

Optimizing Quality of Life in Patients With Hypertension Through Comprehensive Pharmaceutical Care

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Abstract

Hypertension is a major risk factor of cardiovascular disease and its complications account for many deaths yearly in the world. The aim of the study was to evaluate the impact of pharmaceutical care on quality of life of hypertensive patients. The objectives of the study include finding the common anti-hypertensive drugs prescribed and identifying any adverse drug reactions. A randomized, prospective, interventional study was done on 226 hypertensive patients who were admitted to the General Medicine department for a period of 1 year. Pharmaceutical care was given to 104 patients from intervention group and the 100 patients from control group were not given any pharmaceutical care. The quality of life of the control and intervention group patients were compared before and after intervention using SF-36 questionnaire. The result shows that the quality of life increase in the Intervention group (P value <0.05) compared to the Control group. The Systolic and Diastolic blood pressure decreased in the Intervention group (P < 0.05) compared to the Control group. The patient knowledge also showed significant increase in the Intervention group patients (P < 0.05) compared to Control group. The study showed that providing pharmaceutical care to hypertensive patients increased their quality of life and also the knowledge of the disease and medications. This study concludes that providing pharmaceutical care to Hypertensive patients in the form of patient counselling can improve the quality of life of these patients.

Keywords: Quality of Life, Hypertension, Pharmaceutical care, Counselling.

INTRODUCTION

Hypertension is a major health problem throughout the world because of its high prevalence and its association with increased risk of cardiovascular diseases. Hypertension is defined as abnormally high arterial blood pressure involving high Systolic and or Diastolic levels. It means the persistent Systolic Blood Pressure (SBP) equal to or greater than 140 mmHg and or persistent Diastolic Blood Pressure (DBP) equal to or greater than 90 mmHg⁽⁴⁾. The elevation of Systolic and Diastolic Blood Pressure is recognized as a risk factor for many serious health disorders which may eventually lead to death if not managed.

The WHO and the International Society of Hypertension (ISH) have adapted limits in order to define the various grades of hypertension as mild (>140/90 but <160/100); moderate (<180/110); severe (<210/120) and very severe (>210/120)⁽⁴⁾. Hypertension is classified according to its cause as primary and secondary hypertension.

The term pharmaceutical care describes specific activities and services through which an individual pharmacist "cooperates with a patient and other professionals in designing, implementing and monitoring a therapeutic plan that will produce specific therapeutic outcomes for the patient". Pharmaceutical care is increasingly being augmented by activities that may be described as focused areas of practice, wherein the pharmacist is engaged in Drug monitoring, for a specific drug or for therapy for a specific disease state, Disease monitoring, for a specific disease state, Drug therapy and disease management /collaborative practice, by protocol

The provision of pharmaceutical care does not imply that the pharmacist is no longer responsible for dispensing functions. In many instances, however implementation of pharmaceutical care services necessitates a redesign of the professional work flow, with assignment of technical functions to technical personnel under the direct supervision and responsibility of the pharmacist.

The assessment of HRQoL is a particularly interesting endeavour in patients with hypertension as this condition is traditional risk factor for cardiovascular disease and therefore has a significant impact on the physical, social and

mental domains that determine the patients overall well-being and status. Assessing HRQoL of Hypertension patients take accounts of their perceived physical and mental health and function which become an important component of health surveillance and are generally considered valid indicators of service needs and intervention outcomes. The ability to identify indicators of poor health related quality of life is crucial for both improving clinical care and determining targets of intervention for the prevention and treatment of disease ⁽¹¹⁾.

The management of hypertension requires non-pharmacological as well as pharmacological methods. Non-pharmacological and pharmacological benefits can be achieved through the patients understanding of disease, medications and life style modification when the pharmacist provides them practical information via counselling ⁽⁵⁾. The objective of this study is to evaluate the impact of pharmaceutical care on quality of life of hypertensive patients.

