

A Pilot Study on Medication Adherence, Patient Satisfaction, KAP and Quality of Life of Hypertensive Patients

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ABSTRACT

Aim: The present study was designed as a pilot study to assess the prevalence and reasons for occurrence of hypertension and identify the various treatment options prescribed and to determine the patients' awareness and adherence to the treatment. **Materials and Methods:** An institution based cross-sectional study for a period of one month was conducted among the patients of Department of General Medicine, DM WIMS Multispecialty Hospital, Wayanad, Kerala by using standard questionnaires. 51 patients who meet the inclusion criteria were enrolled in the study. Well-structured questionnaires and standard tools such as Patient Satisfaction Scale (SAPS), Hill-Bone medication adherence scale (HB-MAS), WHOQOL-BREF were utilized to collect the data. Collected data was scrutinized by using Statistical Package for Social Sciences (SPSS version 15.0). Student *t*-test and one-way ANOVA were employed to test for associations at 95% confidence interval. $P < 0.05$ were considered significant. **Results:** The Results indicated rise of prevalence of hypertension in rural regions. Middle aged male group was mostly affected. Majority of the participants were affected with Grade III hypertension for more than five years and also affected with other chronic illness. All the study subjects were treated with multi-therapy regimen with dose frequency of BID. Results showed a lesser level of treatment satisfaction, medication adherence, KAP and quality of life of study population. **Conclusion:** The results strongly supported the need of the patient counselling by clinical pharmacists to improve the analysed parameters. Hopefully, future study with larger sample size with proper patient counselling could provide a significant outcome.

Keywords: Hypertensive patients, Medication adherence, Patient satisfaction, KAP, Quality of Life.

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INTRODUCTION

Hypertension is a serious community health issue in several countries. It remains notable public health problem and one of the most important factors for Coronary Heart Disease (CHD), stroke, and fatal renal disease.¹ Hypertension is the reason for 7.1 million premature deaths every year and accounts for around 13% of all deaths worldwide.² It was estimated that the Cardiovascular Diseases (CVD) are responsible for 1.5 million deaths every year in India. Cardiovascular Diseases (CVDs) are estimated to be responsible for 1.5 million deaths annually. Hypertension is a key risk factor for CVDs, including stroke and its implication is growing disproportionately in developing countries as they undergo demographic shift.³ The hypertension algorithm is Figure 1.⁴

Nowadays efficacious therapy options are available for hypertension management. However, in a survey^{4,5} it was reported that only 37% of hypertensive patients have their blood pressure under control. Non-adherence of patients to treatment procedures remains a major challenge for medical professionals and social scientists. As a result, marked numbers of affected do not get the utmost benefit of the therapy, leads to poor health results, lesser quality of life and the rise of health care costs. Although several advances made in the adherence research, the non-adherence rates have remained nearly stable in the recent decades. Imperfect adherence to anti-hypertensive therapy is a major drawback in the successful therapeutic control of high blood pressure. It also compromises the objects of health care system and the professionals and the policy makers in enhancing the health of populations. Failure to adhere leads to medical and psychological complications of the disease, lowering the patients' quality of life, spoil the health care resources and destroys the public confidence in health systems.

In India, the pervasiveness of hypertension is reported to be rising swiftly in urban areas, and the same trend is escalating slowly to rural areas. However the hypertension prevalence in India has



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been reported to vary regionally, the recent pooled analyses of various epidemiological studies suggest that hypertension is present in 25% of adults in the urban locations, and in 10% of individuals in the rural India.⁶

In India, the state Kerala is in an advanced phase of epidemiological move compared with the rest of the Indian states. In a comparative study focused on a five city with the object of evaluating the hypertension prevalence among women in the age group of 20–64 years, the prevalence was reported to be topmost in Thiruvananthapuram, the capital city of Kerala.⁷ Another one recent study focused on middle-aged population in Thiruvananthapuram city also confirmed a very high prevalence of hypertension (54.5%),⁸ another study of focused on senior populations in Kerala and Maharashtra states (India), and Dhaka (Bangladesh) reported a very high prevalence of hypertension both in urban (69%) and rural Kerala (55%).^{9,6} To our knowledge, most of the studies on hypertension prevalence in Kerala were conducted on samples from southern part of the state such as the capital city, Thiruvananthapuram and also focused on the central regions such as Kottayam. It is unclear that the data from these regions would adequately reflect the burden of hypertension in the rest of the state. Based on this view, Wayanad, the northern district of Kerala was selected for the present study which was designed as a pilot study to assess the prevalence and reasons for occurrence of hypertension and identify the various treatment options prescribed and to determine the patients' awareness and adherence to the treatment.

