Non-compliance and its associated factors among hypertensive patients taking anti-hypertensive treatment visiting Gimbi general hospital, Western Ethiopia: cross-sectional study

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Research note

Keywords: Hypertension, Hypertensive treatment, Adherence, Compliance

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Abstract

Objective: Hypertension is defined as a persistent systolic blood pressure reading of 140 mm Hg or greater and/or a diastolic blood pressure reading of 90 mm Hg or greater. Poor adherence to anti-hypertensive therapy is one of the biggest obstacles in therapeutic control of high blood pressure and usually associated with bad outcome of the disease and wastage of limited health care resources. The study was aimed to assess the patient compliance and associated factors of anti-hypertensive treatments **Result:** The study showed that the overall level of compliance was 106(83.46%) and non-compliance level was 21(16.54%). Among 127 respondents 52 (40.95%) were males and 75 (59.05%) were females. Majority of respondents 113(88.98%) were taking treatments as prescribed and 106(83.36%) had regular follow up. In this study 45 patients never forget to take their medication and 82(64.57%) respondents were stopped their medication due to different reason from this, 64(34.8%) were due to improvement from illness and 37(20.1%) due to lack of money. **Keywords:** Hypertension, Hypertensive treatment, Adherence, Compliance

Introduction

Hypertension is defined as a persistent systolic blood pressure reading of 140 mm Hg or greater and/or a diastolic blood pressure of 90 mm Hg or greater. It causes 7.1 million premature deaths each year worldwide and accounts for 13% of all deaths globally (1, 2).

Analysis of the global burden of hypertension revealed that over 26% of the world's adult population had hypertension in 2000 (3). In Africa, 15% of the population has hypertension (4). About 6% of the Ethiopian population has been estimated to have HTN (5).

Non-compliance with medications is one of the major factors in the failure of therapeutic programs in patients having a chronic disease. In the available literature, the magnitude of non-compliance with medications prescribed for patients with hypertension was 16.7% (6, 7).

The compliance of patient's decreases with time and it is lower in long-term medications than in short-term medications. Ensuring patients' compliance with anti-hypertension medications and lifestyle modifications to prevent complications of hypertension remains a major challenge to public health in many developing countries (8, 9).

Non-compliance with treatment is the most important single reason for uncontrolled hypertension. With regard to the possible factors of non-compliance, the magnitude of non-compliance is expected to be high in Ethiopia, particularly study area (10,11).

Hypertension has no cure therefore; patients are expected to take medications for life. They should honor their appointments for follow up visits with clinician and adopt health actions that are recommended to lower their blood pressure (12).

Compliance with treatment of hypertension has various benefits for the individuals, the health care systems and the society at large in the case of cost saving since it reduces the incidence of complications and the need for additional medications (13).

This is particularly crucial in a public financed health care system such as Ethiopia. There are effective medical therapies for hypertension management. However, only 37% of hypertensive patients were reported to have their blood pressure controlled (14).

The problem of non-adherence to medical treatment remains a challenge for the medical professions and social scientists. As a result, substantial numbers of patients do not get the maximum benefit of medical treatment, resulting in poor health outcomes, lower quality of life and increased health care costs. In spite of many advances made in adherence research, non-adherence rates have remained nearly unchanged in the last decades (7, 15,16).

Poor adherence to anti-hypertensive therapy is one of the biggest obstacles in therapeutic control of high blood pressure. Failure to adhere causes medical and psychological complications of the disease, wastes health care resources and erodes public confidence in health systems (16, 17).

In line with the global realities, Hypertension sufferers' noncompliance to their pharmacological regimen and frequent lifestyle changes result in uncontrolled hypertension that leads to different life threatening organ complications such as cardiovascular, renal and cerebro-vascular diseases (18).

Despite, HTN is a difficult disease for adherence to treatment, specific studies are almost not exists in Gimbi. Little has been documented about the adherence status and associated factors in Ethiopia (19). Therefore, the main aim of this study was to add the existing body of knowledge about factors affecting compliance to hypertension medication and lifestyle modifications and to propose strategies that will assist policy makers and clinicians with hypertension management decisions.

Patients And Methods

Study setting and study period

A hospital based cross sectional study was conducted at GGH from March 5, to April 5, 2018. The hospital delivers diversified health services and clinics including the emergency services, eye clinic, dental clinic, mother and child health (MCH) , laboratory, X-ray, and follow up of chronic disease.

Study participants and eligibility criteria

All hypertensive people who were attending medical OPD during the study period and patients who agreed to participate in the study were included. People who are unable to give response for an informed consent, Patients less than 15 years of age, critically ill patients and mentally ill or psychiatric patients were excluded.

