular checkup and treatments (Eracker, Kirscht, and Becker 1984). After decades research on compliance of health care issues were not given so much attention. There were very few consistent information is available. People argued that much of the existing compliance literature also lacks conceptual rigour. Despite of individual knowledge that people do not take their medications consistently, individuals do not know specifically the reason why these people have done it so. This is due maybe to lack of understanding on compliance in perspective of the health care. One reason for this lack of understanding is that compliance research has been dominated by the perspective of the health professionals instead to include also the patients' perspective to better understand medication-taking behavior.

Untreated or sub optimally treated hypertension can lead to increased risk of morbidity and mortality due to cerebrovascular, cardiovascular, or renal diseases. Hypertension affects close to one billion individuals worldwide. In Malaysia, the prevalence of hypertension among adult aged 30 years and above has increased from 32.9 percent in 1996 to 40.5 percent in 2004. The number is continuously growing due to the progressive aging of the population. The World Health Organization (WHO) reported that suboptimal blood pressure (>115 mmHg systolic blood pressure) was the cause of 62% cerebrovascular diseases and 49% of ischemic heart diseases. Based on the national survey conducted in 2004 in Malaysia, the prevalence of hypertension is among aged 30 years and above.

Adherence to medication pertains to 17th extent to which the medication-taking behaviour of a patient corresponds with agreed recommendations from a health care provider. Unfortunately, poor compliance to medication is widespread especially in the treatment of chronic disorders such as hypertension leading to poor health outcomes and large medical spending on drug-related morbidity. The World Health Organization reported that compliance to medication in patients with chronic diseases averages only around 50 percent in developed countries. The scenario is reported to be worse in developing countries because of poor accessibility to medications and health care services. The asymptomatic nature of this disease condition intensifies the problem of non-adherence in hypertension (Ramli, Ahmad, and Paraidathathu 2012).

In 2005, nearly one-fifth of the Sri Lanka population suffered hypertension and the prevalence is expected to further increase in the coming decades. Cardiovascular and cerebrovascular diseases hypertension is an important risk factor, are the leading causes of hospital deaths in Sri Lanka. It had caused high mortality rates among Sri Lankans in comparison to affluent countries (Kumara, Perera, Dissanayake, Ranasinghe, and Constantine 2013).

Hypertension is the fifth leading cause of morbidity and mortality in the Philippines (FHSIS Annual Report 2003). It is also the third leading cause of morbidity and fifth leading cause of mortality in IPHO Lanao del Sur (IPHO Annual Report 2002). In this era, early detection and aggressive treatment of hypertension have lessened associated morbidity and mortality. Current practice standards call for a more diligent management including prevention through avoidance of known risk factors, particularly in persons with a family history of hypertension. It also includes cofactors which are known to increase the risk of cardiovascular damage in persons with hypertension such as smoking, hypercholesterolemia and diabetes mellitus (Pugh 2000). The treatment for hypertension are: regular checking of blood pressure,

changes in one's eating and living habits, and taking the prescribed medication every day. If hypertension is detected and treated on time, hypertension may not lead to complications that will affect the person's productive life (Wolff 2008).

### **Statement of the Problem**

The rapid increase on the cases of hypertension threatened and challenges the health workers (Palaganas 2003). Untreated hypertension could lead to increased risk of cardiovascular, cerebrovascular and renal diseases. Policy makers and health educators need to continuously search to find ways to lower down if not eradicate cases of hypertension. Since hypertension is one of the leading risk factors of morbidity and mortality in the Philippines (FHSIS Annual Report 2003), the researcher being a health worker was motivated to look into the extent relationship of compliance to medication among hypertensive heads of units and their diet and attitude towards medical consultation.

### **Research Design of the Study**

The purpose of this quantitative research was to independently examine the relationship between the level of knowledge on hypertension, perception on the effects of medication, lifestyle in terms of diet, physical activity, and emotional aspect, and attitude towards medical consultation to the compliance to medication of the participants of this study. To accomplish the purpose of this study, the following research questions were posited: First, what is the socio-demographic profile of the participants?, second, what is the extent of compliance to medication among hypertensive heads of units?, third, what is their level of knowledge on hypertension, fourth, what is their perception on the effects of antihypertensive medication to their body systems, fifth, what is the relationship between lifestyle in terms of diet, physical activity, and emotional aspect to the compliance on medication?, and lastly, what is the relationship between attitude towards medical consultation and their compliance to medication?

### **Significance of the Study**

This study has both national and international significance to policy makers on the relationship between hypertension and compliance to medications. Health practitioners/health workers will find the study significant considering the need to curve down cases of hypertension. The heads of units may be able to acquire significant information on the prevention of hypertension through proper diet and regular medical check-up and the taking of medication as ordered by the physician.