METHODOLOGY:

A randomized, prospective, interventional study was carried out for a period of one year in the general medicine department inpatients in a multi-specialty hospital. The study was conducted in the General Medicine department of the tertiary care hospital. Patients in the age of 18 years and above diagnosed with Hypertension and patients with at least 1 anti-hypertensive drug prescription from the General Medicine Department were included in the study. Patients with mental illness, memory loss and patients not willing to participate in the study were excluded from the study. Well Structured Data Collection Form, Basic knowledge questionnaire and SF-36 questionnaire were the tools used. The study was carried out in 3 phases. In the preinterventional Phase, the patients were selected randomly and divided into Intervention Group (with pharmaceutical care) and Control Group (without pharmaceutical care). Both Intervention group and Control Group were given a basic questionnaire to check the knowledge about the disease and medications. Quality of Life before pharmaceutical intervention was assessed on both groups using SF-36 health survey Questionnaire.

In the interventional phase, the selected Intervention group patients were given pharmaceutical care through Hypertension education, Medication counselling, Life style modifications changes and dietary regulations. A patient information leaflet on Hypertension in Malayalam was also provided to the intervention group patients. A diet leaflet for Hypertension patients provided by the nutrition and dietetics was also given to the intervention group patients. The occurrence of any adverse drug reaction related to the anti-hypertensive drugs taken by the patients was also noted. The Control Group patients were not given any pharmaceutical care.

In the post interventional phase, after 2-3 months all the patients from both intervention and control group were followed up. The Quality of Life of patients in the intervention and control group was assessed again by using SF-36 Questionnaire. The Basic Knowledge of the disease and medication was also assessed on both groups by using a questionnaire. After the questionnaires are completed the pre and post scores of both basic knowledge questionnaire and the SF questionnaire score were compared to check the effect of providing pharmaceutical care to patients with Hypertension. All data collected were entered into statistical analysis software SPSS version 21.0 for statistical analysis. ADRs were made using student's t-test for continuous variables and chi-square test for categorical data. Chi square test was used for association of qualitative variables under study.

RESULTS AND DISCUSSION

A total of 226 patients were selected to participate in this study. 113 patients were randomly selected into Control and Intervention groups.

