

*Original Research Article*

# Knowledge of Primary Health Care Nurses at Selected Public Institutions Regarding Prescription of Antihypertensive Drugs

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## Abstract

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Hypertension has been among the most studied topics of the previous century and has been one of the most significant comorbidities contributing to the development of stroke, myocardial infarction, heart failure, and renal failure. In the mist of that, there is limited data on nurses' knowledge regarding prescription of antihypertensive drugs in Lesotho. The aim of this study was to assess primary health care nurses' knowledge regarding prescription of antihypertensive drugs. Quantitative descriptive cross-sectional study of primary health care nurses recruited by purposive sampling was conducted. An electronic questionnaire was used to collect data and data were analyzed using descriptive statistics. Most participants were females and had attained diploma in general nursing and midwifery. A proportion of 26% fully knew the steps to be followed for diagnosing hypertension and only 23% felt highly confident to initiate patients on antihypertensive drugs. Moreover, knowledge on mechanism of action of antihypertensive drugs was poor and less than half only knew antihypertensive drug of choice when there is comorbidity. The study identified that nurses have knowledge deficit regarding prescription of antihypertensive drugs. There is a need for interventions to improve nurses' knowledge so as to curb hypertension burden.

**Keywords:** Antihypertensive, Knowledge, Nurses, Prescription

## INTRODUCTION

Cardiovascular diseases account for 17.5 million deaths and 9.4 million deaths are related to hypertension (World Health Organization, 2014). World Health Organization (2021) indicated that number of hypertensive adults have doubled from 650 million to 128 million between 1990 and 2021. Hypertension management depends on knowledge of nurses at primary health care facilities and are also expected to demonstrate theoretical, ethical and professional knowing and the ability to interpret and act (Gundo *et al.*, 2021).

Rationale use of medication requires adequate level of knowledge as a base line, however, there is no universally accepted level of knowledge for health

professionals who prescribe (Berhe *et al.*, 2018). Brinkman *et al* (2016) used 80-90% in their study as high threshold. According to Machaalani *et al.* (2022) source of knowledge used by nurses is often experience based rather than research-based sources which can be mostly due to previous knowledge and intuition. Other source for clinical knowledge is internet as it provides quick access to online information (Machaalani *et al*, 2022). Alsaleh *et al.* (2021) in their study showed that 14.4% of nurses with poor knowledge contributed to prescription related medication errors such as prescribing wrong dose and wrong medication. Although there seems to be progress in strategies to reduce blood pressure in

**Table 1.** Demographic Characteristics of Participants

Criteria	Frequency	Percent (%)
<b>1. Gender</b>		
Female	66	78.6
Male	18	21.4
<b>2. Educational qualifications</b>		
Diploma in General Nursing and Midwifery	42	50
Diploma in Nurse Clinician	12	14.3
Bsc General Nursing and Midwifery	26	31
Bachelor of Nursing Science	4	4.8
Nursing M.Sc.	0	0
	0	0
<b>3. Area of work</b>		
CHAL	50	59.5
Government	34	40.5
<b>4. Work experience</b>		
1-4 years	16	19
5-8 years	10	11.9
9-13 years	40	47.6
14 years and above	18	21.4

hypertensive individuals in African countries, suboptimal management of hypertension remains public health concern (Dzudie *et al.*, 2018). Treatment and control rates in these regions are poor due to a considerable gap in knowledge and practices in relation to management of hypertension at primary health care facilities (Lulebo *et al.*, 2015). In Ghana, study by Ogedegbe *et al.* (2014) indicated that health professionals are poorly trained regarding management of non-communicable diseases such as hypertension and these result in lack of necessary knowledge and skills. According to Lesotho Demographic Health Survey (2014) 19 % and 13% of women and men respectively have hypertension. There is high prevalence of hypertension in Lesotho and hypertension remains uncontrolled at primary health care facilities (Thinyane *et al.*, 2015).

The aim of the study was to assess knowledge of PHC nurses regarding prescription of antihypertensive drugs.

## METHODS

A descriptive, cross-sectional quantitative research was conducted to assess nurses' knowledge regarding prescription of antihypertensive drugs. The study was conducted at Christian Health Association and government owned primary health care facilities in Mafeteng district. Prior to proceeding with the study, ethical clearance (ID79-2023) was granted by Lesotho's Ministry of Health. Authors adhered to all ethical principles. A structured electronic questionnaire developed from Lesotho standard treatment guidelines was uploaded as a Google Form and link was shared to participants after obtaining written consent. Data was analyzed using

descriptive statistics with Microsoft excel 2019.

