



EXAMINING THE LEVEL OF INTEGRATION OF NUTRITION MANAGEMENT SERVICE FOR HYPERTENSIVE ELDERLY PATIENTS IN MASERU CITY COUNCIL HEALTH FACILITIES

Lineo Florina Motsieloa

Department of Health Information Management, Faculty of Health Sciences, Botho University

E-mail: lineomotsieloa57@ gmail.com

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ABSTRACT: *Integration is an important part of reform used in health care to reduce healthcare costs for both patients and the health system. NMS integration into hypertension services for elderly patients has the potential to help put the blood pressure of patients under control. The study aimed to determine the level of integration of NMS in the hypertension service delivery chain for hypertensive elderly patients receiving outpatient care in Maseru City Council health facilities. This was a descriptive cross-sectional study that used quantitative and qualitative methods of data collection and analysis. The results revealed the low integration of NMS for hypertensive elderly patients in these two facilities. The inputs for the service were available but inadequate, and some were unavailable, and this hurt NMS processes provision. Out of 74 patients who participated, none of them had their weights and heights measured, and only 9.5% were asked about lifestyle and diet compliance. NMS integration was low in both facilities for several reasons.*

KEYWORDS: Integration, Nutrition Management Service, Hypertension, Elderly people.



INTRODUCTION

Integration has been a topic of interest for many researchers, showing its benefits and importance in the health sector. In healthcare, the integration of health services is regarded as an important part of reforms (Oelke et al., 2015). Jamison et al. (2006) recognize service integration as a combination of services that prevent diseases and those that cure diseases put together and delivered to patients. According to Reed et al. (2021), integrated services are provided by multi-professional teams in a facility setting. This says patients have an opportunity to receive all services they need for their health in one clinic visit, and at the same health facility, without having to move from one facility to another. This approach to health service provision has been proven to yield many benefits to both patients and the health system. To the health system, there are many rewards like saving on expenditure among others (Heyeres et al., 2016), and at the same time, patients benefit from integration by receiving services that respond to their health needs (Heyeres et al., 2016), and thus improving their satisfaction (Evans et al., 2013). Furthermore, it is emphasised that the integration of services results in good quality services worthy of the money spent (He & Tang, 2021). Also, Jacobs et al. (2016) add that health systems must be able to provide basic care services that respond to the needs of patients and pass them on to higher-level care when the need arises. Health systems that are integrated can give patients fully packaged care for their health needs, where all these basic care services are delivered at one point by the same health professionals (WHO, 2008). All these basic health services must be delivered by primary health care (PHC), which serves as a gatekeeper for patients who need further management of their conditions at other levels of the health system (Rodrigues et al., 2015). This is the level where the patients make their first meeting with the health system and helps respond to all their needs (Rodrigues et al., 2015). In this way, PHC is a central supporting part of the health system, controlling every entry into other levels above the primary level (Rodrigues et al., 2015). Due to its benefits, integration at this level has been adopted by many countries; however, some are still facing challenges in fully achieving it.

Different countries have reached different levels in integrating their health services to patients. In wealthy countries, many problems in service provision have been worked out, and what is remaining is incorporating different ministries and sectors to take part in a fight against chronic non-communicable diseases (NCDs) (World Health Organization, 2015). Meanwhile, middle-income countries are still trying to employ new ways of responding to health problems they face, such as the use of new legislation among others (Heyeres et al., 2016). In contrast, looking at poor countries, Heyeres et al. (2016) mention that much work is being done on ensuring health services access with the use of primary healthcare (PHC). These countries still experience many problems in chronic disease management as patients self-refer themselves to higher level care in preference for quality care (WHO, 2015). The PHC in these countries has not yet reached success in managing these diseases (Jacobs et al., 2016). However, many other problems are challenging many health systems, and one of them according to Zonneveld, Raab and Minkman (2020) is the increasing number of elderly persons, those aged 60 and above (WHO, 2009).

