Assessment of Treatment Satisfaction, Adherence, Knowledge, Attitude and Practice, Quality of Life and Impact of Patient Counselling in Hypertensive Patients in Multispecialty Hospital

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Abstract

The present study was designed with the object to assess the prevalence of hypertension and to identify the various treatment options prescribed and to determine the patients' awareness, adherence to the treatment, KAP, quality of life and the impact of patient counselling in the above parameters. With this aim an institution based cross-sectional study for a period of ten months was conducted among the patients of Department of General Medicine, DM WIMS Multispecialty Hospital, Wayanad, Kerala by using standard questionnaires. 520 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. After initial collection of the data, counselling was provided to each patients about disease, life style modification and medication usage with the aid of suitable validated patient information leaflet. After completion of counselling, once again the patient satisfaction, medication adherence, KAP and quality of life of the participants was assessed to identify the impact of counselling. 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. The Results indicated rise of prevalence of hypertension

in rural locations. 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 before counselling assessment, but after counselling assessment showed significant improvement in the above said parameters. The results of the present study strongly revealed the impact of patient counselling by clinical pharmacists in the improvement of patient related factors.

Keywords: Hypertensive patients, Medication adherence, satisfaction, KAP, Quality of life, patient counselling

INTRODUCTION

Hypertension is one of the major risk factors for coronary heart disease and stroke. The World Health Organization (WHO) has estimated that about 62% of cerebrovascular disease and 49% of ischemic heart disease burden worldwide are attributable to suboptimal blood pressure levels (systolic blood pressure, SBP≥115mmHg), an observation consistent across groups defined by sex, age, and ethnicity. High blood pressure is estimated to cause 7.1 million deaths annually accounting for 13% of all deaths globally. [1,2] Overall 26.4% (972 million) of the adult world population was estimated to have HTN in the year 2000, a figure that is projected to increase to 29.2% (1.56 billion) by the year 2025. [2,3]

India, the world's largest democracy, is undergoing a rapid economic growth. This growth has been accompanied by demographic, lifestyle and cultural changes which have had a large impact on the health profile of India's citizens and placed a significant strain on the country's health care system. [4-7] Whilst such changes may be most obvious in major cities, such as Delhi and Mumbai, they are also likely to impact those living in the rural areas. Over 70% of India's population live in rural areas, yet access to government healthcare is much poorer than in urban areas, with twice the number of hospital beds available to urban dwellers per head of population. [7,8] In India, the prevalence of HTN is reported to be increasing rapidly in the urban areas, and the same trend is spreading gradually to rural areas. Though the prevalence of HTN in India has been reported to vary regionally, recent pooled analyses of several epidemiological studies in India suggest that HTN is present in 25% of adults in the urban areas, and in 10% of individuals in the rural areas. The same study estimated that there were about 66 million hypertensives in India (32 million rural and 34 million urban). [2,9]

In India, the state Kerala is in an advanced stage of epidemiological transition compared to the other states. In a five-city comparative study evaluating hypertension prevalence among women in the age group of 20–64 years, prevalence was reported to be the highest in Thiruvananthapuram, the capital city of Kerala state. [10] A recent study of the middle-aged population in Thiruvananthapuram city also confirmed a very high prevalence of hypertension (54.5%). [11] Another study of the elderly 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%). [2,12] 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 if data from these regions would adequately reflect the burden of hypertension in the rest of the state. Specifically, such studies focusing on the northern districts of the state were very less to the best of our knowledge. Based on this view, Wayanad, the northern district of Kerala was selected for the present study with the aim 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, their KAP, quality of life and the impact of patient counselling in the above said parameters analyzed.

METHODS

Study Design

After getting necessary approval from institutional ethical committee (IEC/DM WIMS/November/2020-017), an institution based cross-sectional study for a period of ten months from April-2021 to January-2022 was conducted among the patients of Dept. of General Medicine, DM WIMS Multispecialty Hospital, Wayanad, Kerala by using standard questionnaires. 520 patients of both sex diagnosed with hypertension, above 18 years of age and willing to participate were included in the study. Pregnant women, non-willing and below 18 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 [13] of the participants was collected by direct interview method using standard questionnaire Short assessment of patient satisfaction scale (SAPS) [14] a short, reliable and valid seven item scale was used to assess 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), the nine item scale [15-17] was used to assess the medication adherence of study subjects. The score of 9 is labelled as "perfect adherence" and scoring higher than 9 is "non-perfect adherence". WHOQOL-BREF [18] was used for the assessment of quality of life of study subjects. It contains two 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 divided into four domains: Physical health with 7 items (DOM1), Psychological health with 6 items (DOM2), Social relationships with 3 items (DOM3) and Environmental health with 8 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. After an initial assessment, counselling was provided to each patients about disease, life style modification and medication usage with the aid of suitable validated patient information leaflet. After completion of counselling, once again the patient satisfaction, medication adherence, KAP and quality of life of the participants was assessed to identify the impact of counselling.