## RESULTS

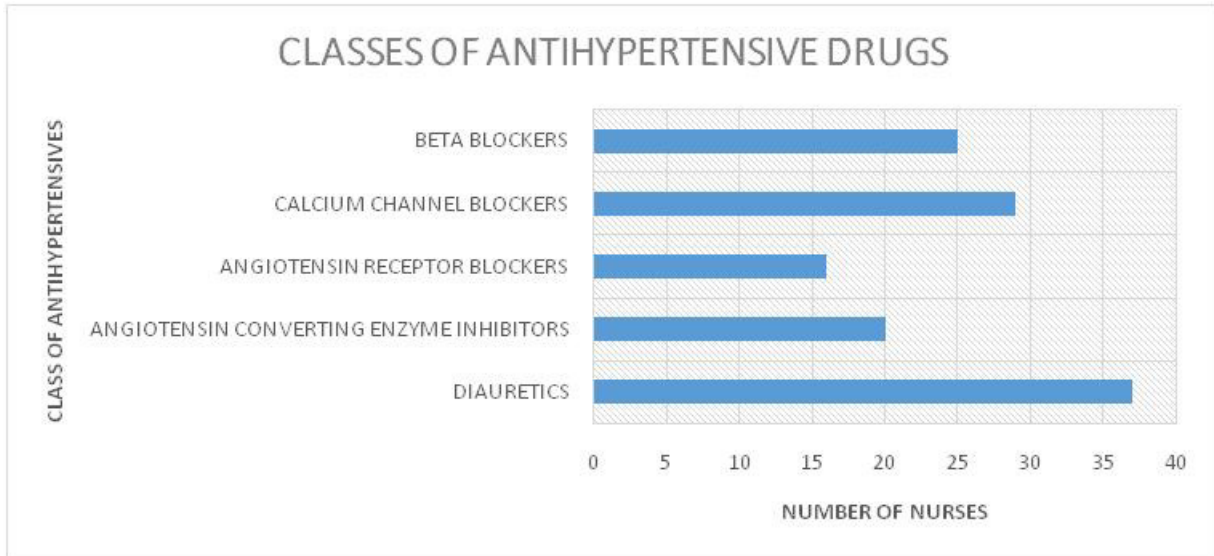
Out of 104 nurses contacted, 84 participated and filled the questionnaire. A proportion of 78.6% were females and most represented age group was 25-35 years old (54.8%). The majority of nurses had diploma in general nursing and working in CHAL owned facilities. 47.6% nurses reported 9-13 years of work experience.

The results showed that nurses had poor level of knowledge regarding prescription of antihypertensive drugs. A proportion of 76.2% of nurses knew the steps to consider for diagnosis of hypertension and only 26% could fully follow recommended steps. Training is important in improving skills and ensuring evidence-based care but only 59% of nurses received training and majority of them received it once.

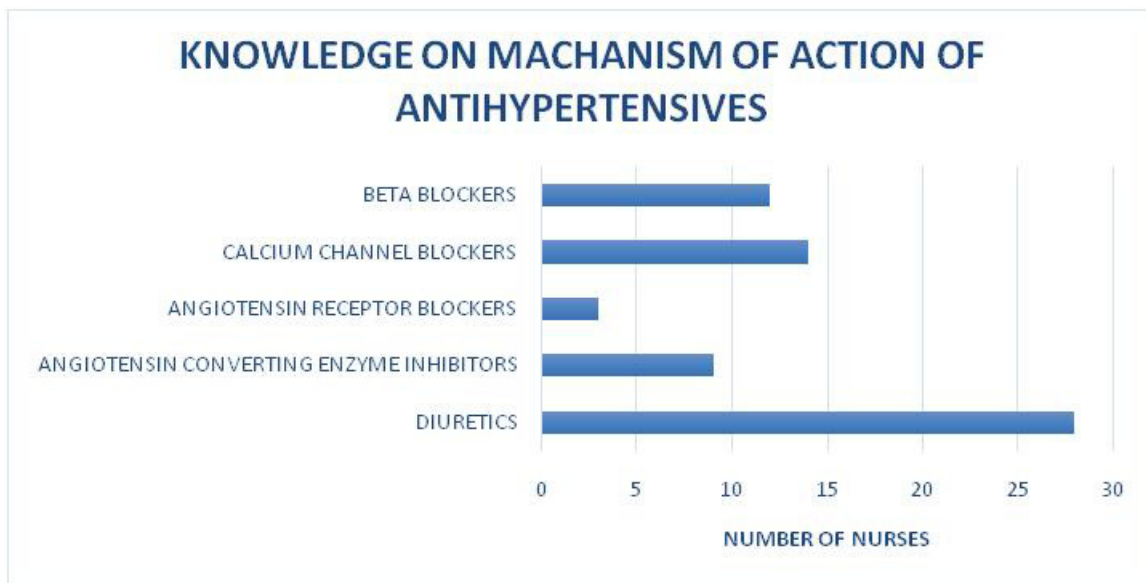
Results showed that nurses knew when to initiate antihypertensive drugs though 23.8% of them felt highly confident to initiate patients on treatment. Of all nurses who participated, 93% knew Lesotho standard treatment guidelines as a tool to guide their prescription and 61.5% use the guideline daily. Figure 1