The increase in the number of elderly people increases the prevalence of chronic NCDs (Oelke et al., 2015). These diseases mostly need several kinds of care that are designed to meet the needs of individual elderly patients (Zonneveld et al., 2020). One of the many NCDs that affects elderly people is hypertension (Oliveros et al., 2020). Many studies have shown how much hypertension affects people, and the importance to keep it under control (Motsieloa & Fosa,



2023; Olaitan, Fadupin & Adebisi, 2018; Himmelfarb & Commodore-Mensah, 2016). This disease is identified as a public health concern in the whole world (Zhang & Cai, 2022), and results in heart problems, stroke, kidney diseases as well as vision problems if not controlled (Siregar, 2022). In the African continent, an increase of 41% in prevalence was seen from 2000 to 2010, and this is still expected to increase in the years to come (Lebuso & Wet-Billings, 2022). Also, the sub-Saharan Africa is facing the same challenge of hypertension (Lebuso & Wet-Billings, 2022). Similarly, Lesotho is not left behind (Motsieloa & Fosa, 2023). Currently, on the World Health Rankings (2023) using WHO data made public in 2020, of all the deaths Lesotho saw, 2.97% were due to hypertension only, putting Lesotho at rank number 1. What remains a mystery is how Lesotho is responding to the situation, and whether it has put measures that work to manage and prevent this disease in its health system.

Nutrition Management Service (NMS) is one of the services believed to have a positive effect on the management and control of hypertension (Motsieloa & Fosa, 2023). NMS is defined as a service that helps prevent malnutrition by screening, counselling, and performing follow-ups on patients (Motsieloa & Fosa, 2023). According to Igbal et al. (2021), hypertension is a disease caused by the lifestyles of patients, and therefore it can be prevented and managed by changing their lifestyles. For this reason, NMS becomes the most suitable solution for this disease. According to Motsieloa and Fosa (2023), this service makes nutrition screening, nutrition counselling, and nutrition follow-up accessible to patients, and with it, patients can reduce weight, know the kinds of foods they must eat and avoid when they have hypertension. Therefore integration of this service in a package of care for hypertensive elderly outpatients is very important. Motsieloa and Fosa (2023) emphasised that in the hypertension treatment package (HTP) that the patients usually receive, NMS must be incorporated at all times to manage this disease. It is important that this service is fully integrated into the patient's package of care.

LITERATURE/THEORETICAL UNDERPINNING

For this study, the level of integration of NMS was dependent on two factors - the available inputs and the processes carried out in the facilities. This study was guided by Donabedian (1988)'s model of quality of care modified with a conceptual framework of integration of health services by the Program for Appropriate Technology in Health (PATH) (2011). With Donabedian (1988)'s model, the processes are dependent on available inputs, and with PATH (2011), the focus of the study was mainly on the patient-centredness nature of this NMS. Understandably, the availability of the inputs means the processes have a high chance of being carried out. Processes of NMS include: measuring the weight and height of patients, calculating their BMI and then recording their nutritional status; educating patients on healthy lifestyles; checking their changes in body weight and BMI, and then asking them about their lifestyles including dietary habits.

Processes

According to Weber et al. (2014), on their first-time visit to the facilities, patients must be thoroughly examined. Health workers have to measure their BP, weight, and height (Weber et al., 2014). While measuring patients' height and weight, health workers have to be careful how they measure them to avoid getting underestimated or overestimated measurements. It is shown



in many studies that these measurements are done with the patient in an upright position with no shoes and wearing light clothes (Yang & Colditz, 2015; Gudina et al., 2013; Zhao et al., 2013). After these processes, with the measurements obtained, the health workers determine patients' BMI (Weber et al., 2014). This was done in the study of Zhao et al. (2013) and Yang and Colditz (2015). At each stage of these processes, another process has to be carried out. This process is the recording of this information. Weber et al. (2014) have emphasized that this patient health information has to be recorded for later use. Undergoing all these processes helps the health worker to know the patient's baseline nutritional status so that they can be able to set goals for weight reduction, because this may affect the kind of treatment the patient may get (Weber et al., 2014). However, for the general health of elderly hypertensive patients and the management of their BPs, these processes must be carried out every time a patient has presented for care.

A hypertension prevalent study found that unhealthy body weight has a positive correlation with increased BP (Gudina et al., 2013). Similarly, in their study, Zhao et al. (2013) identified that BMI above the normal range was associated with hypertension and that the number of people with BMIs above the normal range was increasing and at the same time BMI values were increasing too. As a result, Weber et al. (2014) maintain an opinion that patients with BMI above normal need to reduce weight to aid hypertension treatment and diabetes prevention. This calls for health workers to try and find out what could be the cause of this increase. And so, Weber et al. (2014) propose that patients should be asked about unhealthy behavioural activities such as smoking so that health workers may facilitate its cessation. It is proposed that patients be educated about healthy lifestyles, increasing their intake of foods with potassium and exercising regularly, and at the same time limiting alcohol intake (Weber et al., 2014). However, these processes are highly dependent on the availability of inputs.

