

# Effectiveness of Nurse Led Intervention Regarding Management of Hypertension on Awareness, Treatment Compliance, Life Style and Quality of Life among Hypertensive Adults: A Systematic Review

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## Abstract

**Introduction:** Hypertension is one of the most common conditions affecting the health worldwide and is also the leading cause of death around the globe. There is a persistent need for effective nurse led intervention for interrupting the further spreading roots of the hypertension in the community. There is also a great need for creating awareness, ensuring the compliance with the treatment, modification of lifestyle and improving the quality of life for the sufferers of this condition.

**Methods:** The study design was systematic review and it includes studies from databases of PUBMED, MEDLINE, Cochrane library, SCOPUS, Science direct, and Google scholar (2008-2019). The included studies were focusing on the management of hypertension among hypertensive adults in terms of awareness, treatment compliance, life style and quality of life.

**Result:** The data was grouped and analyzed in terms of meta-analysis. Total 20 relevant articles were undertaken. Abstracted information is related to study design, population characteristics, intervention and outcomes.

**Conclusion:** The nurse led intervention in the management of hypertension is an effective strategy in improving the health outcomes in terms of creating awareness, ensuring the compliance with the treatment, modification of life style and improving the quality of life among hypertensive adults.

**Key words:** Hypertension, awareness, treatment compliance, life style, quality of life.

## Introduction

Hypertension is a worldwide risk factor affecting the health and the cause of cardiovascular diseases. There is strikingly increase in the prevalence of hypertension from 23% to 42% which was age and gender standardized according to 2011 population census of India.<sup>[1]</sup>About

one third of urban adult and near to one fourth rural adults in India are hypertensive who have least awareness and no knowledge about status of their hypertension. There is need to provide multicomponent interventions for managing hypertension among Indians as current rates of awareness, treatment and control of hypertension are very low for those who are on treatment.<sup>[2]</sup>

After the diagnosis of hypertension is made, the main issue in the management is the patients' compliance with the treatment. Even after having adequate knowledge about the condition, poor drug compliance is mainly the result of forgetfulness and interruptions in the daily routines.<sup>[3]</sup>There are many other socio-demographic factors which can significantly influence the rate of

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adherence such as level of education, marital status and duration of disease.<sup>[4]</sup>

Life style modifications can help to improve the quality of life by changing the eating habits, weight control, exercising daily, abstaining from alcohol and smoking cessation and then can play a vital and effective role in management of hypertension. The rate of practicing the life style modifications among the hypertensive patients are on the lower side which indicates greater need for advice and support for controlling their blood pressure.<sup>[5]</sup> Only knowledge and attitude are not enough to manage the hypertension. It was reported that even after giving interventions to improve knowledge and attitude and awareness, participants adherence to the practices was still poor.<sup>[6]</sup>

## Materials and Methods

### Research design: Systematic Review

**Inclusion criteria:** It includes the studies related to development and evaluation of nurse led intervention for management of hypertension in terms of awareness, treatment compliance, life style and quality of life among hypertensive adults.

**Exclusion criteria:** The study excludes the studies those did not discuss about the nurse led intervention for management of hypertension in terms of awareness, treatment compliance, life style and quality of life.

This review article was written after doing a systematic review of several studies, journals and articles on web. Ethical issues have been addressed as there is no direct involvement of human subjects in this study. The referred articles and studies have been properly cited in the reference section.

**Data Analysis:** Relevant articles on the topics of development and evaluation of nurse led intervention for management of hypertension in terms of awareness, treatment compliance, life style and quality of life by search of significant articles PubMed/Medline, Science direct, SCOPUS, CINAHL, Elsevier and Google scholar.