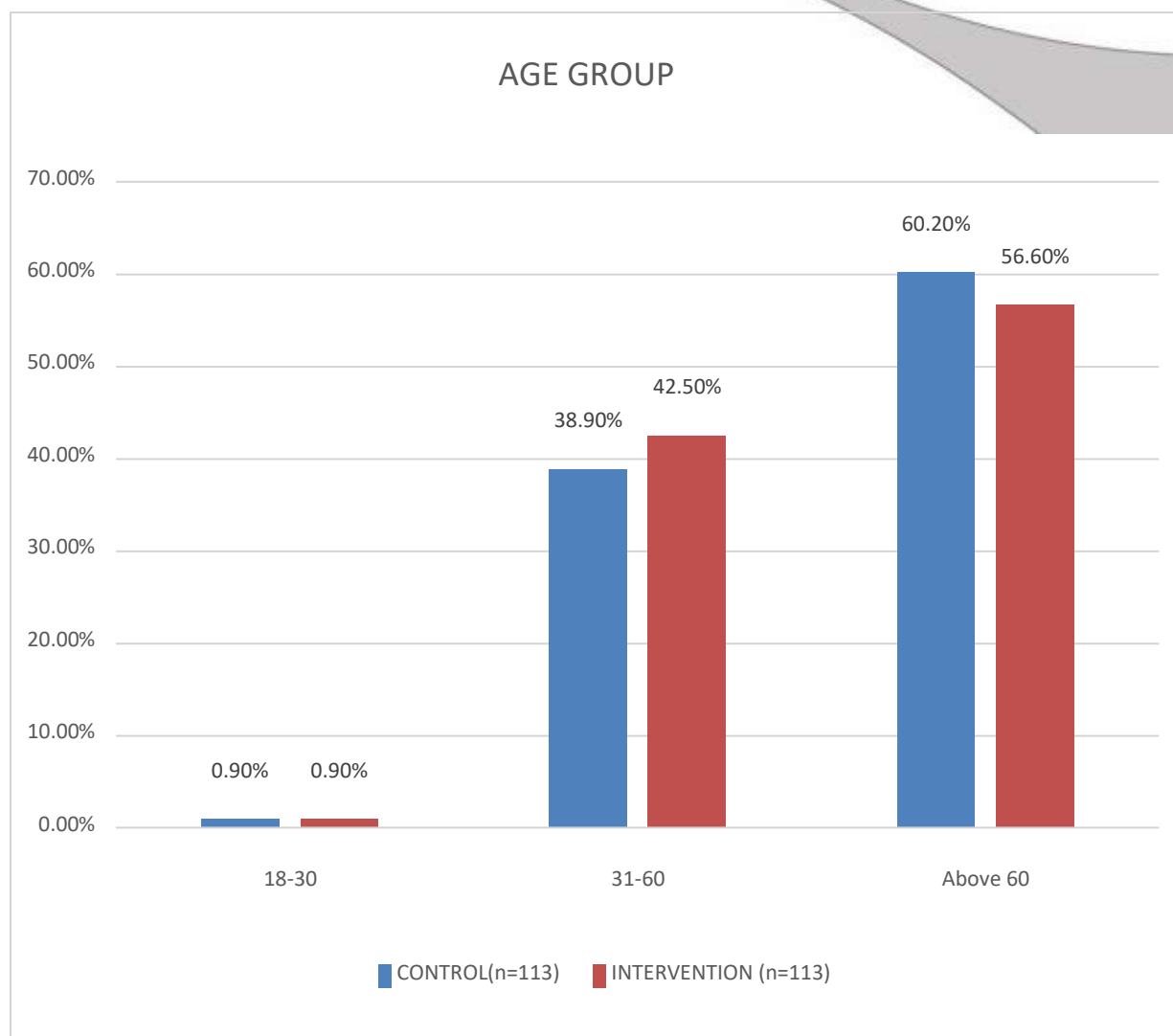


Figure 5.1: Distribution based on age

Most patients were in the age group of above 60 years (60.2% and 56.60%) in both groups. The least number of patients were from the age group of 18-30 years (0.9%) in both groups. This may be due to the fact that old age is a primary risk factor for Hypertension. Similar result was found in a study by Sunita Pawar et.al. (2014).

In the gender wise distribution more patients were male (64.6% and 63.7%) in both groups and female patients were lesser (35.4% and 36.3%) in number. This may be due to the fact that they have social habits like smoking and alcohol consumption. Similar result was shown in a study by Chaudhary GP et.al.(2017).