MATERIALS AND METHODS

Study Design

After getting necessary approval from institutional ethical committee (IEC/DM VIMS/November/2020-017), an institution based cross-sectional study for a period of one month (Dec. 2020) was conducted among the patients of Dept. of General Medicine, DM WIMS Multispecialty Hospital, Wayanad, Kerala by using standard questionnaires. 51 patients of both sex diagnosed with hypertension, above eighteen years of age and willing to participate were included in the study. Pregnant women, non-willing and below eighteen years of age were excluded from the study.

Validity and Reliability

The objectives of the study, methodology, application of questionnaires were analysed and studied well. The validity, stability and clarity of the selected data collection tools were checked carefully and the modification needed was done as per the suggestion of experts.

Data Collection

A brief introduction regarding the study was given to the participants and their consent in written format was collected properly. Initially, demographic and clinical data and data of knowledge, attitude and practice of the participants was collected by using standard questionnaire¹⁰ Short Assessment of Patient Satisfaction Scale (SAPS)¹¹ a short, valid and reliable 7 item scale was employed to assess the patient satisfaction with their treatment. The responses scales are 5-point scales and the SAPS scores of 0–10 are interpreted as very dissatisfied, the score of 11–18 indicated dissatisfaction. Scores from 19–26 are interpreted as satisfied and from 27–28 is considered as very satisfied. Hill-Bone medication adherence scale (HB-MAS), a nine item scale¹²⁻¹⁴ was used to assess the medication adherence of study subjects. The score of 9 is labelled as "perfect adherence" and the scoring higher than 9 is "non-perfect adherence". WHOQOL-BREF¹⁵ was used for the assessment of quality of life of study subjects. It contains 2 items from the overall QOL and general health and 24 items of satisfaction with rating on a 5-point Likert scale. The 24 items were grouped into 4 domains: Physical health with seven items (DOM1), Psychological health with six items (DOM2), Social relationships with three items (DOM3) and Environmental health with eight items (DOM4). Each item of the WHOQOL-BREF is scored from 1 to 5 on a response scale. The Malayalam version of WHOQOL-BREF was used in this study.

Data Analysis

Collected data was scrutinized by SPSS version 15.0 (Statistical Package for Social Sciences) Student *t*-test and one-way ANOVA

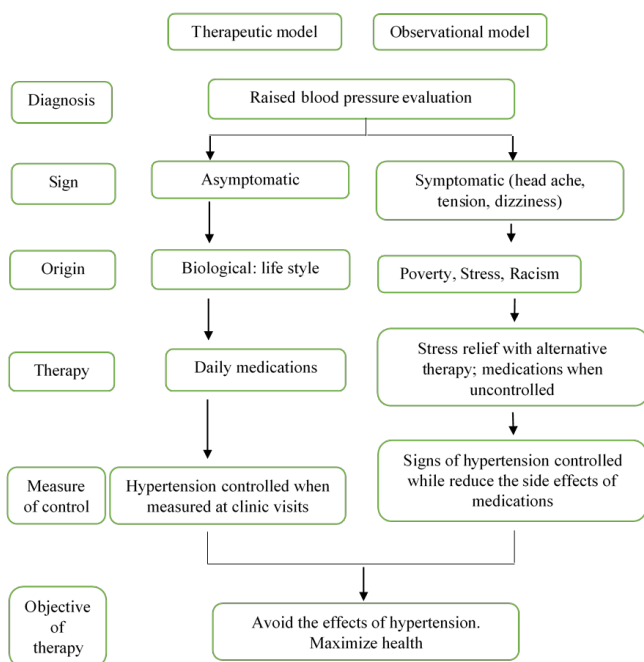


Figure 1: Hypertension algorithm.

were applied to test for associations at 95% confidence interval. $P < 0.05$ were considered significant.

