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# A literature review of pharmacist's impact on lifestyle modifications among obese, hypertensive patients

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## Abstract

**Objectives** Previous trials have confirmed a positive relationship between obesity and hypertension. The purpose of this article is to identify the impact of pharmacists in lifestyle adherence among obese, hypertensive patients.

**Methods** A literature search was performed at an academic institution using secondary databases, PubMed/MEDLINE and EBSCOhost. Reviews, observational and experimental reports published in English between 2010 and 2020 were included. Terms searched were *pharmacy*, *pharmacist*, *lifestyle modifications*, *adherence*, *compliance*, *hypertension*, *obesity*, *consultation*, *intervention*. Effect on lifestyle modifications consisted of change in blood pressure values, weight, body mass index, diet/sodium intake and/or exercise.

**Key findings** Six hundred seventy-five articles were reviewed with 10 meeting inclusion criteria. The role of a pharmacist has a positive impact on compliance in lifestyle adherence with obese, hypertensive patients. Additionally, age, gender marital status, education, monthly income, knowledge level and beliefs of hypertension and co-morbidities all can affect adherence to lifestyle modifications.

**Conclusions** The pharmacist has a vital role in the management of hypertension and obesity through frequent interactions with patients to increase adherence to lifestyle modifications.

**Keywords**: lifestyle modifications; pharmacist; intervention; obesity; hypertension

## Introduction

Hypertension is defined as two or more ambulatory blood pressure readings (from separate visits) 130/80 mmHg or higher 1 min apart.[1] Obesity is defined as a body mass index at or above 30 kg/m$^2$.[2] Hypertension is only controlled in approximately 35% of patients. Medication and lifestyle non-adherence has been identified as a major factor.[3] Other factors that may affect adherence are ethnicity, socioeconomic status and educational level.[3]

Previous trials have confirmed a positive relationship between obesity and hypertension.[1, 4] The high prevalence of hypertension among patients with obesity accounts for 78% of incident hypertension in men and 64% in women.[4] Some factors that promote obesity are high salt diet, fat foods and high carbohydrate diet.

Although viewed as medication experts, pharmacists are also qualified to educate and counsel patients on lifestyle strategies including weight loss and promotion of a healthy diet and physical activity. They can perform physical assessments of vital signs

and provide recommendations for pharmacological and non-pharmacological interventions as well.[4] This is important because these conditions present without symptoms, requiring motivational interviewing by a trained practitioner. The purpose of this article is to identify the impact of pharmacists in lifestyle adherence among obese, hypertensive patients.

## Methods

A literature search was performed using secondary databases, PubMed/MEDLINE and EBSCOhost. Terms searched were *pharmacy*, *pharmacist*, *lifestyle modifications*, *adherence AND/OR obesity*, *consultation*, *intervention*. Observational and experimental reports published in English between 2010 and 2020 were eligible for inclusion. Next, full text of each article had to be available with the search terms selected. Investigators reviewed each article to ensure papers reflected lifestyle modifications that consisted of change in blood pressure values, weight, body mass index, diet/sodium intake and/or exercise. Each article was agreed upon for inclusion by all investigators.

## Results

Six hundred seventy-five articles were reviewed with 10 meeting inclusion criteria. A pharmacist's role in patient counselling based either on quality of life or medication adherence has been shown to bring a positive impact through its process.[5] Associations were found between adherence to lifestyle recommendations and age, gender, marital status, work/occupational status, education, monthly income, knowledge level (of hypertension), beliefs (of hypertension) and present co-morbidities for patients with hypertension. Regarding obesity, the most apparent significant factors that influenced adherence were age, gender, work/occupational status, education, lifestyle, knowledge level and beliefs (of hypertension). Patients who had extensive lifestyle and self-management counselling with a high knowledge of hypertension were much more likely to be compliant to lifestyle modifications.[6–13]

## Discussion

The management of hypertensive and/or obese disease states is multifaceted and comprehensive.[1] There is no single remedy, though adherence to medication is especially critical. The pharmacist's role includes stressing the importance of such adherence while promoting modifications in diet and exercise.[14] Adherence for patients with obesity was improved significantly when placed in behavioural treatment programs by pharmacists. This means that the role of a pharmacist on lifestyle counselling is impactful for these patients. Some of the parameters observed include physical activity, attrition rate, dietary intake and self-monitoring compliance.[8, 9] Additionally, the pharmacist has the unique ability to play a critical role as the link between the patient and physician for the disease state to improve patient clinical outcomes.[9]

Hypertensive and/or obese patients need particularly stringent requirements to maintain good health status, including diet modification and routine blood pressure monitoring.[11, 14] Community pharmacies can further contribute to an improved quality of life of patients by providing educational material during consultations.[14] This increases the patient's interest in their treatment regimen; and therefore, lifestyle adherence. Although traditionally allied health professionals (i.e. nutritionist, physical therapists) focus on lifestyle changes, pharmacists play a critical role in motivating the patient to stay consistent with diet and exercise regimens through interactions during medication pickups at a community pharmacy or during medication reconciliation in the inpatient or ambulatory care setting.[1, 14] It is during these quick, frequent interactions that the pharmacist is able to make an impression while also building a relationship with the patient. Pharmacists should also urge the patient to keep up on his/her own health through the implementation of blood pressure logs. These logs are available to the patient at both physician offices and pharmacies. Just as with diet and exercise reminders, pharmacists should promote adherence of routine blood pressure monitoring at each patient visit.[14]

## Conclusions

Pharmacists are one of the most accessible healthcare providers and should be utilized as a crucial connection between patients and their physicians. The pharmacist has a vital role in the management of hypertension and obesity through frequent interactions with patients to increase adherence to lifestyle modifications. They are crucial in the education of disease states, importance of adherence and disease state management through behavioural treatment programs. Hypertension and obesity are two conditions that often go hand-in-hand, and the pharmacist has the ability to make an impact in its management, thus improving patient outcomes.

## Author Contributions

All authors contributed to conception, data collection, data analysis and manuscript writing of this study.

## Funding

None.

## Conflict of Interest

None.

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