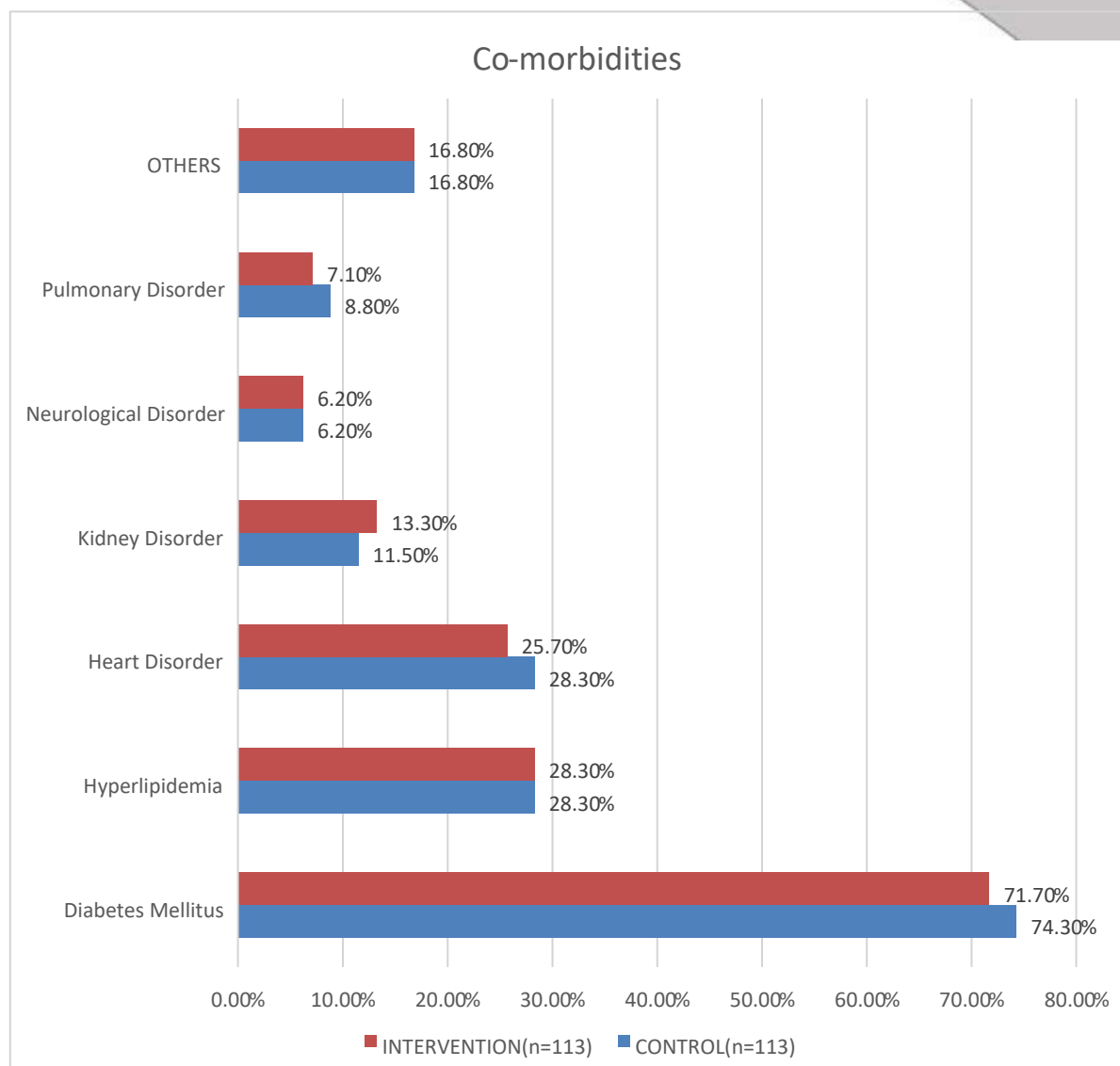


Figure 5.2 : Distribution based on Co -morbidity

Diabetes mellitus was the most common co-morbid condition (74.30 % and 71.70%) found followed by hyperlipidemia (28.30%) and heart disorders (28.30% and 25.70%) and the least common co-morbid condition found was neurological disorders (6.20%). This result may be due to the fact that Diabetes Mellitus is a major risk factor for Hypertension. Similar result was shown in a study by Sunita Pawar et.al.(2014).

Most number of patients 65(57.5%) showed family history of Hypertension in this study. This may be due to the fact that family history is known etiological factor for Hypertension. This is similar to result in study by Pranay Wal et.al.(2018).

25(22.10%) patients in control group and 26(23%) patients in intervention group had the habit of smoking and 18(15.90%) patients in control group and 18(15.90%) patients from intervention group had the habit of alcohol consumption. The amount of smokers and alcoholics were low in the study. This may be due to the fact that in the site of study (Malappuram) the major population is from the Muslim community.

