An Assessment of Adherence of Patients to Anti-Hypertensive Medication and Factors for Non-Adherence in Oromia Region Adama Referral Hospital, Ethiopia

Belayneh Kefale[1] and Abate Wondesen[2]

[1] Ambo University

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Abstract

Background: Hypertension (HTN), or high blood pressure (systolic blood pressure >140 mmHg and diastolic blood pressure >90 mmHg) is an overwhelming global challenge which ranks third as a cause of disability-adjusted life-year. Hypertension causes 7.1 million premature deaths each year worldwide and accounts for 13

Index terms— hypertensive patients, adherence, adama, prescribed medication.

1 I. Introduction a) Background Information

Hypertension has no cure therefore; patients are expected to take medications for life. Drug treatments of hypertension demands that patients comply with their medications as prescribed and they should return for a refill when medications are exhausted. They should honor their appointments for follow up visits with clinician and adopt health actions that are recommended to lower their blood pressure (1).

Medication adherence has been defined in terms of an agreement between the patient's behavior of taking medications and the clinical prescription (2). Faulty adherence or non-adherence with medications may include errors of purpose, timing or dosage as well as total or partial omission, or use of inadvertent combinations. Non-adherence with medications is one of the major factors in the failure of therapeutic programs in patients having a chronic disease (2).

In the available literature, the magnitude of nonadherence with medications prescribed for patients with hypertension was 16.7% (3). Generally, the adherence of patient's decreases with time and it is lower in long-term medications than in short-term medications. In depressive patients, adherence was shown to be 68% after 3 weeks of treatment, but this percentage decreased after 6, 9 and 12 weeks to 63%, 50% and 40% respectively (4). An adherence study conducted with short-term medications revealed an overall incidence of non-adherence of 26% (5). Ensuring patients' adherence with antihypertension medications and lifestyle modifications to prevent complications of hypertension remains a major challenge to public health in many developing countries.

Non-adherence with treatment is the most important single reason for uncontrolled hypertension.

Several factors, which may be patient or health system related, continue to militate against adherence behavior. Thus it is essential to identify such factors and develop strategies to improve adherence. It is true that the possible factors of non-adherence may vary from country to country and may contribute to the variations that exist among the reported values of non-adherence. With regard to the possible factors of non-adherence that are related to the patient, the disease, the drugs prescribed the physician and the treatment environment (6,7).

2 b) Statement of the Problem

In line with the global realities, Hypertension sufferers' non adherence 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 (8). In order to mitigate the effects of the disease in populations, it is essential to improve adherence among sufferers of the disease by identifying underlying factors in order to mitigating against adherence behavior and developing effective interventions to overcome identified factors (9). Factors affecting adherence behavior are unique to individuals and specific, and also, studies done in other countries were not applied to the circumstances surrounding the Adama Referral Hospital. However, these studies attempted to identify factors affecting drug treatment and lifestyle modification adherence and provide possible recommended strategies that could improve adherence for both drug treatment and lifestyle modifications with involving hypertension patients those who visit Adama Referral Hospital. Therefore, there is a great need of organized research that is closely linked to the patient compliance towards their anti-hypertensive treatment to improve the adherence to therapy and healthy lifestyle modification.

Concerning Client adherence towards antihypertensive treatment, specific studies do almost not exist in our local setting. Taking this into consideration this study has attempted to answer the following question: What are the reasons for nonadherence with the drugs among hypertensive patients visiting Adama Referral Hospital.

3 c) Significance of the study

The results of the study may contribute to increase the awareness of health care providers particularly physicians on the issue of adherence and may aid to develop strategies for improvement of adherence.

This study was also sought to examine various factors responsible for adherence and non-adherence in the research context and elucidate relationships existing between them.

4 b) Study design and period

In this research, the study design was an institution based cross-sectional study and the study was conducted from March 19 th to May 23 rd , 2014.

5 c) Population

6 i. Source Population

The source populations for the study was all hypertensive patients attending at Adama Referral Hospital of medical OPD for treatment follow up & life modifying services during the study period.

7 ii. Study Population

The study populations were those adult hypertensive patients who are on anti-hypertensive treatment and life style modifying service follow up, strong enough and willing to respond or impartial to respond during their exit (exit interview) from outpatient department of Adama Referral Hospital during the study period.

iii. Inclusion and Exclusion criteria All hypertensive people who were attending medical OPD during the study period and volunteer will be included. People who are unable to give response for an informed consent will be excluded; like all pediatric age groups less than fifteen (< 15) years, all critically sick, all groups who will not committed to respond (refusals), all groups who have weak perception to express and all mentally ill or psychiatric patients.

8 d) Simple Size Determination

In this research, a convenience sampling techniques was used to select the study population. The sample was selected because of their convenience. The data was conducted in short period of time for around two month with exit interview method from accessible population who are used the service.