Data Analysis

Collected data was analysed 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 AND DISCUSSION

Institution based cross-sectional study for a period of one month was conducted among 520 patients with hypertension in the Department of General Medicine, DM WIMS Multispecialty Hospital, Wayanad, Kerala. Regarding with the demographic data, the results showed that 273 of 520 study subjects (52.5%) were males and remaining 247 patients (47.5%) were females. From the analysis of age distribution, it was found that majority of patients, 120 candidates out of 520 (18.8%) belongs to 51-55 years age group. Next to that, 108 patients (20.8%) come

under the 56-60 years age group. 61-65 years age group constitute 103 patients (19.8%). 98 candidates (18.8%) came under 66-70 years age group and remaining 91 patients (17.5%) belong to below 50 years age group. The results showed that 421 participants (81%) of the study were married and 53 candidates (10.2%) were unmarried. 18 participants (3.5%) get divorced and remaining 28 patients (5.4%) are widow. From the results, it was found that majority of the patients (417 of 520; 80.2%) were belongs to rural set up. And remaining 103 candidates (19.8%) were came from the urban atmosphere. Regarding with educational status, majority of the study subjects 136 out of 520 (26.8%) had primary level education. 134 study subjects (25.8%) were crossed the high school level education. It was found that 116 patients (22.3%) were completed higher secondary education. It was also found that 77 candidates (14.8%) completed graduation and 24 out of 520 participants (4.6%) were completed post-graduation. Remaining 33 candidates (6.3%) were found with no formal education. Analysis of occupation status revealed that majority of the candidates, 254 out of 520 (48.8%) were belong to employed sector. 173 patients (33.3%) were house wife and 48 candidates (9.2%) were self-employed. Remaining 45 study subjects (8.7%) were retired person. Regarding with the monthly income, majority of the study subjects, 284 out of 520 (54.6%) were came under 10000-20000 rupees category. Next to that 5000–10000 rupees category constitute 159 participants (30.6%), 44 candidates (8.5%) were come under 20000–50000 rupees category. 25 candidates (4.8%) were belongs to below 5000 rupees monthly income category. Only 8 patients (1.5%) came under above 50000 rupees monthly income category. Analysis of food habits revealed that majority of the study subjects, 468 candidates; (90%) were non-vegetarian and only 52 (10%) were vegetarian. Analysis of tobacco usage revealed that 242 candidates (46.5%) had this habit and 83 candidates (16%) had liquor habit, 147 patients (28.3%) had both tobacco and liquor habits. only 48 candidates (9.2%) had neither tobacco nor liquor habit (Table 1).

Table 1. Baseline data of study subjects

Characteristics	Frequency	Percentage
Gender		
Male	273	52.5
Female	247	47.5

Total	520	100
Age (Years)		
≤50	91	17.5
51-55	120	23.07
56-60	108	20.8
61-65	103	19.8
66-70	98	18.8
Total	520	100
Marital status		
Married	421	81
Unmarried	53	10.2
Divorced	18	3.5
Widow	28	5.4
Total	520	100
Residency		
Urban	103	19.8
Rural	417	80.2
Total	520	100
Educational status		
No formal	33	6.3
Primary	136	26.8
High school	134	25.8
Higher secondary	116	22.3
Graduate	77	14.8
Post graduate	24	4.6
Total	520	100
Occupation		
Employed	254	48.8
Self employed	48	9.2
Retired	45	8.7
House wife	173	33.3
Total	520	100

Monthly income (in rupees)		
≤5000	25	4.8
5000-10000	159	30.6
10000-20000	284	54.6
20000-50000	44	8.5
≥50000	08	1.5
Total	520	100
Diet		
Vegetarian	52	10
Non vegetarian	468	90
Total	520	100
Habitual factors		
Tobacco usage	389	74.8
Alcohol	83	16
Nil	48	9.2
Total	520	100

In the BMI analysis of study subjects, the majority of patients, 257 out of 520 (49.4%) were found with overweight. 353 study subjects (67.9%) had family history of hypertension and remaining 167 participants (32.1%) replied no in this aspect. From the analysis of BP level of study subjects, it was found that majority of the patients, 364 out of 520 (70%) were affected with Grade III hypertension, remaining 156 candidates (30%) were affected with Grade II hypertension. 257 patients (49.4%) were affected with this disorder for more than 5 years while 263 patients (50.6%) 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, 507 candidates (97.5%) were taken the medications by BID and remaining 13 patients (2.5%) were taken the medications once daily. It was found that 325 patients (62.5%) were affected with other chronic illness and remaining 195 patients (37.5%) said no in this regard (Table 2). In the inquiry about the other illness, 92 patients (28.3%) said they were affected with diabetes mellitus. 55 patients (16.9%) replied as asthma. 76 participants (23.3%) were affected with CVDs. 69 patients (21.2%) told liver diseases as reply. 33 patients (10.1%) were affected with metabolic syndrome.