RESULTS AND DISCUSSION

Institution based cross-sectional study for a period of one month was conducted among 51 patients with hypertension in the Department of General Medicine, DM WIMS Multispecialty Hospital, Wayanad, Kerala. Regarding with the demographic data, the results showed that 42 of 51 study subjects (82.4%) were males and remaining 9 patients (17.6%) were females. From the analysis of age distribution, it was found that majority of patients, 14 out of 51 (27.5%) belongs to 51–55 age group. Next to that, 12 patients (23.5%) come under the ≤ 50 years age group. The age group 61–65 and 66–70 constitute 7 patients (13.7%) individually. 6 patients (11.8%) belongs to 56–60 years age group and 5 patients (9.8%) come under ≥ 70 years age group. The results showed that 41 participants (80.4%) of the study were married and remaining 10 (19.6%) were unmarried. From the results, it was found that majority of the patients (37 of 51; 72.5%) were belongs to village set up. And remaining 14 candidates (27.5%) were came from the town atmosphere. Regarding with educational status, 32 study subjects (62.7%) had no formal education. Only 14 (27.5%) were crossed the primary level education and only one (2%) reached high school level education. But it was also found that two candidates completed graduation and another two were completed post-graduation. Analysis of occupation status revealed that majority of the candidates, 27 out of 51 (52.9%) were employed and 10 candidates (19.6%) were self-employed. 8 candidates (15.7%) were retired person and remaining 6 were house wife. Regarding with the monthly income, majority of the study subjects, 19 out of 51 (37.3%) were came under 5000–10000 rupees category. 12 candidates (23.5%) were come under 10000–20000 rupees category. 18 candidates (35.3%) were below 5000 rupees and only 2 candidates (3.9%) were above 20000 rupees monthly income category. Analysis of food habits revealed that majority of the study subjects, 47 candidates; (92.2%) were non-vegetarian and only 4 (7.8%) were vegetarian. Analysis of tobacco usage revealed that 29 candidates (56.9%) had this habit and 14 candidates (27.5%) had liquor habit and only 8 candidates had neither tobacco nor liquor habit (Table 1).

Regarding with the health related information and clinical data of participants, from the results it was found that the BMI was normal in 26 study subjects (51%) Remaining 25 candidates (49%) were found with overweight. 20 candidates (39.2%) replied good, when asked about the current health status, while 31 respondents (60.8%) said it was poor. 37 study subjects (72.5%) had family history of hypertension. From the analysis of BP level of study subjects, it was found that majority of the patients, 36 out of 51 (70.5) were affected with Grade III hypertension, remaining 15 candidates (29.4%) were affected with Grade II hypertension. 25 patients (49%) were affected with this disorder for more than

Table 1: Baseline data of study subjects.

Characteristics	Frequency	Percentage
Gender		
Male	42	82.4
Female	9	17.6
Total	51	100
Age (Years)		
≤ 50	12	23.5
51-55	14	27.5
56-60	6	11.8
61-65	7	13.7
66-70	7	13.7
≥ 70	5	9.8
Total	51	100
Marital status		
Married	41	80.4
Unmarried	10	19.6
Total	51	100
Residency		
Town	14	27.5
Village	37	72.5
Total	51	100
Educational status		
No formal	32	62.7
Primary	14	27.5
High school	1	2
Graduate	2	3.9
Post graduate	2	3.9
Total	51	100
Occupation		
Employed	27	52.9
Self employed	10	19.6
Retired	8	15.7
House wife	6	11.7
Total	51	100
Monthly income (in rupees)		
≤ 5000	18	35.3
5000-10000	19	37.3
10000-20000	12	23.5
≥ 20000	2	3.9
Total	51	100
Diet		
Vegetarian	4	7.8
Non vegetarian	47	92.2

Characteristics	Frequency	Percentage
Habitual factors		
Tobacco usage	29	56.9
Alcohol	14	27.5
Nil	8	15.7
Total	51	100

Table 2: Clinical and health related data of study subjects.

Characteristics	Frequency	Percentage
BMI		
Normal	26	51
Overweight	25	49
Total	51	100
Current health status		
Good	20	39.2
Poor	31	60.8
Total	51	100
Family history of hypertension		
Yes	37	72.5
No	14	27.5
Total	51	100
BP Level		
Grade II	15	29.4
Grade III	36	70.5
Total	51	100
Duration of disease		
1 – 5 years	26	51
≥5years	25	49
Total	51	100
Therapy type		
Multi therapy	51	100
Frequency of dosing		
Daily	1	2
BID	50	98
Total	51	100
Presence of other chronic illness		
Yes	33	64.7
No	18	35.3
Total	51	100

5 years while 26 patients (51%) were in between one to five years and all (100%) were treated with multi-therapy regimen. Regarding with the frequency of dosing, majority of the study subjects, 50 candidates (98%) were taken the medications by BID. It was found that 33 patients (64.7%) were affected with other chronic illness (Table 2).