Inputs/Structure

For these processes to be carried out in the facilities, many inputs come into play, and without them, the processes cannot run, and they bring along several benefits. According to Van Bulck et al. (2020), for service integration to take place, the needed inputs include healthcare personnel and health infrastructure. At the same time, the processes also need the availability of finance to facilitate the availability of trained staff and NMS equipment, which are both important inputs for NMS. Financing is one of the pre-requisite inputs in the successful integration of health services, and this is evidenced by the results of Suter et al. (2009). If finance is available, then all other important inputs can be available, such as health workers. In their study, Van Bulck et al. (2020) found that the availability of health workers in a health facility resulted in improved patients' well-being and quality of life. This says patients become satisfied, which is a sign of patient-centred services. In the same vein, the results of Dick-Sagoe, Asare-Nuamah and Dick-Sagoe (2021) revealed that equipment for service provision is very important in a health facility. In this study, patients complained that the facilities did not have the equipment, and therefore they were not satisfied. This is evidence that shows the importance of equipment in the integration of health services including NMS. Furthermore, for full integration of NMS, availability and frequency of training, as well as supervision for staff, serve as basic inputs that promote conducting of NMS processes. The carrying out of these processes again depends on the availability of another input, NMS guideline, and its accessibility to health workers. Under normal circumstances, it is expected that availability of all these inputs will translate into all NMS processes to give the patients fully integrated care. However, in Lesotho, there is limited literature that provides a picture of the integration of



NMS and the availability of its inputs. Nonetheless, studies have evidence that suggests that integration of health services reduces healthcare spending (Zonneveld, Raab & Minkman, 2020), NMS contributes to controlled blood pressure (Motsieloa & Fosa, 2023), therefore all health facilities need integration of NMS because it guarantees efficiency.

METHODOLOGY

This study is part of a bigger study and a continuation of a study that investigated the availability of NMS in these facilities.

Study Area

Facilities that were used in this study are owned by a sub-government of Lesotho, Maseru City Council (MCC), which has only two health centres in the country, and independently finances them. These health facilities are namely Thamae Health Centre and Khubetsoana Health Centre, located in the most urban areas of Maseru and Berea Districts respectively. Consultations in these facilities are all provided by nurses who also provide services for hypertensive patients that visit the centres for their regular hypertension reviews. To keep these facilities running and providing health services, MCC staff emphasized that MCC mobilizes its funds through capital projects, rates, and market fees. With all these sources of finance, the two facilities are constantly providing out-of-pocket funded services to people.

The discussions with MCC staff revealed that in 1989, Maseru City Council (MCC) was founded and announced a local authority, through the Urban Act 1983, that runs the cities. This Urban Act was then replaced by Local Government Act 1997, as a way to decentralize services to answer the community needs of people. Maseru is the biggest city in Lesotho, of course, the health needs of people in this district are different from those in other districts, since the kind of life they live and the food they eat are different (Motsieloa & Fosa, 2023), as a result, MCC was founded to answer these needs. MCC developed these PHC facilities to respond to the needs of people in these highly urban areas so that they can help prevent and manage diseases. Because these facilities provide hypertension outpatient care, it was important to find out the extent of integration of NMS because it is important in the management of the disease.

Study Type

This was a descriptive cross-sectional study which used quantitative and qualitative data collection and analysis methods. The two OPD departments where the elderly received their hypertension care were examined to determine the level of integration of NMS. With these OPD service points it was easier to examine the services provision process and its relationship to the received services. For patients to receive hypertension care in these two facilities, an appointment was set for a patient once a month, and they would come on a set day. Both hypertensive elderly patients who were service utilisers and the health workers (nurses and the nurse-in-charges, the managers of the facilities) who delivered health services served as respondents for the study.