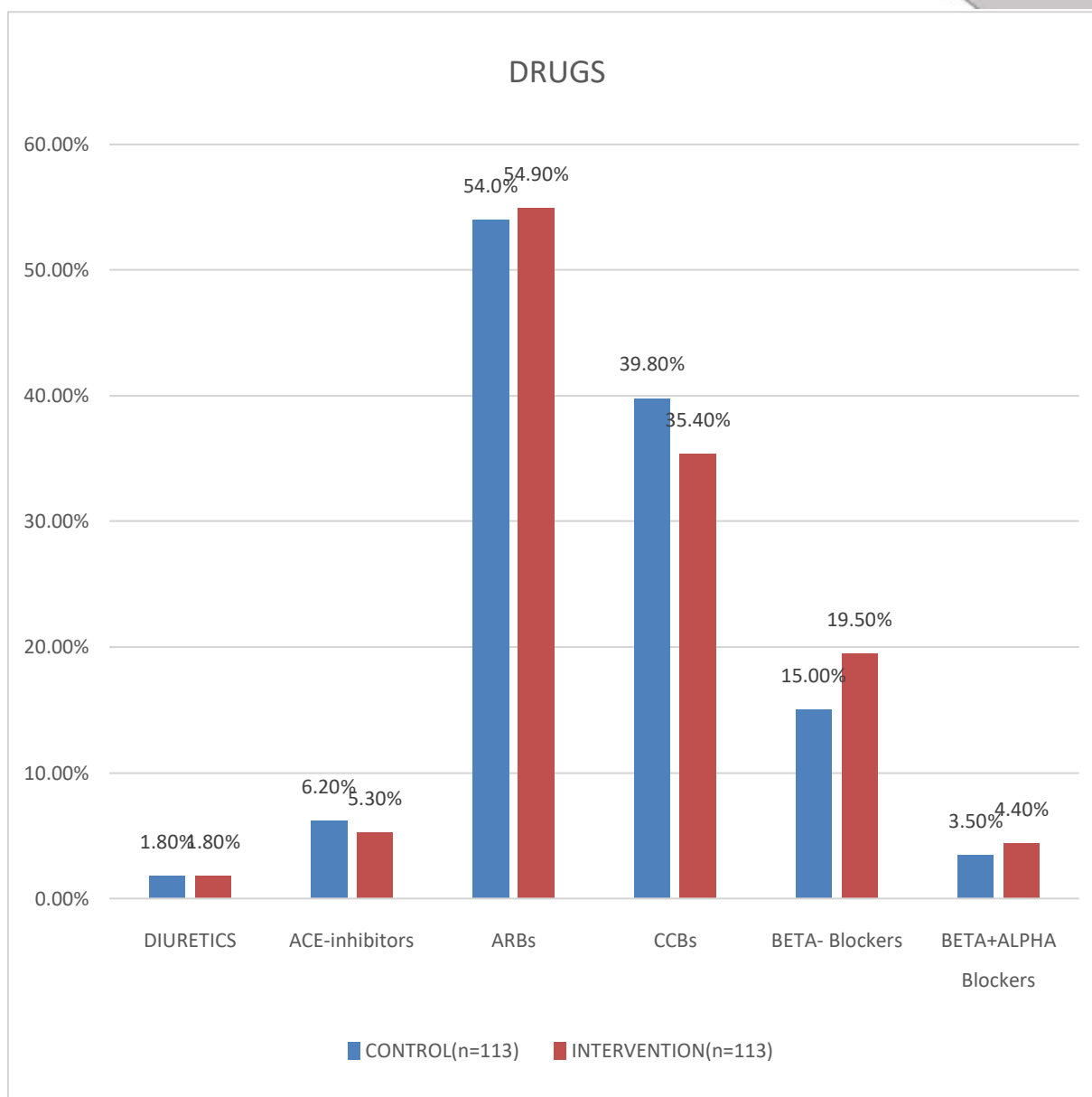


Figure 5.3: Distribution based on type of anti-hypertensive drug prescribed.

The most common anti-hypertensive drug used was ARBs (Control- 54%, Intervention- 54.90%) followed by CCBs (Control-39.80%, Intervention-35.40%) β -Blockers (Control-15% , Intervention- 19.50%) then ACE- Inhibitors (Control-6.20%, Intervention-5.30%) followed by $\beta + \alpha$ Blockers (Control-3.50%, Intervention-4.40%). The least common drug prescribed was diuretics (Control-1.80%, Intervention-1.80%). A different case result was shown in similar study by PO Erah et.al.(2013). This result may be due to the different prescribing habits of the physicians from different hospitals.

12(10.6%) patients had additional supplement drugs for the treatment of hypertension in Control group and 10(8.8%) took supplement medicines in Intervention group.

