



IMPACT OF PHARMACIST INTERVENTION IN IMPROVING HEALTH RELATED QUALITY OF LIFE IN HYPERTENSIVE PATIENTS

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ABSTRACT The study was intended to evaluate the effectiveness of patient counselling in improving the quality of life (QOL) of hypertensive patients in a rural community. The hypertensive patients were randomized into control and intervention group, and both the groups were interviewed using WHO QOL-BREF questionnaires, screened BP for a period of nine months, respectively, at baseline and each follow-up after post counseling section to the intervention group. Data analysis was done by SPSS 16.1. Among 100 hypertensive patients, 40% were males and 60% were females. The QOL score for each domain of both intervention and control groups were almost poor ($p > 0.05$) at baseline and for the intervention group, a highly significant improvement ($p < 0.001$) was observed for all domains in final follow-up. This study showed a significant improvement in the patient's QOL towards HTN following pharmacist mediated counselling.

KEYWORDS : QOL, Hypertension, Patient Counselling.

INTRODUCTION

The overall burden of hypertension (HTN) related disease is rapidly rising in the developing World [1]. In 2000, over 972 million adult populations were predicted to have HTN and this quantity is anticipated to rise to 1.56 billion by the year 2025 [2]. HTN expands a consequential public health concern on cardiovascular health status and health-care systems in India [3]. Comorbidity associated with HTN may influence how person with HTN rate with their QOL. Poor management of HTN leads to several complications and end organ damage that ultimately impairs the health-related QOL in the individuals [4]. Studies have found that people with HTN had a poorer QOL indicator than people without the condition. By establishing a proven link between the disease and HRQOL, then developing interventions programs aiming at improving HRQOL will become a new relevant therapeutic objective in hypertensive subjects [5]. The study is intended to create self-awareness about the diseases and to improve their QOL and provide knowledge to control the disease progression. The association between HTN and QOL, with particular attention to these aspects, was investigated in this population-based study.

METHODOLOGY

The randomized controlled study was carried out for 9 months in the rural areas of Komarapalayam, Tamil Nadu. Based on inclusion criteria (patients diagnosed with HTN of either sex, aged between 35 to 65 years without comorbidities), a total of 100 patients were enrolled randomized into control ($n=50$) and intervention ($n=50$) group based on age. After obtained ethical clearance from the Institutional Ethical Committee (IEC). A separate data entry form was designed to collect patient demographics and BP. A validated QOL questionnaire was used to assess QOL among hypertensive patients. The study design was divided into baseline, first, second and third follow up visit, with a gap duration difference of three month. The baseline demography data, BP levels, and QOL scores were obtained from control and intervention group. After the collection of baseline data for both groups, patient counselling was given at each subsequent section only for intervention group. The impact of pharmacist intervention was assessed based on BP value and QOL scores after each post-counselling session. The gathered data were statistically analyzed by paired t-test using statistical software package for social sciences (SPSS) version 16.1 with level of significance ($*p < 0.001$).

RESULTS

The total hypertensive subjects were 100, of which 40% were males and 60% were females. Most of them were in the age range of 46-55 years (49%) followed by 56-65 years (38%) (Table 1). The mean score of systolic and diastolic BP of both the groups were given in Table 2. Scores of intervention group from baseline to third follow-up from all domains revealed that mean increases in physical, psychological, social and environment health, which was statistically significant ($p < 0.001$). Whereas in control group, the score was statistically non-significant ($p > 0.05$) in all domains (Table 3).

Table 1: Gender and age wise distribution of hypertensive patients

Parameter	Total number of hypertensive patients (n=100)
Gender	
Male	40(40%)
Female	60(60%)
Age distribution in years	
35-45	13(13%)
46-55	49(49%)
56-65	38(38%)

Table 2: Mean score of systolic and diastolic BP of the intervention and control groups before and after counseling

BP	Intervention		Control	
	Baseline (Mean±SD)	Final follow up (Mean±SD)	Baseline (Mean±SD)	Final follow up (Mean±SD)
Systolic BP (SBP)	149.12±15.146	145.12±12.248	148.46±13.86	150.50±11.985
Diastolic BP (DBP)	90.08±5.431	88.54±11.985	84.13±8.676	88.45±6.272

Table 3: QOL score for intervention and control group in hypertensive patients

QOL	Intervention (Mean ± SD)	Control (Mean ± SD)	t-value	p-value	Significance level
DOMAIN 1(Physical Health)					