Quantitative data collection from patients took a full month. On each day, every patient's medical follow-up book was checked for records of nutritional measurements. This data collection also included patients' track as they received services to observe the amount of time



they took at each phase of the service provision process to record the services each patient received and to find out whether all patients underwent all NMS processes; then as a final step, the administration of exit interview questionnaires was done to determine the services the hypertensive elderly normally received on their hypertension appointment days, which included the services they received on the data collection day. These contributed to the determination of the level of integration of NMS in the facilities. After this quantitative data collection from the patients, qualitative data collection from the health workers began. This qualitative data helped determine the available inputs for integration of NMS, as well as the processes the facilities were able to provide to hypertensive elderly patients. When this data collection from the health workers was done, qualitative data collection was carried out for the patients to help add more value to quantitative data which was found from an inadequate sample. This data also helped determine patients' opinions about NMS in the health centres. The last part of data collection was done on the OPDs themselves to see the equipment available and functional, as well as the total number of nurses providing all hypertension services to the patients.

Sample Size Estimation

Health workers: The plan was to interview all nurses providing hypertension services to patients together with the 2 nurse-in-charges of the 2 health centres. However, one of the nurses was not available on the set dates for interviews; therefore she was excluded from the interviews. In both facilities, 3 nurses and their in-charge provided services to hypertensive patients including the elderly, making a total of 4 in each facility. As a result, there were 4 health workers from Facility A and 3 health workers from Facility B. Therefore, the sample size for health workers was 7.

Patients:

These required a larger sample; therefore Cochran's (1963) equation was used to determine the minimum sample size for the study.

$$n = z^2 * \frac{p(1-p)}{d^2}$$

Where:

n = minimum sample needed

z = standard normal deviation at required confidence level -1.96 at 95% confidence level

p = the target population proportion

d = the desired precision of the margin of error at 0.07 (7%)

q = 1 - p

Set values

50% - set as a proportion of the target population

95% - Confidence interval

7% - desired precision



These values gave 196 patients as the sample needed for the study. However, as data collection progressed, it was seen that the number was impossible to reach, therefore the health facilities registers helped to find out the number of hypertensive elderly who regularly received care in these health centres to approximate the number to expect to work with. Therefore, with the use of registers, the new sample size was determined.

The sample size was estimated by counting the number of elderly patients who presented for care in the three months before data collection (January, February, and March). Their total was then divided by 3 to estimate the number of patients who receive hypertensive care in each centre. This is shown below:

$$\text{Sample} = \frac{\text{January patients} + \text{February patients} + \text{March patients}}{3}$$

- Facility A = $\frac{74+49+26}{3} \approx 50$ patients
- Facility B = $\frac{68+64+66}{3} = 66$ patients

The estimation revealed that 116 patients were expected for the study. However, the number was not reached because of patients' absenteeism and low response rate. Only 77 presented for care and participated, but 3 failed to finish the interview and left before completion. For this reason, these 3 were omitted from the analysis and brought the total number of participants to 74. Even though it was stated that the required sample could not be obtained, it was realised that a study for integration of services must focus on service delivery and clients used to examine if integration takes place.

To help understand what took place in the facilities during service utilization, more methods of data collection were used. These were in-depth and group interviews as well as focus group discussions (FGD) with the patients. In Facility A, 1 FGD, 2 group interviews, and 7 in-depth interviews were done. In Facility B, 3 FGDs, 2 group interviews, and 4 in-depth interviews were done. In total, there were 4 FGDs, 4 group interviews, and 11 in-depth interviews with patients.

Sampling Technique

All nurses who provided hypertension services in the facilities and all hypertensive elderly who received care during the days when data collection was done were interviewed.

Study Variables

The level of integration of NMS was the dependent variable while OPD services were the independent variables. These variables and their data collection methods are presented in Table 1 below, including their tools.

**Table 1. Study variables, indicators, data collection methods, and tools**

Variable	Indicator	Method of Data Collection	Data collection tools
<i>Objective: To examine the extent to which nutrition management service is integrated into the hypertensive service delivery chain</i>			
The extent to which nutrition management is integrated into hypertensive service delivery	<p>Structure:</p> <ul style="list-style-type: none"> -Number of Human resources trained in nutrition management -Finances allocated to nutrition management (adequate or not adequate) -Availability of equipment for nutrition management -Availability of Support supervision -Availability of in-service training -Availability of nutrition management service guideline <p>Processes:</p> <p>Availability of the process of:</p> <ul style="list-style-type: none"> -Measuring the height and weight of all patients - Calculating BMI for all patients - Counseling for all patients - Recording of nutritional status of all patients - Checking patients' dietary habits for all patients 	<ul style="list-style-type: none"> . Interview with the nurses and the nurse in charge, . Observations . Interviews with the patients 	<ul style="list-style-type: none"> .Interview Guide, Observation checklist, questionnaires for patients, client flow track, the patient follow-up book