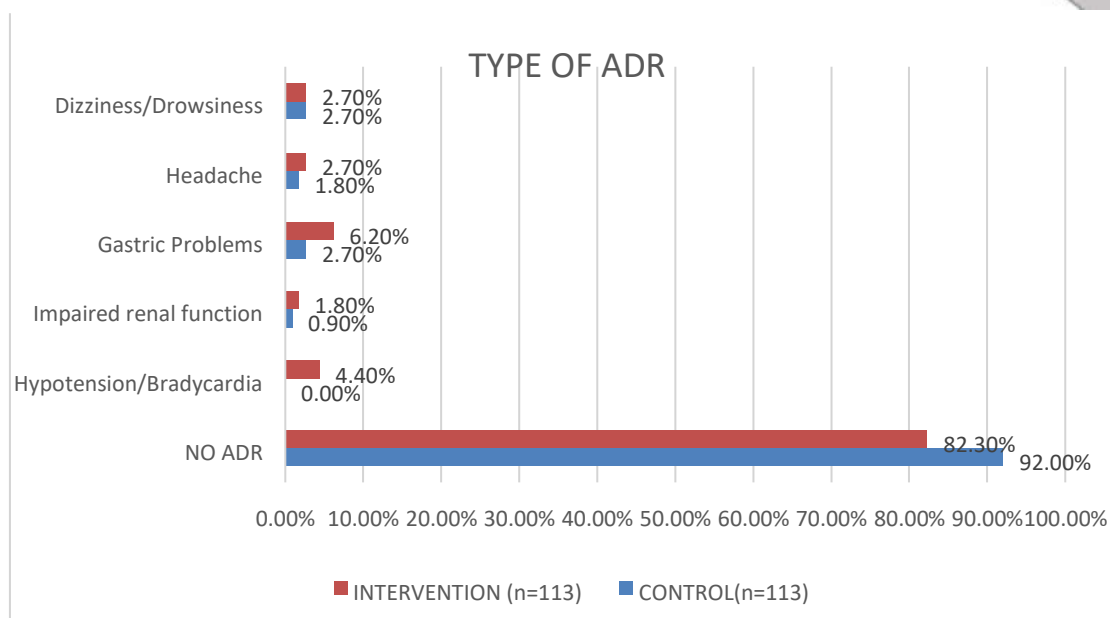


Figure 5.4: Distribution based on type of adverse drug reaction in patients due to anti- hypertensive drug

104(92.0%) and 93 (82.30%) patients did not have any type of ADRs from control and interventional group respectively. 9(8.00%) and 20(17.70%) patients showed ADRs from control and interventional group respectively. Most patients did not have any ADRs (Control-92.00%, Interventon-82.30%). The most common ADRs found were Gastric problems (2.70% and 6.20%) and dizziness/drowsiness (2.70%) and hypotension or bradycardia (4.40%). A dissimilar result was found in a similar study by SR Erikson et.al. (2008).

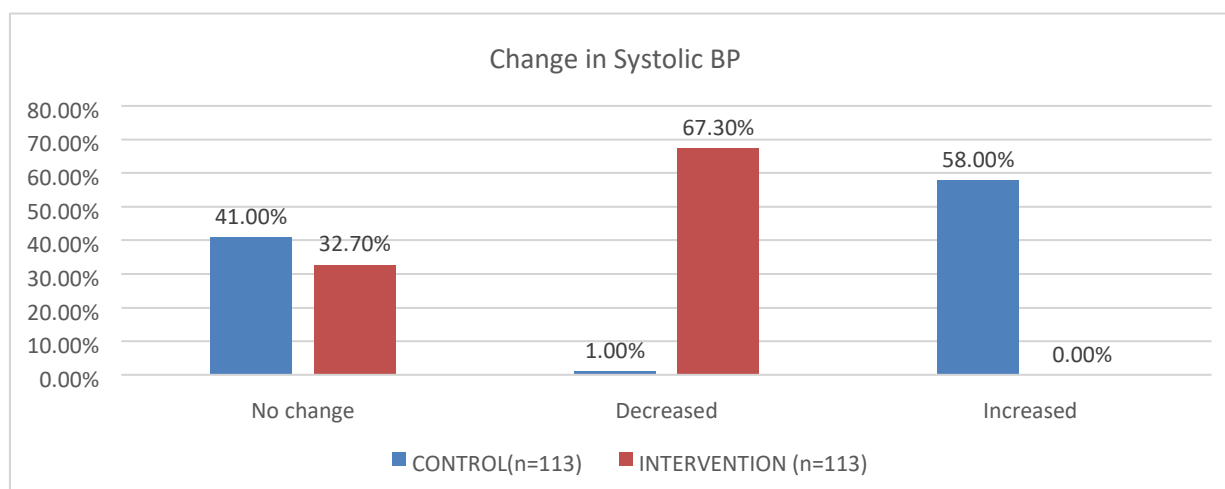


Figure 5.5: Distribution based on pre and post interventional change in systolic blood pressure.