### **Method of Procedure**

This quantitative study was designed to examine the relationship between compliance to medication among hypertensive heads of units and their diet and attitude towards medical consultation. A researcher-made survey was administered to 46 participants of the study after testing for validity and reliability. Collection of Data Before conducting the data collection informed consent was obtained. The data was gathered by the use of a researcher-constructed survey with six (6) Parts. Part I is the profile of the respondents which includes age, gender, civil status, educational attainment, monthly family income, number of living children, position/designation, type of institution, number of years taking anti-hypertensive medication(s), latest blood pressure, and anti-hypertensive medications presently taking. Part II pertains to the level of knowledge on hypertension among the participants. Part III is regarding their perception on the effects of anti-hypertensive medication(s), Part IV is about the lifestyle of the respondents in terms of diet, physical activity, and emotional aspect, Part V pertains to their attitude towards medical consultation, and lastly, is the Part VI regarding their extent of compliance to medication. Triangulation procedure was done to validate their responses.

### **Treatment of Data**

The study utilized frequencies and percentages to determine the respondents' profile; weighted mean to determine the mean of the responses of the participants and standard deviation to describe the variations of the responses of the participants; Pearson Product Moment Correlation Coefficient to correlate the independent variables such as level of knowledge on hypertension, perception on the effects of anti-hypertensive medication, lifestyle in terms diet, physical activity, and emotional aspect to compliance to medication; In addition, multiple regression analysis particularly the f-test was used to determine whether the profile of the respondents intervene with the relationship between the independent and dependent variables.

### **Findings**

The participants of the study are mostly 51 years old and older (63.043%), female (60.87%), married (82.61%), college graduate (30.435%), monthly family income of Php 16,000-20,000 (34.78%), 4-6 children (50.00%), Department Chairpersons (32.608%), employed in government institutions (80.43%), number of years taking antihypertensive medications less than 1 year (34.78%) and for 1-5 years (34.78%), in Stage 2 hypertension (47.82%), antihypertensive medications presently taken is captopril (25.00%). This signifies that as age advances, people become potential to having health problems (Black and Hawks 2005) Further implies that heads of units are in the older adult as being supported by Black and Hawks (2005) that the incidence of hypertension increases with age 50 to 60 of clients who have a blood pressure over 140/90 mmHg.

Epidemiologic studies, however, have shown a poorer prognosis in clients whose hypertension occurs primarily in people older than 50 years. Among older adults, systolic blood pressure readings are a better predictor of possible future events such as coronary heart disease, stroke, heart failure, and renal disease than are diastolic readings. However, according to Nettina (2011), older clients systolic blood pressure may be elevated due to loss of elasticity of the arteries (arteriosclerosis). Further, about 40 percent of all deaths below age of 65 years are due to consequences of high blood pressure. (Wolff 2008). After menopause, when the estrogen's protective effect is lost, atherosclerosis develops rapidly. Once into their sixties, men and women have similar risk of myocardial infarction due to atherosclerosis (Nowak and Handford 2005). According to Abolfotuh (2005), marital differences in blood pressure and psychological status such as prolonged stress and low social support may explain the marital diversity in blood pressure and the risk of hypertension.

For the educational attainment, managers have finished a college degree that has given them the chance to hold a position. This implies that heads of units are educationally prepared. However, they have to attend to their health concern in order for them to function to the optimum. Furthermore, individuals who have lowest educational attainment are more prone to hypertension problems than those with highest educational attainment. This is true because poorly educated individual were not more knowledgeable about hypertension and its risk factors. This is due to less understanding of the particular health problem ([http://www.cdc.gov/pcd/issues/2007/apr/06\\_0062.htm](http://www.cdc.gov/pcd/issues/2007/apr/06_0062.htm)).

Monthly family income also relate to hypertension issues and compliance of medication. Those who has lower income tend to have more health problem due to hypertension and have least compliance in medication. This maybe because on the lack of financial aspect that could hinder them having regular checkup. Health care expenditure could be a huge portion of living expenses for patients suffering from chronic disease. In the case of a well-compensated individual, health care cost is not a big burden specially if the patient has a relatively high income

or health insurance. Studies have found that patients who had no health insurance cover or who had low income were more likely to be non-compliant to treatment (Jin 2008).

For the number of living children, the bigger the number of children, the bigger the amount they need and the lesser the possibility of compliance to medication. Furthermore, individuals with greater number of children have high stress level because they have many dependents to feed and to manage (<http://www.webmd.com/hypertension> 2009). In terms of position or designation, the respondents believed that stress is normally part of life. However, unknowingly excessive stress experienced will lead to psychological, emotional, and even physical problems including heart disease, high blood pressure, chest pains, or irregular heartbeats. Mental stress is the form of stress encountered by heads of units because they are the one who always think of solutions to problems, decides, commands, and guides subordinates if tasks given to them are done well (<http://www.webmd.com/hypertension> 2009). Most of the participants are women and working in government institutions. Women in government jobs are highly at risk of hypertension than those women who are farmers or self-employed, this could be due to less physically active lifestyle, work pressure, and psychological stress ([http://www.cdc.gov/pcd/issues/2007/apr/06\\_0062.htm](http://www.cdc.gov/pcd/issues/2007/apr/06_0062.htm)).