Data Analysis and Presentation Methods

Statistical Package of Social Sciences (SPSS) software was used for the analysis of quantitative data and then presented in tables. For qualitative data, constant comparison analysis was used to analyse the data, after transcription and translation. During this analysis, meaningful extracts were pulled out, and the significant codes were created and then assembled to come up with meaningful themes which were then grouped in relation to the study objective. As analysis progressed the responses found divergent were noted. Then conclusions were made.

Quality Control

Five research assistants who knew Sesotho and English were brought on board to help with data collection. They were trained in data collection and study tools usage. After the training, both the researcher and the assistants conducted a pre-test study for the tools for validity, so that the data collectors may familiarise themselves with the tools prior collection of data for the study.



To ensure the right answers were obtained from participants, probing was done whenever the need arose. Furthermore, quality was also maintained by ensuring that qualitative data was collected by the lead researcher, the owner of the study, and recorders as well as the two-note takers at her side to capture all data throughout all the interviews and FGDs. The patients consented. On each day after data collection the processes of translating and transcribing interview records word for word were done, to help minimize information loss. In addition, questionnaires on the other hand were regularly checked for missing patient information for the patient to be traced on time if their information was omitted. Finally, for the trustworthiness of the findings, triangulation was done.

Ethical Consideration

To conduct the study, the research proposal went through many ethical clearance entities. These were the Uganda Martyrs University Ethical Committee and then the Lesotho Ministry of Health Research Review Board which approved with a letter of id95-2018 reference number. After this approval, MCC and nurses-in-charge allowed the study to be carried out in the facilities. Then the data were collected.

As a sign of agreement to participate after an explanation of what the study was all about, respondents signed the consent forms, and data collection resumed. For easy identification, the data were coded and connected with the participant in a manner that only the data collectors would identify them to allow for re-tracing if the need arose.

Limitations of the study

The facilities' registers helped determine the sample for the study. Errors that may have been in these registers may have given a higher or lower sample size. These could not be solved by the study. The study could not obtain responses from all nurses and all elderly clients of hypertension clinics in these two facilities due to reasons beyond the researcher's control. Therefore the participant number became small, and this may have affected data quality.

RESULTS/FINDINGS

Client flow information to describe how services were received

With the information obtained from the managers of the two health centres, it was found that in these two facilities, the hypertension clinic was usually done in the morning hours where hypertensive patients were the first ones to receive out-of-pocket funded care. However, in Facility A hypertension services were offered on a supermarket approach where patients would visit the centre at any time of the day on their set days, but some still came in the morning hours, mostly those who had both hypertension and diabetes. There were three consultation rooms in each facility and each had one nurse to provide hypertension services to patients. Like other services, hypertension services were financed by the owner of the facilities, MCC, whereby the managers would make orders of what was needed in the facilities to run the services. Services offered during that time were general examination, BP measuring, and collection of hypertension drugs from the pharmacy. Discussions with the managers and the observations carried out revealed that education of patients on nutrition was seldom done in the facilities.



The OPD services for hypertensive elderly patients in both facilities were almost similar. Patients were tested for Human Immunodeficiency Virus (HIV) and blood pressure (BP), and those in Facility B were also screened for tuberculosis (TB), while in Facility A patients were not screened for TB. When all these were done, they were given general examinations in the consultation rooms where they told the health worker their health problems, who then prescribed medications and gave them nutrition counseling and follow-up on nutrition then sent them to the pharmacy to get medication. After receiving medications, patients left the facilities.

On their arrival, patients in Facility B went for TB screening and blood pressure measuring in the screening room, and then HIV testing in the counseling room. After this stage, they waited in the waiting room for consultation, while in Facility A, patients went for HIV testing and counseling and then waited in the waiting room for a consultation to receive all hypertension services including BP measuring. In both facilities, in the consultation patients were given general examination and injections where it was required, and a few of them received education on nutrition and were asked whether they complied with nutrition recommendations while some patients did not receive such a service.