Amongst classes of antihypertensive drugs, diuretics together with their mechanism of action are known by nurses while angiotensin receptor blockers are least known. More than half of nurses (74%) knew that hydrochlorothiazide is used as first line drug and indicated that treatment should be started at low dose. Figure 2,3

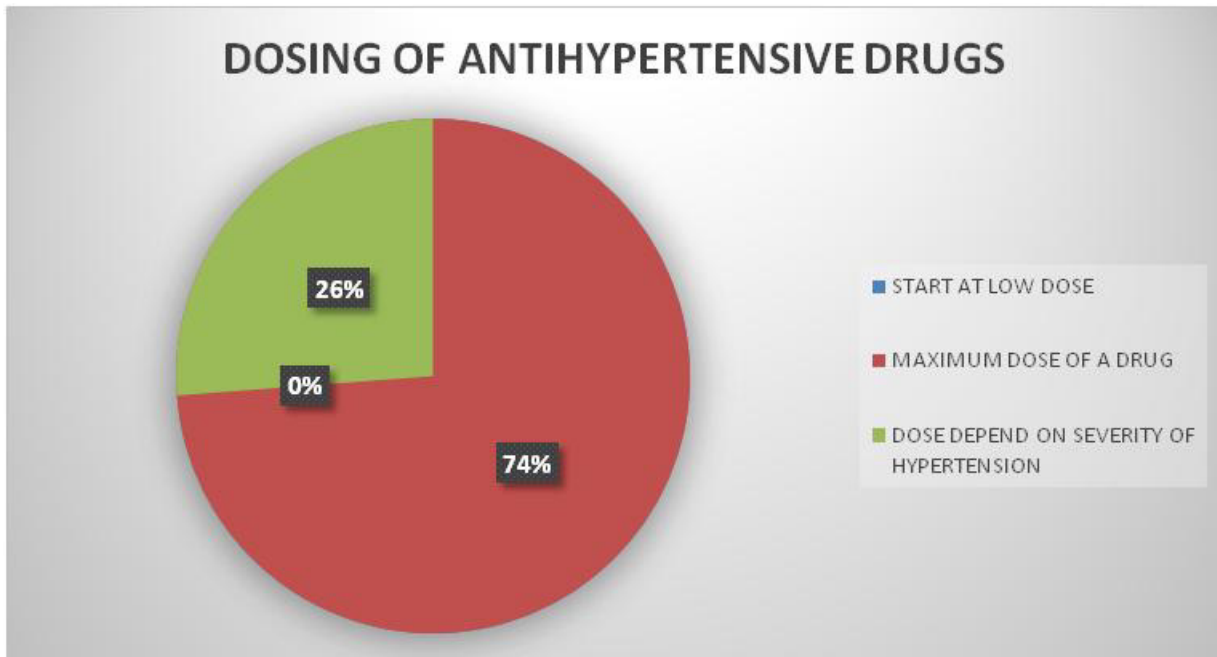
Nevertheless, few nurses (35.7%) knew about prerequisite for initiation of antihypertensive drugs and stated that they are done to confirm blood pressure and