The present study revealed that the males were predominantly affected with hypertension. The high prevalence of smoking and liquor habits among the males may be the reason for the above outcome similar findings were documented in previous studies.^{1,16,17} Elevated body mass index is closely associated with hypertension.³ The results of this study also revealed the same aspect. The present study reported that the prevalence of hypertension was higher in the age group of 51–55 which indicated the role of age related environmental influences and senescence of body system in the prevalence. Majority of the study subjects were came from villages that reflects the previous reports.^{6,18} and confirmed the rise of prevalence in the rural areas also. Moreover, majority of the participants had no formal education, worked on daily wages basis particularly in the tea estates with the monthly income in the range of ≤5000 up to 10,000. These findings were merely similar with a previous report.¹⁹ Also majority of the study subjects had non vegetarian food habits.

From the analysis of patient satisfaction, it was found that majority, 48 patients (94.1%) were in dissatisfied condition. Only 3 patients (5.9%) were satisfied with their treatment. A perfect medication adherence was found in 39 study subjects (76.5%), remaining 12 (23.5%) were found with non-perfect adherence (Table 3). These outcome are slightly differed from certain previous reports^{2,20-24} which may be due to smaller sample group. However poor medication adherence is common issue. The findings of the present study is useful to focus on identifying the reasons and methods to rectifying the same in our main study in the future. The mean and IQR score obtained in the analysis of quality of life of study subjects showed a poor quality of life in overall score which is shown in Table 4. Findings of the present study was comparable with the earlier findings.²⁵⁻²⁷

Table 3: Analysis of treatment satisfaction and medication adherence of study subjects.

Characteristics	Frequency	Percentage
Treatment satisfaction (SAPS)		
Dissatisfied	48	94.1
Satisfied	3	5.9
Total	51	100
Medication adherence (HB-MAS)		
Perfect adherence	39	76.5
Non-perfect adherence	12	23.5
Total	51	100

Table 4: Quality of life mean scores for n=51.

Characteristics	N	Mean \pm SD	Range	Median	IQR
Overall QOL	51	72.4 \pm 4.4	64–84	72	69–75
Physical	51	58.6 \pm 5.1	50–75	56	56–63
Psychological	51	42.9 \pm 9.3	25–63	44	38–50
Social relationship	51	43.9 \pm 9.5	25–69	44	31–50
Environmental	51	45.5 \pm 7.2	31–56	44	38–50
Overall QOL	51	44.6 \pm 4.3	36.5–55.8	44.2	41.3–47.1

Table 5: Analysis of Knowledge, Attitude and Practice of study subjects.

Characteristics	Frequency	Percentage
Knowledge		
Poor	22	43.1
Average	22	43.1
Good	7	13.7
Total	51	100
Attitude		
Negative	7	13.7
Positive	44	86.3
Total	51	100
Practice		
Poor	13	25.5
Average	28	54.9
Good	10	19.6
Total	51	100

In case of analysis of knowledge, attitude and practice of study subjects, the results showed a mixed response which is shown in Table 5. In case of knowledge aspect, equal number of study subjects (22 in each category) were come under poor and average knowledge category. Only 7 participants showed a good knowledge. In attitude section, majority of the participants, 43 candidates showed a positive attitude and in case of practice category, majority, 28 participants were come under average group, next to that 10 participants showed a good score. These findings are in accordance with certain previous reports.²⁸⁻³⁰ Hopefully, the patient counselling by the clinical pharmacists may bring the positive changes in the results.

CONCLUSION

The results of this pilot study clearly indicated the rise of prevalence of hypertension in rural regions. Males in the middle age group was mostly affected. It was found that different parameters analyzed such as treatment satisfaction, medication adherence, KAP and quality of life of study population was comparatively low. Of course, some limitations such that the study relies on self-reporting of patients. It has the drawback of bias and eliciting socially acceptable responses only. Moreover, the study

did not note the hypertensives who did not visit the hospital during the study period. Importantly, the results of present study strongly suggested the need of the patient counseling by clinical pharmacists which may improve the above said analyzed parameters. Hopefully, our future main study with larger sample size with proper patient counseling could provide a significant outcome.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

SAPS: Short assessment of patient satisfaction scale; **HB-MAS:** Hill-Bone medication adherence scale; **WHOQOL-BREF:** World Health Organization Quality of Life; **CVDs:** Cardiovascular diseases; **CHD:** Coronary heart disease; **BMI:** Body mass index; **KAP:** Knowledge, attitude and practice.

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