Level of integration of NMS into hypertensive service delivery chain for hypertensive elderly patients in Facility A and Facility B

For this study, integrated hypertension care was assessed using Jamison et al. (2006)'s definition which shows integration as a combination of services that prevent as well as cure illnesses. With consideration of available inputs and processes carried out for patients, the level of integration of preventative NMS into curative services was determined.

To assess this objective, the structure to support NMS integration in the facility, and the processes carried out for the patients were examined. This objective was to find the kind of inputs available in the facility and how these inputs translated into the processes carried out. The in-depth interviews with the nurses and the nurse-in-charges were conducted to determine the availability of health workers trained on NMS and other inputs needed for the service. Observations, on the other hand, were carried out to find out if NMS processes were carried out for all patients, and to determine the number of health workers providing services to patients and the number of different equipment available in the facilities for the service. From the interviews and the observations, it was found that some inputs for NMS were available in both facilities and some were unavailable. The results are presented below.

Results from health workers helped generate the following themes: *finance availability*, *supervision availability*, *training availability*, and *guideline availability*, which were categorized into structure.

STRUCTURE

For integration to be successful, inputs are supported by the availability of finance. Meetings with the facilities' managers revealed that there was no finance. One of the managers even had to say:



[...] *There is no finance for NMS, this service is not budgeted for...* (**Facility B Manager**)

Furthermore, most health workers received their training on nutrition from school, and when they got recruited into the health care setting they were not given in-service training or supervision to provide NMS to hypertensive elderly patients. The NMS pieces of training they received mostly were for service provision for other types of patients and not hypertensive patients. These were some of their views

[...] *All the nurses whom I arrived together with at this facility have never been trained in nutrition management and its provision. I don't know about those who came before us* (**Facility A, Respo. 2**)

Again, the results also revealed that NMS guideline to guide processes of NMS provision was not available in both facilities, but the discussions with the nurses and the nurse-in-charges revealed they had NMS guidelines, but for other diseases. Furthermore, as part of the structure availability of equipment and human resource were investigated, and their quantitative results are presented below.

NMS equipment for the provision of services to hypertensive elderly

Results revealed the availability of NMS equipment in both facilities. In both facilities, there was just 1 bathroom scale in the OPD, but Facility A had just 1 stadiometer for the whole facility and none specifically for OPD, while Facility B had a stadiometer for OPD. Again, Facility A had 4 BMI checkers – 1 in each of the other consultation rooms and 2 in the manager's consulting room, while Facility B had only 2 BMI checkers in the OPD – 1 in the men's consultation room and 1 in one of the female's consultation rooms manned by the manager of the facility. Additionally, nutrition education materials were unavailable in both facilities. The results are summarized in Table 2a below.

Table 2a: Equipment available for NMS in the facilities

Type of equipment	Number available and functional		Number recommended (WHO)
	A	B	
Weight scales	1	1	1
Stadiometers	1	1	1
BMI meters	4	2	-
IEC material	0	0	No. depends on the number of health workers

Health workers providing hypertension services and NMS in the facilities

Facility A had only 3 health workers to provide both hypertension (HTN) services and NMS in OPD, but due to workload one nurse who was working in pharmacy had to be included in the interviews because she had left the pharmacy at the time of data collection and was consulting. In Facility B, 4 health workers worked in OPD and provided both HTN services and NMS, and the other health worker's role was to only test patients' BP and screened them for TB (was not eligible for the study), thus making a total of 5 health workers serving HTN



services. However, only 3 health workers were included in the study. This is summarized in Table 2b below.

Table 2b: Number of health workers providing hypertension services and NMS in the facilities

	Health Workers Interviewed		Health Workers in OPD	
	Facility A	Facility B	Facility A	Facility B
No. of HW providing HTN services	4	3	3	5
No. of HW providing NMS	4	3	3	4

NMS PROCESSES

To know the processes carried out for patients in the facilities, they were followed carefully, asked questions, and records reviews were done. Table 3 below summarizes the results.