The respondents are taking anti-hypertensive medications for less than a year and a year to 5 years already. It implies the participants tend to comply with the medications since they become aware of the consequences of having hypertension thru the massive campaign of the Department of Health with health's objective on proper information, education, and communication (Palaganas 2003).

Majority of the respondents have stage 2 hypertension, which means that they have a systolic blood pressure of 160-179mm Hg and a diastolic blood pressure of 100- 109mmHg. According to Wolff (2008) a further cause of increased blood pressure is the lack of exercise, the occupational disorder of so many who spend their working life behind desks, factory benches, or the wheel of a car. Most of them take captopril (Capoten) as their anti-hypertensive medication. Recent evidence suggests that angiotensin converting enzyme (ACE) inhibitor drugs such as captopril may be particularly beneficial (Smeltzer and Bare 2004). Angiotensin-Converting Enzyme Inhibitors inhibits angiotensin-converting enzyme (ACE), which in turn inhibits the formation of angiotensin II which is a potent vasoconstrictor and blocks the release of aldosterone that promotes sodium and water retention and potassium excretion. Capoten (captopril tablets, USP) is a medication for treatment of hypertension. Based on its phytochemical components Capoten, should be given to the risk of neutropenia/agranulocytosis and may be used as initial therapy for patients with normal kidney function, in whom the risk is relatively low. Captopril should be reserved for hypertensives that have either developed unacceptable side effects on other drugs, or have failed to respond satisfactorily to drug combinations. This drug is effective alone and in combination with other antihypertensive medications, especially thiazide type diuretics (<http://www.rxlist.com/capoten-drug/indications-dosage.htm>). However, captopril may cause life-threatening effects such as acute renal failure, bronchospasm, angioedema, and agranulocytosis. Its side effects and adverse reactions are cough, nausea, diarrhea, headache, dizziness, fatigue, insomnia, hyperkalemia, tachycardia, hypotension, oliguria, and urticarial (Udan 2009).

In terms of their extent of compliance to medication, the heads of units "sometimes" take their anti-hypertensive medications which mean that they take their medications if there is available medication. They take their medications "sometimes" because of the following reasons that they tend to forget because of their busy schedule at work they have less knowledge on the effect of not taking their medications regularly as mentioned by the respondents during the



interview. According to Longmore, Wilkinson and Rajagopalan (2004), it is important to be committed to taking anti-hypertensive medication everyday as most people do not have any symptoms from high blood pressure. In addition, a long-term adherence to treatment is always a problem in any chronic disease condition, and hypertension is no exception. More than 50% of patients who are prescribed antihypertensive medications actually discontinue therapy within 12 months. A primary reason given for stopping medications relates to adverse effects and the cost of medications (<http://www.clevelandclinicmed.com/medicalpubs/diseasemanagement/nephrology/arterial-hypertension> 2009).

The mean of knowledge of the participants regarding hypertension is 4.28 with the average standard deviation of 0.65 and qualitative description of “strongly agree”. This is due to their educational level and they are conscious about their health, and have more information pertaining to hypertension as shown in the television and lecture heard in the radio about the disease. The statement indicators “Contraceptive pill can cause hypertension” and “Giving up coffee drinks will help reduce blood pressure” ranked the lowest which means that few believe on the following statement regarding hypertension. Therefore, even if they are already heads of units they still need enhancement on their knowledge regarding hypertension. Patient’s knowledge about hypertension is a contributory factor for adherence to treatment or medication (<http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/nephrology/arterial-hypertension> 2009).

The mean participants’ perception on the effects of medication is 3.70 with the average standard deviation of 0.88 and qualitative description of “Agree”. The statement indicator that states that “hypertensive people must be aware of the effects of their medications” ranked highest which signifies that majority believe that hypertensive clients must know the effects of their medications while statement indicator that states “medications prescribed are always available in the locality” ranked lowest because not all medications are available in a nearby pharmacy and most of the time it has to be bought in Iligan or Cagayan De Oro City. According to the Health Promotion Model by Nola Pender, the person’s level of cognitive abilities plays a major role in the development of health-promoting behaviours. Therefore, if the level of knowledge is high then the development of health promoting behaviour is likewise high. Further, adherence to medication depends on the personal health beliefs and to the adverse effects of medication (<http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/nephrology/arterial-hypertension> 2009).