Study variables

Independent variables

- Socio-demographic characteristics, such as: Age, Sex, Occupational status, Educational status, Religion, Ethnicity, Income, Marital Status, Area of residence, distance from their home to hospital

Dependent variables

- Prevalence of Non-compliance towards antihypertensive treatment
- Prevalence of Non-compliance to lifestyle modifying service

Data collection process and management

Data was collected using questionnaire which was developed after reviewing different literature. The respondents were encouraged to answer the questions within the time they devoted as much as possible and the data was collected through daily follow up. Every effort was made to choose a site for interviewing that allow the interviewer to be seat out of sight and at a sufficient distance from the health institute to avoid interviews being over heard each other. Five percent of the sample was pre-tested to check acceptability and consistency of data collection tool two weeks before the actual data collection.

Data processing and analysis

The data was entered in to computer using EPI-manager 4.0.2 software. Data checking and cleaning was done by principal investigator on daily basis during collection before actual analysis. Analysis was done using statistical software for social sciences (SPSS) 24. Descriptive statistics was used to analyze data in terms of frequency and percentage.

Operational definitions

Compliance: Is defined as "the extent to which a person's behavior (taking medicines or executing lifestyle changes) coincides with medical or health advice" those taking medication daily (20,21).

Non-compliance: Any form of deviation from compliance like losing one appointment, missing doses, etc. (instructions not understood, ,costy,not availability of drug.)

Adherence: As "the extent to which a person behaviour taking medication following diet and or executing corresponds with agreed recommendations from health care provider."

Concordance: Is patients have relationship with health care professionals and discuss with treatment and about the drug openly.

Hypertension: Is defined as the persistent systolic blood pressure equal to and greater than 140 mmHg and/or persistent diastolic blood pressure equal to and greater than 90 mmHg (13).

Result

Socio-demographic characteristics

A total of 127 study participants were interviewed making the response rate 100%. Most of the respondents were in the age range of 50-64 which make 54(42.51%) of the respondents. Majority of the respondents 75 (58.9%) were females. Protestant Christians and the Gimbi towns hypertensive patients accounted for 70(55.1%) and 54(42.51%) of the respondents respectively. 54(42.51%) of the respondents were rural by resident. 73(57.5%) reported to be married and more than one third or 48(37.8%) of respondents were uneducated.

Table 1: Socio demographic characteristic of the respondents in GGH, Oromia, western Ethiopia, from March 5 to April 5, 2018

Others includes Student and Nongovernmental organization

Compliance characteristics of patients to anti-hypertension treatments

Majority 113(88.98%) of respondents, were taking treatment drugs as prescribed and was compliant From the respondents more than three fourth had 106(83.46%) have regular follow up while 21(16.54%) do not have (Table2).

Table 2: Magnitude of follow up, treatment duration and frequency respondents to Anti-hypertension treatments, GGH, Oromia, Ethiopia, from March 5 April 5, 2015

Compliance and lifestyle modification regimens

About 91(71.65%) of respondents were non-compliant while only 36(28.35%) are compliant to physical exercise. About 10(12%) are taking only salt, 24(28.9%) taking both coffee and salt, 33(39.76%) taking coffee only, 5(6%) taking only animal fat, 4(4.82%) are taking both animal fat and coffee and 6(7.2%) are taking animal fat, coffee and salt.

Out of 127 respondents 98(77.17%) never take alcohol while 121(95.3%) never smoked cigarette, 115(90.55%) never chewed chat.

Factors associated with anti-hypertension treatments non-compliance

This study showed that among the respondents 45 (35.43%) never forget to take medication, so they were compliant to their medication. 82(64.57%) respondent that they knew stopped their regular follow up and their medication previously with different purposes. From them 64(34.8%) were due to improvement of illness.

Figure 1: Reported reasons for non-compliance to anti-hypertensive treatments, GGH, Oromia, Ethiopia, from March 5 to April 5, 2018

Discussion

This study conducted to determine the levels of adherence and factors associated with non adherence to antihypertensive treatment and revealed that 83.46% were compliant. This was higher than the study conducted in Gondar 64.6%(22), Malaysia 44.2% (23), Gambia 27% (24), Egypt 74.1% (16) and lower than study done in Scotland 91% (25).

As a study done in Seychelles showed that compliance magnitude with anti-hypertension medications was 71.57% (26). Study done in Dessie showed that about 74.2% of respondents were adherent to their medication (27).

The variation that existed partly be explained by the differences in the methods employed, economical status and educational advancement and may be different definitions of compliance. In our study the level of compliance was lesser than the study done in Scotland. This might be because they are economically advanced to get needed drugs at time as well as more awareness than our countries people.