**Figure 1.** Knowledge of different classes of antihypertensives



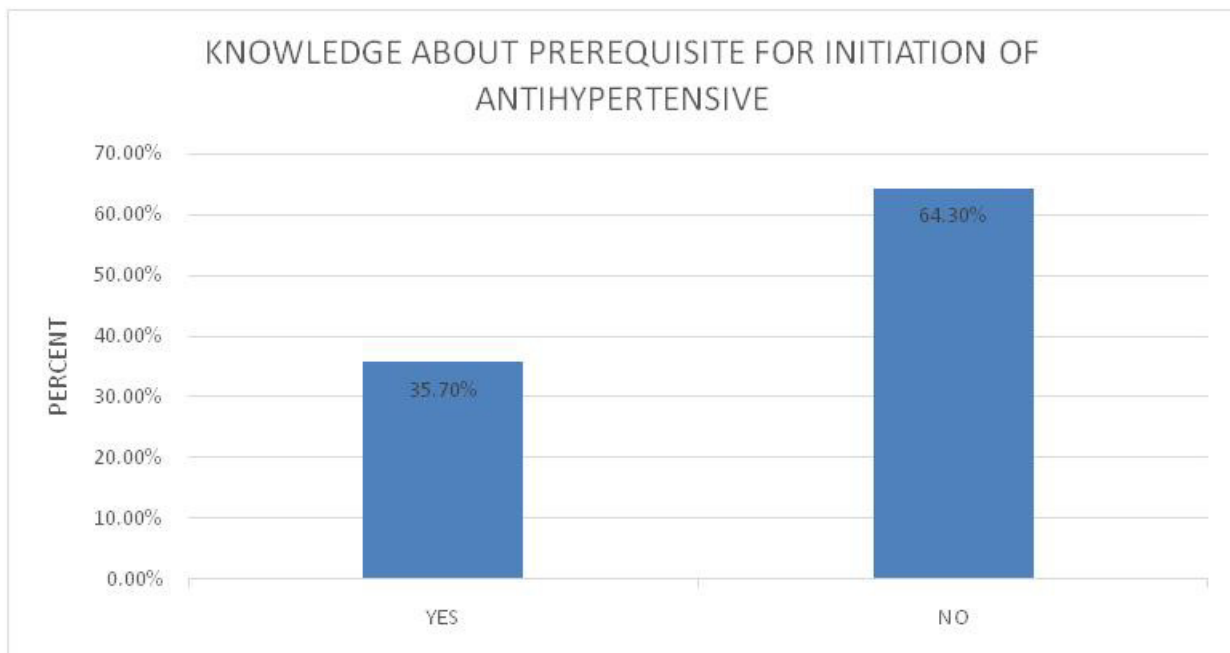
**Figure 2.** Knowledge on the mechanism of action of drugs



**Figure 3.** Dosing antihypertensive drugs

**Table 2.** Recommended first-line antihypertensive drug

Antihypertensive Drug	Number Of Responses	Percentage
Nifedipine	2	4.8
Hydrochlorothiazide	40	95.2
Captopril	0	0
Atenolol	0	0
<b>Total</b>	<b>42</b>	<b>100</b>



**Figure 4.** Knowledge of the prerequisite

rule out chronic diseases such as diabetes mellitus and chronic kidney disease. Only 43% knew which class of antihypertensive to prescribe when there is comorbidity and 43% indicated that diuretics are the recommended first line drugs for patients with diabetes.

## DISCUSSION

Data revealed knowledge gap among primary health care nurses as only 26% of nurses follow recommended steps in diagnosis of hypertension and 64% partially follow the steps. The findings of the current study are not that different as the findings of Myanganbayar *et al.* (2019) which revealed that only half of nurses from their study responded correctly on diagnosis of hypertension. The study further revealed that there were few nurses (23.8%) who felt confident to initiate patients on antihypertensive drugs as compared to those of average confidence (61.9%). To further support the current study findings in this regard, a study by Myanganbayar *et al.* (2019) revealed that confidence in optimally performing routine activities in diagnosing and managing hypertension without training was low for nurses. Regarding classes of antihypertensive drugs, more than half of nurses knew diuretics (n=74) and angiotensin receptor blockers (ARB) came last (n=32). Similarly, Ndosi and Newel (2014) in a study aimed to determine if nurses had adequate pharmacology knowledge of the drugs they commonly administer found that knowledge of the mechanism of action and drug interaction was very poor.

A study by Kumar *et al.* (2022) on guidelines for the management of hypertension in patients with diabetes mellitus reported that ARB and angiotensin converting enzyme inhibitors (ACEi) are recommended as first line therapy demonstrating their superiority over other antihypertensive. In this study, a small proportion of nurses correctly answered as most preferred diuretics 47.6% followed by ACEi 40.5%.

## CONCLUSION

The study indicates that there is a considerable lack of knowledge regarding prescription of antihypertensive drugs amongst nurses working in primary health care facilities in Mafeteng. Patients are being misdiagnosed and mismanaged. The study suggests that there is a general need to improve education and continuous training about antihypertensive drugs.

## LIMITATIONS

This study was limited to Mafeteng primary health care nurses working at CHAL and government owned facilities. Moreover, the online questionnaire posed a

challenge to some nurses as their devices could not open the link.

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