



Medication Adherence Among Adult Hypertensive Patients in a Local Community in Caloocan City, Philippines

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Introduction

Medication adherence is an important factor in the management of chronic diseases such as hypertension. Non-adherence to antihypertensive medications contributed to uncontrolled blood pressure that further lead to severe cardiovascular problems. Cardiovascular risks and number of deaths were also increased with poor adherence.⁴ According to a cross-sectional survey of hypertensive outpatients in the Philippine General Hospital (PGH), one of the contributing factors to uncontrolled hypertension was medication non-adherence. Factors affecting non-adherence to medication were lower socioeconomic level, low income, and chronic kidney disease. On the other hand, patients with increased maintenance medications and those receiving financial support appeared to be more adherent to hypertensive medications.⁷

Hypertension has been one of the leading risk factors contributing to cardiovascular problems such as coronary heart disease, stroke, heart failure, and end-stage renal disease. It is necessary to elaborate the importance of medication adherence in hypertension population in order to improve the healthcare of the patients involved.⁶

In 2011, two-thirds of the global deaths comprised of non-communicable diseases (NCDs) as reported by the World Health Organization (WHO).¹⁰ The mortality rate was increased by 7% from 60% in the year 2000. Cardiovascular diseases were listed as one of the four main NCDs. In the Philippines, cardiovascular and cerebrovascular diseases topped the list in top 10 causes of death along with diabetes and malignant neoplasm based on a survey of the National Statistics Office (2009). Furthermore, the most common procedures reimbursed by Phil. Health were due to complications of NCDs such as hemodialysis and chemotherapy. Over the past 20 years, hypertension still remained as one of the global issues in the Global Burden of Disease (GBD). Interventions with programs for diagnosis, treatment, control, and/or prevention would assist in addressing the growing issue.²

The main aim of this study was to know the percentage of the people who were adherent to their medication in a local community in Caloocan, Philippines. It also aimed to know the factors that contributed to the medication adherence of the participants.

Methods

Questionnaire

An 11-item questionnaire was designed to be used in assessing the medication adherence of hypertensive patients. The questionnaire was based on the 8-item Morisky scale and other medication adherence questionnaires, with some questions patterned from the Morisky scale but in a Likert-scale system. The questionnaire is in Filipino language and was tested to 10 participants as a pilot test.⁸ The researchers graded the scale using their own point system for each choice; Always = 4, Oftentimes = 3, Sometimes = 2, Rarely = 1 and Never = 0. If the participant gets a score of 22 to 44 in the questionnaire, then he/she is non-adherent and if he/she scores 0 to 21 then he/she is adherent. A socio-demographic questionnaire created by the researchers was likewise used to gather the participants' information and to determine the factors affecting their medication adherence.⁹

Community

Members of the hypertensive club and other hypertensive patients were chosen to be part of the study and were recruited with the collaboration of the *barangay* and the local municipality. The researchers asked for the approval of the ethics committee before conducting the research. The community provided

qualified participants for the study: 19 years old, diagnosed with hypertension for at least a month, and are either taking or prescribed with maintenance medications for hypertension.

Ethical Considerations

The participation of the respondents in this study was voluntary. An informed consent was signed by the patients stating that they agreed to participate in the study in which they agreed on giving their medication profile to the researchers and agreed on the activities to be done for the study with regards to the considerations given by the ethics committee. The participants were given the freedom to withdraw from the study if they felt the need to so. Moreover, tokens of appreciation were given to those who decided to participate in the study.

The researchers made sure that any information that was obtained in this study, which can be used to identify the participants, would remain confidential or anonymous. In addition, the researchers also made sure that the works of others were acknowledged and all the information used in any part of the study was cited. Furthermore, the maximum level of objectivity during patient counseling and interviews was maintained throughout the entire study. The researchers made sure to uphold their professional relationship with the respondents.