Table 3: Processes carried out for hypertensive elderly patients in facilities

Processes		Health Centre		
		A (%)	B (%)	TOTAL (%)
Patient History Check	YES	46(100)	28(100)	74 (100)
Treatment package processes only [General examination, blood pressure measurement, blood glucose measurement, hypertension medicine dispensation]	YES	40 (86.9)	19 (67.9)	59 (79.7)
	NO	6 (13)	8 (28.6)	14 (18.9)
Measuring patients' weights	NO	46(100)	28(100)	74 (100)
Measuring patients' heights	NO	46(100)	28(100)	74 (100)
Checking patients' changes in body weight and BMI	NO	46(100)	28(100)	74 (100)
Recording of patients' nutritional status	NO	46(100)	28(100)	74 (100)
Patients asked about lifestyle and diet compliance	NO	42(91)	25(89)	67 (90.5)
	YES	4(9)	3(11)	7 (9.5)
Patients given nutrition education	NO	42(91)	20(71)	62 (83.8)
	YES	4(9)	8(29)	12 (16.2)

Table 3 shows that all patients' history was checked, only 9% and 11% were asked about their lifestyle and diet compliance in Facility A and B respectively, 9% and 29% were given nutrition education in Facility A and B respectively, and none of the patients had their bodyweight or



heights measured, and there was no nutritional status recording done for any patient. 86.9% and 67.9% underwent treatment package processes only, in Facility A and B respectively.

RESULTS FROM PATIENT TRACKS

Table 4a: Patient time spent in consultation and services received

FACILITY	Consultation							
	A				B			
Time spent	<15 mins	15 mins	>15 mins	TOTAL	<15 Mins	15 mins	>15 mins	TOTAL
TP processes only	25 (54.3)	0	15 (32.6)	40(87)	17 (60.7)	0	3 (10.7)	20(71.4)
TP processes, patient education on nutrition	2 (4.3)	0	0	2(4.3)	3 (10.7)	1 (3.6)	1 (3.6)	5(17.9)
TP processes, patient education on nutrition, patients asked about lifestyle and diet compliance	2 (4.3)	0	0	2(4.3)	3 (10.7)	0	0	3(10.7)
TP processes, Patients asked about lifestyle and diet compliance	2 (4.3)	0	0	2(4.3)	0	0	0	0
TOTAL	31 (67.4)	0	15 (32.6)	46(100)	23 (82.1)	1 (3.6)	4 (14.3)	28

Table 4a above shows that in these two facilities, patients spent less than 15 mins in consultation and only underwent the treatment package processes (54.3% Facility A and 60.7% Facility B).

Table 4b below shows time spent in the facilities waiting to receive services, that is time waiting for consultation, and to receive medication.

Table 4b Time spent waiting for care in both facilities

Time waiting for care		
FACILITY	A (%)	B (%)
120+mins	14(30)	1(3)
≤120mins	5 (11)	2(7)
≤90mins	5(11)	7(25)
≤60mins	10(22)	6(21)
≤30mins	12(26)	12(43)
Total	46(100)	28(100)



Table 4b shows that in Facility A many patients spent the highest amount of time waiting for services (30%), while in Facility B the highest number of patients (43%) spent 30 minutes or less in the facility to receive care.

DISCUSSION

The results showed that NMS processes were not carried out on all patients. Out of 74 patients, only 12 patients were educated on nutrition, 7 were asked about lifestyle and diet compliance while measuring weight and height as well as the recording of nutritional status, were not carried out for any patient. These patients were too few, not even close to half the number of the participants. While the 2005 Lesotho hypertension guidelines have shown that it is a standard to educate patients who had visited the centres for hypertension care, these facilities educated some and did not educate some. This means patients continued to receive substandard care since even on their previous visits according to the results of Motsieloa and Fosa (2023), these processes were carried out on very few patients. This was because the health workers carried them out mostly when patients had high blood pressure (BP), and hardly carried them when their BP was low. This is not how services should be in the facilities, because these particular patients are old and their demographics revealed that most of them are not literate and so lack enough knowledge on the management of hypertension, and because they are old they are even forgetful, therefore their nutrition education should be done regularly when they have come for their regular hypertension clinic. Not measuring patients' weight and height meant patients did not get nutrition screening which according to Frew et al. (2010) was a sign of poor quality health services.