Baseline	20.40±2.483	20.58±2.492	1.420	0.162	Non Significant
1 st follow up	20.74±2.448	22.06±1.531	3.970	0.000	Highly significant
2 nd follow up	24.66±2.379	25.82±2.553	4.501	0.000	Highly significant
3 rd follow up	25.82±2.513	29.32±2.543	17.456	0.000	Highly significant
DOMAIN 2(Psychological)					
Baseline	16.84±1.931	17.10±2.053	2.905	0.005	Non-significant
1 st follow up	20.26±2.284	20.62±2.258	2.990	0.004	Significant
2 nd follow up	20.60±2.060	23.00±1.385	7.024	0.000	Highly significant
3 rd follow up	20.26±3.521	23.60±1.498	6.419	0.000	Highly significant
DOMAIN 3(Social relationship)					
Baseline	8.54 ±1.951	8.76 ±1.825	3.070	0.003	Non-significant
1 st follow up	8.40±1.990	8.64±2.038	3.280	0.002	Non-significant
2 nd follow up	8.26±2.018	8.78±1.982	4.823	0.000	Highly significant
3 rd follow up	8.66±1.847	12.48±1.374	11.926	0.000	Highly significant
DOMAIN 4(Environment)					
Baseline	22.18±2.939	22.82±2.371	2.477	0.017	Non-significant
1 st follow up	22.72±3.017	23.16±2.824	2.597	0.012	Significant
2 nd follow up	17.23±1.357	12.93±1.799	12.302	0.000	Highly significant
3 rd follow up	22.82±2.994	34.20±2.650	21.962	0.000	Highly significant

(Note: $p>0.5$; non-significant, $p<0.01$; significant, $p<0.001$; highly significant)

DISCUSSION

For many chronic diseases like HTN assessing QOL can help in evaluating the physical and psychosocial impact of these diseases on the affected population. It was observed that the proportion of HTN was higher among females 60% than males 40%, and it may be due to postmenopausal women were more prone to HTN due to loss of estrogen production as it has vasodilatory effect [6]. Bhagat [7] *et al.*, has also reported that the postmenopausal women are at higher risk of cardiovascular problems in India as well as globally and this risk increases with age. Another study has also reported that prevalence of HTN among women increases with BMI [8].

Most of the hypertensives were belong to the age group of 46-55 years. The prevalence of HTN increases with age, it might be due to physiological changes of blood vessel flexibility [9]. Another studies also showed a significant positive correlation of systolic as well as diastolic BP with age [10].

Among the hypertensive patients, mean reduction in BP (SBP 149.12±15.146 to 145.12±12.248, DBP 90.08±5.431 to 88.54±11.985), was observed from baseline to final follow-up. The relationship between blood pressure status of the participant and HRQOL was also found to be statistically significant, in which participants having increasing/uncontrolled blood pressure were less likely to had good QOL than their counterparts. The result is consistent with similar studies [11] Even though patients with elevated blood pressure mostly have no physical symptoms but may have behavioural or emotional impairment which lowers their QOL. In this study, the intervention group showed a significant mean reduction of systolic BP after pharmacist mediated counseling. The previous study also showed similarities with these results [12].

The QOL scores of all four domains increases from baseline to final follow-up, which showed clinically significant ($p<0.001$) after

subsequent patient counselling. According to WHO, QOL is an important health outcome in its own right, representing the ultimate goal of all health interventions. There is less association of HTN with low QOL than there is with other conditions, such as arthritis, diabetes, depression, congestive heart failure, lung disease and coronary heart disease [13]

We determined that QOL was lower in participants with controlled HTN under drug treatment than in participants with uncontrolled HTN using or not using BP drugs. These findings are discordant with those reported by Li *et al.*, [5] who found higher HRQoL in controlled hypertensive patients compared with uncontrolled hypertensive patients under drug treatment. Another study also showed that there was a positive influence of pharmacist mediated counseling on QOL [14].

CONCLUSION

In conclusion, individuals with HTN have lower QOL at baseline and improved after subsequent counselling. Therefore, healthcare professionals have an indispensable role in providing adequate knowledge about the diseases, increasing the QOL and the life expectancy of patients to achieve a better clinical outcome. From a clinical perspective, QOL should be considered in the monitoring of hypertensive patients to estimate the burden of HTN and monitor the outcome.

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Conflict of interest

Authors declare no conflict of interest.

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