Table 2. Clinical and health related data of study subjects

Characteristics	Frequency	Percentage
BMI		
Under weight	06	1.2
Normal	229	44.0
Overweight	257	49.4
Obese	28	5.4
Total	520	100
Current health status		
Good	456	87.7
Poor	64	12.3
Total	520	100
Family history of hypertension		
Yes	353	67.9
No	167	32.1
Total	520	100
BP Level		
Grade II	156	30
Grade III	364	70
Total	520	100
Duration of disease		
1 – 5 years	263	50.6
≥5years	257	49.4
Total	520	100
Therapy type		
Multi therapy	520	100
Frequency of dosing		
Daily	13	2.5
BID	507	97.5

Total	520	100
Presence of other chronic illness		
Yes	325	62.5
No	195	37.5
Total	520	100

The present study revealed that the males were mainly affected with hypertension which may be due to the prevalence of liquor and smoking habits among the males. Similar findings were documented in previous studies. [19-21] Elevated body mass index is closely associated with hypertension. [7] The results of this study also revealed the same aspect. Majority of the study subjects had non vegetarian food habits which is also notable here. The present study reported that the prevalence of hypertension was higher in the age group of 51–55. The age related family and environmental influences and senescence of body system may be the reason for the high prevalence in this age group, majority of the patients were married which is also worth to note here. Majority of the study subjects were came from rural locations which confirmed the rise of prevalence in the rural areas also. These findings reflects the reports of previous literatures. [2,9] The present study revealed the existence of high literacy rate among the study population, mostly employed, have the monthly income in the range of 20000 rupees per month. This literacy rate and monthly income may be the reason for the awareness to seeking remedy for their disorder and for that reaching a multispecialty hospital.

From the analysis of patient satisfaction before counselling, it was found that majority, 451 patients (86.7%) were in dissatisfied condition. Only 69 patients (13.3%) were satisfied with their treatment. Likewise, a perfect medication adherence was found in 398 study subjects (76.5%), remaining 122 (23.5%) were found with non-perfect adherence. However after counselling assessment revealed that majority of patients (98%) have satisfaction with their treatment. Also, a notable shift was observed in the medication adherence of the patients (Table 3). A similar changes were found in the KAP and QOL aspects also (Table 4 & 5). Findings of the present study was comparable with the earlier findings. [23-27] Results of the present study strongly revealed the impact of patient counselling in the above said parameters.

Table 3. Analysis of treatment satisfaction and medication adherence of study subjects before and after counselling

Characteristics	**Before counselling**		**After counselling**	
Treatment satisfaction (SAPS)	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Dissatisfied	451	86.7	10	2
Satisfied	69	13.3	510	98
Total	520	100	520	100
Medication adherence (HB-MAS)	**Before counselling**		**After counselling**	
Perfect adherence	398	76.5	482	92.6
Non-perfect adherence	122	23.5	38	7.4
Total	51	100	520	100

Table 4. Analysis of Knowledge, Attitude and Practice of study subjects before and after counselling

Characteristics	**Before counselling**		**After counselling**	
Knowledge	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Poor	214	41.1	21	4
Average	214	41.1	108	20.8
Good	92	17.6	391	75.2
Total	520	100	520	100
Attitude				
Negative	71	13.7	-	-
Positive	449	86.3	520	100
Total	520	100	520	100
Practice				
Poor	133	25.5	6	1.2
Average	285	54.8	55	10.6
Good	102	19.6	459	88.3
Total	520	100	520	100

Table 5. Mean scores of different analyzed parameters (*n*=520)

Characteristics	N	Mean ± SD	Range	Median	IQR
Compliance score	520	47.8±2.8	40-54	48	46-50
Adherence score	520	32.1±2.2	26-36	32	31-34
SAP	520	12.5±1.9	8-18	12	11-14
Knowledge	520	7.7±0.6	5-8	8	8-8
Attitude	520	3±0	3-3	3	3-3
Practice	520	3.9±0.4	2-4	4	4-4
QOL					
Physical	520	80.3±6.1	60.7-96.4	82.1	75-85.7
Psychological	520	77.9±6.4	58.3-91.7	79.2	75-83.3
Social relationship	520	81.1±10	50-100	83.3	75-91.7
Environmental	520	74.1±7.2	25-90.6	75	71.9-78.1
Overall QOL	520	77.7±3.7	42.7-87.5	78.1	76-80.2

CONCLUSION

The results of the present study clearly indicated the rise of prevalence of hypertension in rural areas. Males in the middle age group was mostly affected with hypertension. In the initial assessment, it was found that the different parameters analysed such as treatment satisfaction, medication adherence, KAP and quality of life of study population was comparatively low. Even the presence of some limitations such as the study relies on self-reporting of patients; moreover, it has the drawback of bias and eliciting socially acceptable responses only, also, the study did not note the hypertensives who did not visit the hospital during the study period, the results obtained after counselling strongly revealed a positive impact of patient counselling by clinical pharmacist in the analysed parameters.

AUTHORS' CONTRIBUTIONS

K. Dilipkrishnan: Carried out the whole research work with the assistance of Dr R. Bino Kingsley and Dr M. L. Lal Prasanth. Dr. G. Gopalakrishnan: Designed the whole research work.

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CONFLICTS OF INTERESTS

Conflict of interest declared none

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