In the case of African countries all listed above reported lesser results than this study result. This might be the fact that the subjects of this study regularly visited the General hospital got instructions from their health care providers contributed their non-compliance behavior

A study done in Yirgalem Hospital showed that compliance magnitude of anti-hypertension regimens in adult population was 40% and lack of money was the major factor associated with treatment compliance which accounted 83% (28). Here in this study Lack of money was reported as a limiting factor of patient compliance. This might be because anti-hypertension drugs are provided by money payment now a day. This finding is supported by the study done in India (29).

Urban people were more likely compliant than rural; this may be information gap and accessibility of health facilities. Those who had high income were more likely compliant than those who low income. This might be happened because of they have enough money to buy treatment drugs.

CONCLUSION

The magnitude of adherence among hypertensive patients found to be higher. The most influential factor to non-adherence was lack of money or income and improvement of illness and longer duration of treatment.

In order to increase the magnitude of compliance to the medication health professionals must educate the patient about disease and consequences of non-adherence with treatment. Additionally, government should be ensured adequate supply of antihypertensive drugs the policy of sharing should be on the possibilities of giving antihypertensive drug free of charges.

Limitation

As limitations, the study was cross sectional and the causal effect relationship cannot be found and the follow-up period was short, thus failing to take into account any non-compliance after this time.

Abbreviations

ART: Antiretroviral therapy;GGH:Ghimbi General Hospital ;HTN: Hypertension;OPD:Outpatient department;USD: United States Dollar;SPSS: Statistical Package for Social Sciences

Declarations

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Authors' Contributions

FB contributes in the proposal preparation, study design and analysis.GF contributed to the design of the study, analysis and write up of the manuscripts. DD and KB made a substantial contribution to the local implementation of the study. All authors read and approved the final version of the manuscript.

Ethics Approval and Consent-to-Participate

Ethical clearance was obtained from the ethics review board of Wollega University. Permission was obtained from medical director of the GGH to access hypertensive patients and conducts the study. The benefit and risks of the study was explained to each participant included in the study and written consent were obtained from each patient involved in the study.

Consent for publication: Not applicable. No individual person's personal details, images or videos are being used in this study.

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing Interests: No competing interests exist.

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Tables

Table 1: Socio demographic characteristic of the respondents in GGH, Oromia, western Ethiopia, from March 5 to April 5, 2018

Variables		Frequency	Percentage
Sex	Male	52	41%
	Female	75	41%
	Total	127	100%
Age	15-24	2	1.57%
	24-49	46	36.22%
	50-64	54	42.52%
	>64	25	19.7%
	Total	127	100%
Religion	Protestant	70	55.1%
	Orthodox	33	26%
	Muslim	13	10.24%
	Adventist	11	8.66%
	Total	127	100%
Ethnicity	Oromo	121	95.2%
	Amhara	6	4.73%
	Total	127	100%
Educational status	Illiterate	48	37%
	Read and write only	9	7.08%
	Primary	37	29.15%
	Secondary	10	7.9%
	College and above	23	18.11%
	Total	127	100%
Occupations	House wife	18	14.17%
	Farmer	21	16.54%
	Employment	58	45.67%
	Daily labor	7	5.51%
	Merchant	14	11.02%
	Others	9	7.1%
	Total	127	100%
Marital status	Married	73	57.5%
	Single	25	11.8%
	Divorced	7	5.51%
	Widowed	32	25.2%
	Total	127	100%
Place of residence	Urban	73	57.49%
	Rural	54	42.51%

	Total	127	100%
Hours walk from Home to hospital	<1/2 hr	43	33.86%
	1/2-1 hr	22	17.32%
	1-2 hrs	34	26.79%
	>2 hrs	26	20.47%
	Unknown	2	1.57%
	Total	127	100%
Monthly income	<3.4	31	24.42%
	3.4-27.2	60	47.24%
	27.2-40.8	11	8.66%
	>40.8	25	19.68%
	Total	127	100%

Others includes Student and Nongovernmental organization

Table 2: Magnitude of follow up, treatment duration and frequency respondents to Anti-hypertension treatments, GGH, Oromia, Ethiopia, from March 5 April 5, 2015

Variables		Frequency	Percentage
Regular follow up	Yes	106	83.46%
	No	21	16.54%
	Total	127	100%
Taking medications as prescribed	Yes	113	88.98%
	No	14	11.02%
	Total	127	100%
Frequency of drug taken per day	Once	101	79.52%
	Twice	21	16.54%
	Three times	5	3.94%
	Total	127	100%
Duration since treatment Started	<2 month	4	3.15%
	2-5 months	13	10.24%
	5-12 months	16	12.6%
	>1year	94	74.01%
	Total	127	100%

Figures

Figure 1

Reported reasons for non-compliance to anti-hypertensive treatments, GGH, Oromia, Ethiopia, from March 5 to April 5, 2018