For the lifestyle in terms of diet, physical activity, and emotional aspect, the mean respondent’s lifestyle in terms of diet is 3.04 with the average standard deviation of 1.17 and qualitative description of “sometimes” with item #1 that states “I eat proper diet” is the highest. It implies that the respondents are somehow knowledgeable about the food they eat while item #3 that states “I drink fat free milk” is the lowest because they seldom drink fat free milk. This is because of the following reasons: they eat calories they can burn up every day, they eat more spicy foods and foods high in carbohydrates, & they eat more of the non-nutrient food group (<http://www.americanheart.org/presenter.jhtml?identifier=851> 2009).

Diet plays a very significant role in blood pressure. Foods high in cholesterol thicken the blood with fat, and that forces the heart to work harder, thereby raising the blood pressure (<http://www.americanheart.org/presenter> 2008). According to Hutchinson (2003), high blood pressure can cause damage to the heart as it forces the heart to work harder. A diet high in saturated fat, obesity and lack of exercise can put a person at risk. They all contribute to a rise in the cholesterol and blood fats (lipids) that clog or block coronary arteries. The mean of

participants' physical activity is 3.27 with the average standard deviation of 1.38 and qualitative description "sometimes". This is because they do not have regular physical activity, they ride their vehicles in going to and from their offices, and they usually spend most of their time on their desk. The statement indicator that states "I do office work 8 hours a day" is ranked highest. It implies that heads of units are rendering their services to their assigned institution adequately while the statement indicator that states "I play badminton as my exercise" ranked lowest because they do not play badminton at all. According to Wolff (2008) a further cause of hypertension is lack of exercise, the occupational disorder of so many who spend their working life behind desks, factory benches, or the wheel of a car. This signifies that the participants do not maintain a regular physical activity. In addition, sedentary individuals are more likely to develop atherosclerosis than those who are more active. Generally, it appears that increased exercise levels are associated with reduced blood pressure, increased levels of plasma high density lipoprotein (HDL), and lower plasma values of cholesterol, triglyceride, and low density lipoprotein (LDL). (Nowak and Handford 2005) Managers or heads of units do not usually find time for exercise or performing physical activity due to their hectic schedule in their work. In fact most of them do have sedentary lifestyle.

In terms of their emotional aspect, the mean is 3.55 with the average standard deviation of 1.09 and qualitative description of "often" Item #11 that states that "I feel comfortable with my work" is ranked the highest while item #12 that states that "I speak in modulated voice even if I am angry" is ranked lowest. This means that few use a modulated voice when angry. Living a healthy lifestyle also calls for paying keen attention to emotional well-being. When a person is able to maintain a balance and enjoy a positive outlook in life, stress levels are likely to be lower and so is overall satisfaction with life (<http://www.megahealth.lifestyle.com> 2009).

For the attitude towards medical consultation, the mean is 2.91 with the average standard deviation of 0.94 and a qualitative description of "sometimes" which means that the heads of units visit or consult a doctor every after 3 months. Going to medical consultation entails money and time which could be the reason respondents sometimes go for medical consultation. Further, heads of units sometimes go for medical consultation due to the following reasons: hectic schedule, lack of consciousness on health, distance from where the doctors have their clinic, and long waiting before seeing the physician due to many clients. Patients may not be able to take time off work for treatment and as a result their rate of compliance could be threatened. Therefore, shorter traveling time between residence and health care facilities could enhance patient's compliance. For patients with chronic diseases they would do their own cost-benefit analysis of therapy, either consciously or subconsciously. It means that they have to weigh the complications against constraints on their daily lives and perceived risks of therapy such as side effects, time, and effort involved (Jin 2008).

According to Nola Pender's Health Promotion Model (2002), the perceived benefits of action refer to the anticipated outcomes that will occur from health behaviour. Based on the results of the study, respondents do not perceive benefits in going to or visit their physician regularly for medical check-up or medical consultation. Of all the variables present in the study, only the lifestyle in terms of diet and the attitude towards medical consultation have a significant relationship on the compliance to medication of the heads of units diagnosed with hypertension.

### **Conclusion and Implication of the Study**

Diet and attitude towards medical consultation are that factors that affecting the compliance to medication among heads of units diagnosed with hypertension. This implies that heads of units need to be educated on the different health problems particularly caused by diet. Dietary Approach to Stop Hypertension (DASH) has to be given emphasis. And that they have to be

provided with adequate knowledge on the importance of regular check-ups or medical consultation as well as compliance to medication. In addition, continues health education has to be given to the public or in the larger part of the society to be aware of the cause, prevention, treatment and recovery of clients with hypertension thereby improving also their perception on the effects of medication. The Department of Health has to intensify its campaign on the prevention of lifestyle diseases.

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