



**ORIGINAL RESEARCH PAPER**

**Community Medicine**

**A CROSS-SECTIONAL STUDY ON MEDICATION ADHERENCE AND HYPERTENSION**

**KEY WORDS:** Medication adherence, Health care cost, Known hypertensives

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**ABSTRACT**

**BACKGROUND:** Advocates are exposed to long hours of stressful hectic work schedules and they struggle to cope up with life. This work pressure may predispose to non-communicable disease particularly hypertension. Considering above issues, a study was conducted among this target group. This part of the main study deals with the known hypertensive advocates in the study population and their adherence to anti-hypertensive medications. The objective is to evaluate the medication adherence among known hypertensive advocates practising in Madurai city. **METHODS:** A cross-sectional study was conducted in a sample 300 practising advocates satisfying the study criteria at Madurai district court for a period of 1 year by simple random sampling method. Among the 300 samples, 56 were known hypertensives. This current study is carried out in 56 known hypertensive advocates to evaluate the level of medication adherence to anti hypertensives using the pre tested structured medication adherence questionnaire and scoring. **RESULTS:** Among 56 known hypertensive participants, a majority of the known hypertensives, 39(69.6%) adhere to anti-hypertensive medications and remaining 17(30.4%) had no proper adherence to anti-hypertensive medication. **CONCLUSION:** Hypertension being a preventable and treatable disease can be reduced by following the healthy dietary practice and adherence to medications. Health education and motivation by health care professionals to the target group improves the effectiveness of the pharmacotherapy. Advocates being educated group should aim at consistent, sustain, regular health seeking effort to attain optimal medication adherence

**INTRODUCTION**

Medication adherence is defined by the World Health Organization as "the degree to which the person's behavior corresponds with the agreed recommendations from a health care provider". When an individual fails to follow the prescribed recommendations of the physician in terms of medication or behavioural change, then it is non-adherence. Non-adherence leads to increased healthcare costs and adverse health effects. Rates of non-adherence rates are higher in developing countries compared to the developed countries. In India, studies have reported rates of non-adherence to medication among the hypertensives to be between 27% and 70% 1. Advocates are exposed to long hours of stressful hectic work schedules and they struggle to cope up. This work pressure may predispose to non-communicable disease particularly hypertension. Considering above issues, a study was conducted among this target group. This part of the main study deals with the known hypertensive advocates in the study population and their adherence to medications.

**OBJECTIVES**

To assess the medication adherence among known hypertensive advocates practising in Madurai city

**METHODS**

**Study design:** Cross sectional study

**Place of study:** Bar association and law chamber, District court, Madurai.

**Period of study:** From September 2015 to August 2016.

**Study population:** Advocates in the age group of 30 years and above practicing in Madurai city.

**Inclusion criteria:** Inclusion criteria were advocates in age group of 30 and above; regularly practicing advocates

(attending court at least thrice a week); advocates practicing for a period of more than 5 years.

**Sample size**

According to available studies, relating to prevalence of hypertension among advocates 2, the prevalence was 36%, considering it as p with limit of accuracy as 16% of prevalence and with 10% attrition the sample size is calculated

$$N = Z_{\alpha/2} \times P \times Q / L^2 = 1.96 \times 1.96 \times 36 \times 64 / 5.76 \times 5.76 = 266.72.$$

With 10% attrition i.e. 26.6, minimum sample size calculated (266+26.6) = 293.32 rounded off to 300

Hence sample size of 300 was considered for the main study.

Among 300 advocates participated, 56 (18.7%) were found to be known hypertensives using structured pretested interview schedule. Fifty six advocates satisfying the inclusion criteria were assessed for medication adherence in the present study.

**Sampling Method:** Simple random sampling.

From Madurai Bar Association (M.B.A) Advocates voters affidavit list, 600 advocates were selected by simple random sampling technique using computerized random numbers. Out of that a sample of 300 advocates who satisfy the inclusion criteria are selected by enquiry through phone dialing. Permission from Madurai Bar Association Secretary was obtained prior to the data collection.

**Data Collection Tool:** Structured and pretested interview schedule (modified after pilot) and sphygmomanometer (mechanical type with a dial).

Data was collected using the final proforma. Data on background characteristics were obtained from all participants. Three blood pressure readings as per JNC VII were measured in all study subjects at an interval of 3 hours in sitting position and the average was calculated. The

participants were advised to refrain use of tobacco in any form or ingestion of caffeine during the 30 minutes preceeding measurement. Newly detected hypertensives were examined again after 2 days in the same manner to confirm that hypertension was constant. Apart from the known hypertensives, based on the blood pressure measurements, the remaining study subjects were classified according to JNC VII criteria.

Out of 300 advocates, only fifty six ( Known hypertensives ) were subjected to medication assessment questionnaire. Therefore medication adherence among known hypertensive advocates is discussed in the present study.