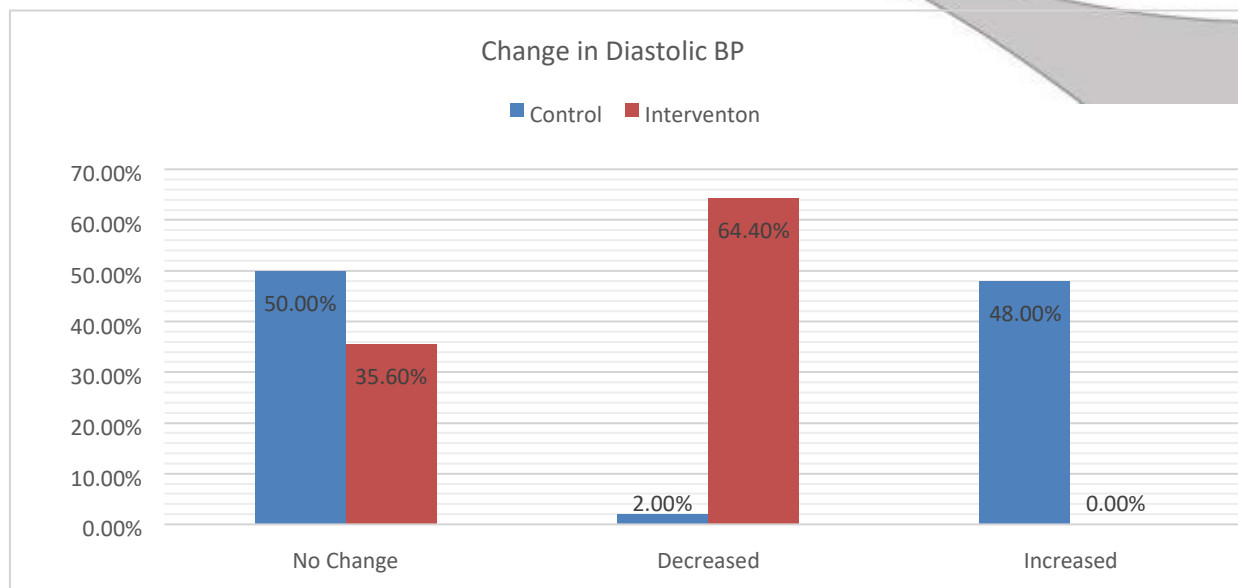


Figure 5.6: Distribution based on pre and post interventional change in diastolic blood pressure.

In case of Systolic and Diastolic pressure there was significant change in blood pressure in patients in the intervention group after pharmaceutical care was given (P value < 0.05). 70(67.3%) patients in Intervention group showed decrease in Systolic pressure and 67(64.4%) patients in Intervention group showed decrease in Diastolic pressure. This result shows that by providing pharmaceutical care to Hypertensive patients, it can lead to maintenance of blood pressure due to increase in knowledge of patients. Similar result was shown in a study by Pei Xi Zhao et.al.(2012).