In all age groups, this particular age group has been proven by many studies that it is susceptible to increased BP due to aging (Lloyd-Sherlock, 2014), therefore services that respond to the nutritional need of managing BP are supposed to be fully integrated into the regular hypertension services in the facilities and be accessible to these patients. Meanwhile, since these processes were not carried out, of course, there was no other measurement to record but the BP level of patients. There was no patient whose BP measurement was not recorded. This means all patients had their BP measured. This implies that in these facilities, for hypertension management, the only indicator that needed to be carefully monitored was the BP, yet studies have shown that BP is also affected by other factors including diet and nutritional status (Arjmand et al., 2016; Thinyane et al., 2015; Nguyen et al., 2013).

Failure to carry out these processes was due to too many patients waiting for care, and so the health workers spent a short time on a patient, as seen from the results that during consultations, health workers spent less than 15 minutes on most patients. Therefore, this means NMS processes were not done for most patients, and even those who underwent these processes spent a very short time. This shows that counseling was done for a very short time, which would not even give a patient enough chance to ask and understand what was needed of her. This is similar to the results of Shima et al. (2014) where health workers spent a short time on patients and thus failed to elaborate more on their physical activity and dietary control. This is a sign that NMS in these facilities was not patient-centred.



In all the problems patients faced in these facilities, what was even worse was the long time the patients waited for different services yet most never underwent any NMS process. Most patients (74% in A and 57% in B) waited for more than 30 minutes to receive care, but most of them did not undergo NMS processes. During this time they could have been educated, had their heights and weights measured and even their BMI could have been determined. Each of these patients would probably not even take 30 minutes to undergo these processes. These long waiting times for care were also identified in the study of Adams and Carter (2011), and the patients in the study by Shima et al. (2014) complained that their session with the health worker was too short, while they had even spent a very long time waiting for their turn to talk to the health worker. In contrast, patients in this study saw their session time with the health worker differently.

Patients in this study did not complain about the short time with the health worker, in fact, they even liked that they did not spend a longer time because this gave them a chance to run other errands outside health care, but they complained about long waiting times for medication and care. It seemed unavailability of these processes had a contribution to patient satisfaction about the time spent in the facilities. Fact that these processes were not carried out, the patients spent a shorter time in the health centres. Comparing the time spent in these MCC facilities with the time spent in the Ministry of Health (MoH) and faith-based facilities, the patients preferred MCC facilities because they did not take the whole day receiving services. Also, the warm welcome they received in MCC facilities was one of the contributors to patient satisfaction with the services received. Patients need to feel welcome and valued as emphasized by the olden theory of Maslow (1954) – Maslow's Hierarchy of Needs which talks of people wanting to feel appreciated, loved, and cared for, and that is what they received in these facilities.

On the other hand, the low level of provision for NMS processes was determined by the inputs put in place to carry out these processes. And some of these inputs seemed to be unavailable, and some were inadequate to carry out these NMS processes. It was clear that NMS was not planned for. Surprisingly, even those inputs that were few but available in the facilities were not put to good use for the benefit of the patients. IEC material was the only input that was unavailable in the facilities, and this somehow also affected the provision of this service, because its availability would have made the nurses provide the service. Again, the amount of staff to provide the service was insufficient, because the services in these facilities were not only offered to the hypertensive elderly, but also the patients with general sicknesses, by the same health staff. Van Bulck et al. (2020) have shown the fundamental value of health workers in the lives of patients. It is obvious that without health workers in the health facilities, service provision becomes negatively affected, and even the patients suffer. However, since financing is the greatest determinant of the availability of most needed inputs, without it there can never be integration of any service, including NMS. These results are in line with Donabedian (1988)'s theory which showed that if inputs are unavailable or insufficient, then the processes will be negatively affected, which will consequently result in undesired outcomes. The undesired outcome here is low integration of NMS while the desired outcome was full integration.



CONCLUSION

The level of integration of NMS was found to be very low in both facilities, with very few patients receiving it only when their BP was high sometimes. The insufficient inputs for NMS negatively affect processes for NMS, resulting in its low integration in the facilities. Ideally, this preventative NMS should have been integrated into curative services for all hypertensive elderly so that many positive returns in health care and patient health could be experienced. It is important that NMS is planned for and its inputs put in place because that will facilitate its provision.

FUTURE RESEARCH

Future researchers should focus on the integration of NMS at a higher level where other sectors work together with the health sector for better health outcomes for hypertensive elderly. Again, it would also be a good idea to have impact research, where these patients are provided with these NMS processes, to see a change in their nutritional status and overall health improvement

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