Seminar and Pamphlet

A seminar was conducted with a guest speaker who is knowledgeable in the field of hypertension and medication adherence. The seminar tackled hypertension as a disease, the things that should be done or not when a person is diagnosed with this disease and the importance of medication adherence to hypertensive patients. The seminar aimed to highlight the importance of medication adherence to hypertensive patients especially to those who need maintenance medication. Patients who participated in the study had their blood pressure (BP) taken as part of the data for the study.

The second visit or the short Pharmacy dissemination program for hypertension, was done two weeks after the first visit. This included the giving of a pamphlet about hypertension and some important information about it; a one-on-one patient counseling was also given to the participants; and lastly, their blood pressure was also taken at that time. The participants were also encouraged to have their daily blood pressure monitoring in the *barangay's* health center.

Statistical Analyses

Means and range were used to summarize the data in quantitative form such as age, blood pressure, and scores in the questionnaire, while counts and percentages were used in categorical data. Clopper-Pearson confidence interval was used to determine the percentage of hypertensive patients that were adherent to their medication. Logistic regression was performed to determine the factors of adherence of the hypertensive patients, with age, gender, marital status, employment status, hypertension history, other diseases and medications as independent variables. Meanwhile, Fisher's exact test was used in educational attainment and monthly income.

All the statistical tests were performed using propci package of R ver. 3.21 and SPSS ver 20.0. *p*-values less than 0.05 indicate significant differences.

Results

Based on the 94 patients in the study, the Cronbach alpha of the 11-item questionnaire is 0.932, indicating acceptable reliability.¹ The mean score of the patients is 14.5 (SD = 13.6), with scores ranging from 0 to 44. A total of 73 [77.7%, CI95%: 67.9% to 85.6%] patients were found to be adherent (scores, 0 to 21) and 21 (22.3% CI95%) are non-adherent (scores, 22 to 44).

According to the result presented in Table 1, only the use of maintenance drugs (*p*= 0.016) showed a significant factor in medication adherence. Other factors such as age, gender, marital status, highest level of educational attainment, employment status, monthly income, history of hypertension, vitamin intake, and other medications are not considered to be significant factors in medication adherence and non-adherence for hypertensive patients.

Table 1 Factors Affecting Medication Adherence of Hypertensive Patients

	Odds Ratio Estimate	
	(95% CI)	p-value
Age	0.99 (0.93 – 1.04)	0.630
Gender: Male	1.76 (0.40 – 7.67)	0.453
Marital Status		
Single	1.05 (0.09 – 11.9)	0.968
Married	0.73 (0.09 – 6.15)	0.774
Widow	1.13 (0.13 – 9.93)	0.913
*Separated/Annulled	-	-
Employment	2.63 (0.77 – 9.05)	0.124
History of Hypertension	0.65 (0.20 – 2.10)	0.468
Presence of Other Diseases	1.56 (0.53 – 4.65)	0.422
Other medication		
Maintenance	4.15 (1.31 – 13.1)	0.016
Vitamins	0.79 (0.26 – 2.40)	0.674
Others	2.13 (0.35 – 12.79)	0.411

Discussion

Seventy-three (77.7%) of the patients were adherent to their medication while 21 (22.3%) were non-adherent. Moreover, the only significant factor in the adherence of the hypertensive patients was the use of maintenance drugs ($p=0.016$).

In relation to medication as the only factor of adherence in this study, it was determined in another study that patients with Type II diabetes have very high medication adherence rates regardless of the number of medicines prescribed.³ Unreported side effects and lack of confidence were considered factors for suboptimal adherence.

Furthermore, according another study, the presence of other diseases in hypertensive patients such as dyslipidemia, obesity, and diabetes mellitus were associated with the medication adherence of the patient. It was determined that hypertensive patients who had several maintenance medications for the treatment of these conditions aside from hypertension resulted in a higher adherence rate.⁵

Conclusion

Among the 94 respondents, those with ages that ranged from 60-61 years old were shown to be the most adherent. Only the use of other medications, specifically maintenance drugs, contributed as a factor for adherence. According to a study, hypertensive patients who had maintenance medications for hypertension and other diseases resulted to a higher adherence rate.⁵ In addition, majority of the population of elementary, high school, and college graduates were adherent.

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