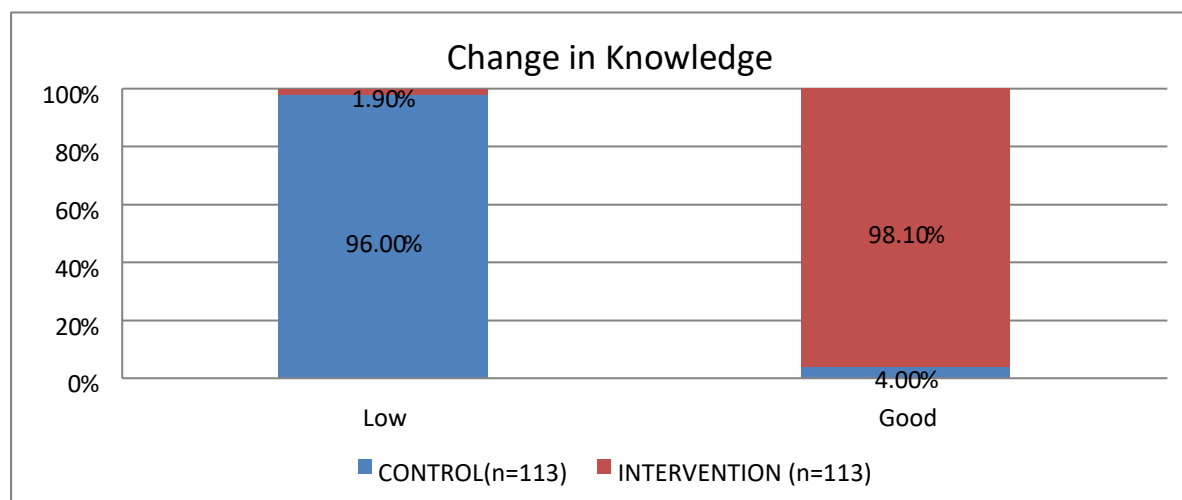


Figure 5.7: Distribution based on pre and post interventional change in knowledge.

The change in knowledge was low in 97(96.0%) patients and was good in 4(4.0%) patients in the Control group. In the Intervention group the change in knowledge was low in only 2(1.9%) patients and good in 104(98.1%) patients. This result shows that providing patient counseling to Hypertensive patients can improve their knowledge about the disease and medications used and also improve the knowledge about the life style changes to be followed for maintaining a healthy blood pressure level. Similar result for patient knowledge was shown in a study by Pei Xi Zhao et.al.(2012).

Physical functioning (PF), Role functioning or physical (RL PH), Role functioning or emotional (RL EP), Energy or Fatigue (E/F), Emotional wellbeing (EMO), Social function (SOCIAL), pain (PAIN) and General health (GH) SF -36 domain scores were increasing in the interventional group and decreasing in the control group after the interventional period of the study. The P values of <0.05 shows that the study results are significant. This is due to the fact that patient knowledge is improved after pharmaceutical care was given to the Hypertensive patients and therefore the quality of life was also subsequently increased after pharmaceutical care was given. Similar result was found in study by Jisha B Krishnan et.al.(2012)

CONCLUSION

The study concludes that hypertension affects the quality of life of patients and the education has a major role in improving the quality of life of a hypertensive patient. This study demonstrates that pharmaceutical care achieved significant reduction in systolic and diastolic blood pressure and improvement in basic knowledge of hypertensive patients and it also improved health related quality of life of hypertensive patients. Based on these findings, this study concludes that pharmacist's interventions can be effective in reducing blood pressure and improving quality of life of hypertensive patients. The study also emphasizes the role of pharmacist as a patient educator to increase awareness of pharmacological and non- pharmacological control of Hypertension.

The educative intervention which consisted of: counseling concerning chronic health conditions (nature, causes, and treatment) and changes in lifestyle, identification of signs and symptoms caused by medication (effectiveness and safety), and encouragement of patients to participate actively in the proposed drug therapy. This all helped in improving the quality of life of the patients. Providing patient counseling also helped the patient in increasing their basic knowledge of the disease. Providing patient education improved the systolic and diastolic blood pressure of the patients as they are given the risks associated with uncontrolled hypertension and they are also given education on the proper administration of medications for hypertension. Pharmaceutical care was found to improve the patient knowledge of the disease and medications and improve the HRQoL of the patients with Hypertension.

This study indicates that the Hypertensive patients are in need of more knowledge about the disease and medications used. The patients were also found in the need of more knowledge on the life style modifications that should be followed by a Hypertensive patient to improve their quality of life. This emphasizes the need of providing health education to Hypertensive patients in the form of classes in primary health centers and delivering health education campaigns through mass media and social media. The patients visiting the hospitals should be provided with patient information leaflets giving details about the disease and life style modifications to be followed.

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CONFLICT OF INTEREST:

The authors declare no conflict of interest.

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