**Statistical Analysis**

The Data was entered and analysed using SPSS version 16.0. Descriptive statistical analysis done by calculating percentages.

**DETAILS ON QUESTIONNAIRE PERTAINING TO MEDICATION ADHERENCE AND ADHERENCE SCORING**

- In the present study, among known hypertensive advocates, medication adherence to antihypertensive medications, were assessed using a adherence scale published in a study done by Belayneh Kefale Gelaw et al 3. (Pre tested, piloted structured questionnaire)

**QUESTIONNAIRE**

1. Kindly answer the following drug adherence scoring questions, adherence score \_\_\_\_\_

(Note: adherence scores scales: 4: never; 3: rarely; 2: frequently; 1: daily.)

1. How often do you forget to take your medicine? 1 2 3 4
2. How often do you stop taking your medicine because you feel better? 1 2 3 4
3. How often do you stop taking your medicine because you feel worse? 1 2 3 4
4. How often do you stop taking medicines because you feel they are ineffective? 1 2 3 4
5. How often do you stop taking your medicines because you fear side effects or they have caused side effects? 1 2 3 4
6. How often do you stop taking your medicine because you are using traditional medicine or religious belief? 1 2 3 4

**TABLE 1**

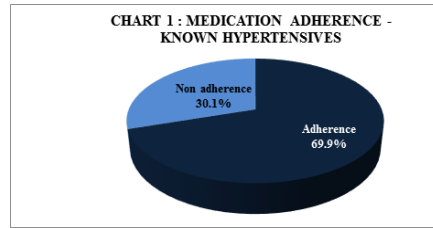
| Adherence score                             | Adherence status |
|---|------------------|
| 24 (full score)                             | Adherent         |
| 23 (one point missed from question 1)       | Adherent         |
| 23 (one point missed from another question) | Non- adherent    |
| 20-22                                       | Non- adherent    |
| <20   | Non- adherent    |

Note: Adherers were those who scored a full score of 24 or score of adherence.

**RESULTS: MEDICATION ADHERENCE AMONG KNOWN HYPERTENSIVE ADVOCATES**

Among 56 known hypertensive participants(Chart 1), a majority of the known hypertensives, 39(69.6%) adhere to anti-hypertensive medications and remaining 17(30.4%) had no adherence to anti-hypertensive medication. Nearly 70% of the study participants had good adherence due to practice of

successful self-care management even though they have a busy work schedule.



**DISCUSSION HYPERTENSION AND MEDICATION ADHERENCE**

In the current study, among 56 known hypertensive participants, a majority of the known hypertensives, 39(69.6%) adhere to anti-hypertensive medications and remaining 17(30.4%) had no adherence to anti-hypertensive medication. Around 70% of the advocates had good adherence due to practice of successful self-care management even though they have a busy work schedule. The above adherence was high compared to a study by Ramli A et al 4, among hypertensive patients in primary health care clinics at Malaysia(53.4%). As advocates are professionals they may have better knowledge on hypertension compared to others, which in turn influences on medication adherence. An increase in the score for medicine knowledge was also found to increase the odds of adherence It is evident from studies that 50% to 80% of patients treated for hypertension 5-7 are non-adherent to their treatment regimen. It is observed that the level of adherence in the above studies are low compared to present study.

In a study done by MA Krousel-Wood 8 et al in urban and sub urban areas of South-eastern Louisiana, assessed antihypertensive medication adherence and around 86% of participants had high adherence which is higher than the current study. The reason could be the well advanced health care system and good health seeking behaviour in western countries than in India.

A study done by Hamilton GA 9 stated that hypertension is a significant and often asymptomatic chronic disease, which requires persistent medication adherence to reduce the risks of stroke, cardiovascular disease and renal disease. Borzecki AM et al 10 his study stated that, low patient adherence to antihypertensive medication is the significant modifiable patient-related barrier to achieving controlled blood pressure. The present study also shows similar findings and justifies the significance of medication adherence in control of hypertension

**CONCLUSION**

Hypertension being a preventable and treatable disease can be reduced by following the healthy diet and periodic adherence to medications. Health education and motivation by health care professionals to the target group improves the effectiveness of the pharmacotherapy. Advocates being educated group should aim at consistent, sustain, regular health seeking effort to attain optimal medication adherence. Self- realization of individuals on periodic regular use of appropriate daily medications will potentially reduce the frequent hospital visit/ stay and reduce the health care expenses. Amidst the busy schedule advocates shall perceive the attitude to overcome the barriers to achieve good health.

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**Conflict of interest:** None declared

**Ethical approval:** The study was approved by the Institutional Ethics Committee of SRMC &RI (SRU), Chennai (IEC Ref: CSP-MED/15/AUG/24/37)

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