## Results

A systematic review was done and total of 128 studies were selected for review, out of which 20 were found to be appropriate. Data was divided into three

sections:

### Literature related to awareness of hypertension among hypertensive adults:

Out of five reviews, only two (40%) have shown that the hypertensive patients had relatively high awareness related to their disease condition but their uncontrolled hypertension was mainly related to barriers associated with treatment, average knowledge about condition and poor selfcare practices.<sup>[7,10]</sup> Other three cross-sectional studies (60%) concluded that the prevalence of hypertension is high but the awareness about hypertension, knowledge about status of their condition and adherence to treatment plan was poor.<sup>[8,9,11]</sup>

A cross-sectional study was conducted with aim to assess awareness, treatment, and control of hypertension among the rural population of Bengal. The content included predesigned interview and blood pressure monitoring. Random sampling technique was used to select a sample of 651 participants. The findings revealed that about half (48.2%) of the participants were aware of hypertension; 47.1% were taking treatment and only 15 (18.7%) among them had controlled BP which was 8.8%. The study concluded that awareness, treatment, and control rates of hypertension among participants were low.<sup>[9]</sup>

A cross-sectional, descriptive study was conducted in Saudi Arabia with aim to assess awareness and knowledge and its self-care practices among hypertensive patients. Total 211 patients were included in study who were interviewed using semi-structured, pretested questionnaire and blood pressure monitoring was also done. The level of awareness about hypertension was high in majority of cases (72.6%), knowledge level was average (54.7%) and most of the participants (74.4%) had below average level of self-care practices. Although there was an awareness and adequate knowledge on hypertension among hypertensive patients, but the findings indicated an uncontrolled blood pressure (BP) and poor self-care practices among the studied population.<sup>[10]</sup>

A cross-sectional study was conducted to assess the correlation between health literacy and health related quality of life in patients with hypertension. The sample consisted of 400 patients with hypertension. The data

was collected by using a demographic questionnaire, Short Form Health Survey(SF-36), and Health Literacy for Iranian Adults (HELIA) Inventory. The mean and standard deviation scores of health literacy and health-related quality of life were, respectively, 68.66 ( $\pm 13.56$ ) and 52.94 ( $\pm 15.20$ ). There was a significant positive correlation between health literacy and health-related quality of life ( $p < 0.01$ ,  $r = 0.30$ ). Based on the findings, it was concluded that patients' health and quality of life should be promoted by the nursing officials and policymakers by using appropriate interventions to creating awareness and improving knowledge of patients about management of hypertension.<sup>[11]</sup>

#### **Literature related to treatment compliance of hypertension:**

Most of the studies (80%) have revealed that the patients receiving antihypertensive therapy have poor compliance and adherence to management of hypertension. Patients taking treatment for hypertension show compliance at the beginning of the treatment but afterwards the compliance rate decreases due to many contributing factors. Most commonly reported reason for non-adherence to treatment or skipping of the dose is forgetfulness and other factors like discontinuation of medication when feeling well, smokers and alcoholics are likely to be non-compliant, as well as illiteracy and male gender is also one of the factors.<sup>[12,13]</sup>

A cross-sectional study involving 221 hypertensive patients was conducted in the Bamenda Health District to evaluate Knowledge of Hypertension and Compliance with Therapy Among Hypertensive Patients. Validated questionnaires were used to assess knowledge of hypertension using a 15-item scale, while compliance was assessed using the 8-item Morisky Medication Adherence Scale. The results showed, 14.0%, 53.4%, and 32.6% of participants had adequate, average, and poor knowledge of hypertension, respectively. The antihypertensive compliance rate was 43.9% which was low. Again, the reasons for non-compliance were forgetfulness, lack of motivation due to the incurable nature of the disease and lack of symptoms of the disease. The study concluded that knowledge positively affected the compliance, and good compliance was associated with good blood pressure control. There is a need to educate the people about treatment properly and

warn them about potential complications.<sup>[14]</sup>

A study was carried out using a prospective design as quantitative method and in-depth interview was used as qualitative design to assess the adherence to hypertension medication in North of Vietnam among the subjects aged from 35-64 years who were selected randomly. Quantitative part included data on medication use and adherence whereas qualitative data includes understanding the factors affecting the level of adherence. Among 315 patients only 49.8% were adherent to treatment. The medication adherence was higher in females than the males but the difference was not statistically significant. As the age increases patients are more likely to be compliant as the result of information provided to them about the complications.<sup>[15]</sup>