9 III. Study Variable a) Independent Variable

Socio demographic characteristics, such as: ? Age ? Sex ? Occupational status ? Educational status ? Religion ? Ethnicity ? Income ? Marital Status ? Address /

10 Data collection instruments

Data was collected through standard or structured questionnaire. Before starting the data collection the questionnaire was be translated to local language Amharic and pre-tested. The data was collected by 1 BSc Graduating pharmacy students by using a pre-tested structured interviewer administered questionnaire consisting both open & close ended questionnaires prepared to address adherence and factors related to anti-hypertensive drugs. The questionnaire was administered to all volunteer hypertensive people who fulfill the inclusion criteria while they are at medical OPD in Adama referral hospital. The hypertensive people were contacted by the assigned data collectors. The respondents were encouraged to answer the questions within the time they devoted as much as possible. And the data was collected through strict supervision and daily follow up or cross check up by the researchers.

ii. Data Collection Procedure At each health unit selected interviewee was identified who fulfill the criteria while they exit after they get service. 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. Interviewers was instructed to select the next exiting patient following the completion of each interview in order to avoid introducing bias by selecting only patient willing to wait for all interviews.

iii. Data Processing and Analysis After data were collected, the patient responses were cleared, entered in a computer and relevantly organized and made ratio and percentage with computer and present in table and chart. Statistical significance test was applied to reflect the association between the variables by using statistical package for social science version 20 (SPSS version-20), Chi-square and P-Value. Further interpretation was made with the context of the study objectives. Based on the results, conclusion and recommendation were made.

11 d) Ethical Issues Consideration

Letter of Permission was obtained from Ambo University, college of Health science, school of pharmacy before data collection and was given to the study area, Adama Referral hospital administration. Brief explanation was also given on the objectives as well as the benefit of the study to the concerned officials and their verbal consent was obtained. Each respondent who was interview is asked to give their consent after explaining the purpose, objective, and benefit of the study. Confidentiality and privacy of every respondent's information was ensured. The finding was availed to the concerned bodies up on the final result.

12 e) Operational Definition

i. Adherence: is defined as "the extent to which a person's behavior (taking medicines or executing lifestyle changes) coincides with medical or health advice". ii. Non-adherence: any form of deviation from adherence like losing one appointment, missing doses, etc. iii. 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 IV. Results

There were 96 respondents during the study period, among 96 respondents 42(43.75%) were males and the rest were females. Among the respondents 33.34% were >64 years old and only 9.37% were between 15-24 years and both farmers and daily labors were 10.42% each. Regarding the educational level larger proportions of respondents can read and write (28.13%), and only 12.5% of the study populations were at primary level. Among the study population 45.83% of the respondents were orthodox and only 3.12% were catholic. 29.16% of the respondents had an income of 100-800 birr per month and 18.75% had an income of >1200 birr per month. In this study 35.41% of respondents were married and 15.62% were divorced. Most of the respondents (67.71%) came from Adama town and minors were from Walanchit town (3.12%). Among the study population the number of social drugs users were higher for alcohol than for others which includes khat and cigarette. In this study number of non adherent was higher for cigarette because from 10 users of alcohol 8 was non adherent as we compare with other social drug users. From the study population the number of salt intakers was higher than those eating a meal high in animal fat. The number of respondent engaged in exercise was 24%.

There were also some problems of patients which contribute to non-adherence of the patients. These were lack of money, use of traditional medicine, negligence and forgetfulness. The number of patients that were non adherents due to lack of money, forgetfulness, negligence, and use of traditional medicine were 38, 19, 13, and 7, respectively. Thus, majority of respondents were non adherent due to lack of money. P-value= 0.623 The statistical association between educational level and lack of sufficient information on knowledge of adherence was (p=0.623). Majority of respondents 84.6% were sufficient knowledge on adherence and15.4% were lack of sufficient information on knowledge of adherence. The number of patients that lack sufficient knowledge on adherents 3(3.1%), 2(2.1%), 2(2.1%), and 2(2.1%) were illiterate, primary, secondary, and above secondary levels, respectively. **??** : Association between socio-demographic data and non-adherent in ARH, Adama, Ethiopia, June, 2014.

14 Age

Total number Respondents that were Non-adherent P-value= 0.001 In this study there is significant association between monthly income and adherence because they had p-values less than 0.05. Majority of respondents under low monthly income were non adherent to their medication. In this study also there were an association between age and adherence (p=0.02). Also majority of patients >64 ages were non adherents to their medication. From the study population the prolonged duration of the treatment is major treatment related factor that lead to non adherent of the respondents. Number of respondents that were non adherents due to treatment related factors such as adverse effect of the drug, different kind of medicine, and lack of the role health worker were 18, 9, and 4, respectively

15 V. Discussion

This study showed the magnitude of treatment related factor of non adherence with adverse effect of the drug , prolonged duration of treatment , different kind of medicine, and lack of role of health worker in describing about the drug were 18.8%, 21.8%, 9.3%, and 4.1% , respectively. Comparable findings were reported. The study conducted in Seychelles showed the magnitude of non adherence with medication side effect, use of alternative remedies and ineffective medication were (9.9%), (12.87%), and (5.49%) (10), respectively. Also study in Finland reported that adverse effect led to non adherence was 33 % (11).

In this study the number of respondents from social drugs user such as alcohol(31.25%), smoke cigarette(10.42%), and chew chat(18.75%) number of non adherents were (15.6%), (8.3%), and (8.3%) respectively. Also this study suggests that the number patients take contraindicated substance such as animal fat and salt (8.3%), and (10.3%) were non adherent respectively. Additionally from number of respondents that engaged in physical exercise 6.2% was non adherent to their medication. In line with this study in Seychelles showed the magnitudes of non adherence to engage in physical exercise (50%), stop smoke (15.84%), stop alcohol drink (21.57%), reduce salt intake (24.51%), and stop eating a meal high in animal fat (28.35%) (10). When we compare this study with study in seychelles different finding were reported In this study about 9.4% of male and 1% female were current cigarette smoking. Similar findings were obtained from study in Addis Ababa. It was reported 13.5% of males and less than 1% of females were current cigarettes smoking (12).

This study also showed age of the patient had significant association with respondents that were non adherent (p=0.02) this study shows that 36.5% patients whose age was >50 years were non adherent. Age of the patient was one of significantly associated factor with adherence.

There is one study that was conducted in Pakistan and 75% of adherent is due to increasing age which disagreed with finding of this study (13). In this study number of non adherent was increased as age of patient increased. This might be due to the reason that most patients does not know the disease that they acquired earlier due to different factors.

However, in this study there was no significant association between educational level and having information on knowledge of adherence for hypertension. 84.6 % of respondents had knowledge on adherence of antihypertensive medication. Similar finding was obtained from a study conducted in Gondar that majority of respondents (76.8%) were knowledgeable about HTN and its treatment (14). The overall level of awareness about hypertension and its treatment was very low. Higher awareness among ability of writing and reading and at above secondary education level is associated with higher adherence.

Another relevant point was economic factor. According to this study majority of the respondents were under low economic status. Greater than 50% of the respondents had an income of less than 800 birr per month. Comparatively Similar study conducted in Yirgalem showed that 83% lack of money was a major factor associated with treatment adherence (15). In this study also there were an association between monthly income and adherence (P=0.001). Therefore the price for treatment of the disease was the major factor for non adherence of the respondents.

In this study the total non adherence of respondents were 45.8% mostly due to 39.6% economic problem of the patient contributed to the non adherence of the respondents. In contrary to this the study conducted in Scotland showed 91% of the populations were non adherent to their medication (16). Also study conducted in Gondar showed that 35.2% were non adherent to their medication (14). Similar finding were reported from study conducted in Malaysia in which 44.2% of the populations were non adherent (17).

16 VI. Conclusion and Recommendation a) Conclusion

The study showed that from 96 respondent of hypertensive patients in Adama Referral Hospital 45.8%was non adherent to the prescribed medication. There were a number of perceived problems of patients with hypertension .This include forgetfulness, negligence, adverse effect of medication and old age or disability, economic problem, and use of social drugs of stopping of medication.

From the above factors economical problem and negligence were the major obstacles for the patients to be non adherent. Related to perceived problem of respondents on the health care system, there was old age of >50 on 36.5% of the respondents were non adherent and 44.9% of patients had problem due to cost of the medication since no free service was available for special cases in the hospital.

17 b) Recommendation

? Health professionals must educate hypertensive patients about their disease with specific emphasis on its causes, the severity of the disease, their medications and the consequences of non-adherence with treatment. ? Education may be transmitted by preparing leaflet for educated patients and verbally for illiterate one. ? And also the disadvantage of non adherence should be told to the patient always and other problem on the patient's side that could affect adherence should also be told.

Figure 1:

1

Variable

Figure 2: Table 1 :

2

Social drugs	No (%)	No of non adherent
Alcohol	30(31.25%)	15
Khat	18(18.75%)	8
Cigarette	10(10.42%)	8

Figure 3: Table 2 :

3

Contraindicated substance	No (%)	No of non adherent
Animal fat	16(16.3%)	8(8.3%)
Salt intake	19(19.7%)	10(10.3%)
Exercise	23(24%)	6(6.2%)

Figure 4: Table 3 :

4

Adama, Ethiopia, June, 2014	
Perceived problems	No of respondents that were non-adherence due
Lack of money	38
Negligence	13
Forgetfulness	19
Use of traditional medicine	7

Figure 5: Table 4 :

5

	Adama, Ethiopia, June, 2014		
Educational level	Total number	Lack of sufficient information	
		Yes	No
Illiterate	15	3	12
Read and write	27	6	21
Primary	12	2	10
Secondary	16	2	14
Above secondary	26	2	24

Figure 6: Table 5 :

7

Treatment related factor	Number of respondents that were non adherence
Adverse effect of the drug	18
Different kind of medicine	9
Prolonged duration of treatment	21
Lack of the role health worker	4

Figure 7: Table 7 :

Abbreviation	Year 2015
ARH: Adama Referral Hospital	
AU: Ambo University BSc: Bachelor of Science CBE: community based education CMHS: Collage of Medicine and Health Sciences FMOH - Federal Ministry of Health HTN: Hypertension OPD: outpatient department SES -Socio Economic Status TPA: Total Physical Activity UNICEF -United Nations International Children's Fund	Volume XV Issue 1 Version I
WHO: World Health Organization VII.	(D D D D) B

Figure 8:

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