A cross-sectional study was conducted among 488 Chinese hypertensive patients who were admitted in a tertiary hospital in Xi'an, China. Data were collected regarding socio-demographic factors and hypertension-related clinical characteristics to determine the treatment adherence. The adherence to treatment was assessed using the previously validated instrument: therapeutic adherence scale for hypertensive patients. A total of 27.46% of patients were compliant with their antihypertensive treatments. Three factors were identified to be independently associated with antihypertensive treatment adherence: gender ( $P = .034$ ), residence ( $P = .029$ ), duration of high blood pressure ( $P < .001$ ). Treatment adherence among hypertensive patients in China was poor. It was thus concluded that more attention and effective strategies should be designed to address factors affecting treatment adherence. Education about hypertension knowledge should be strengthened for patients. Moreover, the importance of lifestyle modification during hypertension treatment is often neglected by patients, therefore, there is an urgent need to educate hypertensive patients about the adherence to lifestyle modifications.<sup>[16]</sup>

#### **Literature related to life style and quality of life:**

A systemic review was conducted to find effects of lifestyle modifications on the management of hypertension. Medline, Academia, Google Scholar, Embase, PubMed, PMC, Cochrane Library, American College of Physicians (ACP), American Association

of Clinical Endocrinologist (AACE) and International Journal of Hypertension (IJH) were searched for studies on hypertension and lifestyle modifications. Out of 51,063 retrieved studies 19 studies were included. The review helped to reveal that life style modifications help to make significant changes in the blood pressure. These modifications include weight control, dietary modifications (DASH diet), low sodium diet, abstinence from alcohol and exercising daily. These multilevel lifestyle modifications are effective in controlling the blood pressure among hypertensive candidates.<sup>[17]</sup>

A study was conducted in tertiary care hospital, Erode with aim to assess the quality of life in the hypertensive patients and to evaluate the functional capacity, physical aspects, pain, general health, vitality, social aspects, emotional aspects and mental health of the patient. A total of 300 participants were selected for the study period of 6 months. Short form 36 item (SF-36) health survey questionnaire was used to assess the quality of life in hypertensive patients. The study concluded that the mental health (Avg. score 25.8) was the mostly affected component in hypertensive patients followed by emotional aspects and vitality. There is need for proper treatment and awareness about hypertension for the patient's mental and emotional well-being.<sup>[18]</sup>

Dietary modification practices are also one of the factors which helps to manage the blood pressure but in two studies it is found that dietary modifications are low in practice among hypertensive adults. They used to take processed foods, not aware about salt levels in their food, added salt in food on table and do not consider salt as causative factor of hypertension.<sup>[19,20]</sup>

### Discussion

A study conducted by **Karmakar N. et al.(2018)** found that awareness and control rates of hypertension were low. Another study conducted by **Naimi A.J. Et al. (2017)** had shown that there is a significant positive relationship between health-related education and improved quality of life. A study on adherence rate to treatment by **Akoko B.M. Et al. (2017)** had found that compliance rates for antihypertensives are low and the major reasons for non-compliance were forgetfulness, lack of motivation and lack of symptoms of disease. Another study by **Organi et al. (2020)** found that life style modifications helps to manage blood pressure but

their practice rate is low among hypertensive clients.<sup>[9,11,14,17]</sup>

### Conclusion

The nurse led intervention can effectively help to control the spread of hypertension by creating awareness, adherence to treatment, life-style modifications and quality of life among hypertensive patients. Several studies in review have concluded that there is an emergent need to manage hypertension and extensive efforts by health care workers is required. Thus, it is recommended to carry out more extensive research in this area so that improved nursing interventions can help to curb the spread of hypertension.

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