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ACCESSIBILITY OF ESSENTIAL MEDICINES FOR NON-COMMUNICABLE DISEASES IN A DEVOLVED SYSTEM OF GOVERNMENT IN TRANS NZOIA COUNTY, KENYA

***Lasoi Lucy Saiyoki, Olayo Rose and Oloo Aggrey**

Department of Public Health, Masinde Muliro University of Science and Technology, Masinde Muliro University of Science and Technology (MMUST), P.O. Box 190-50100 Kakamega

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****Corresponding author: Lasoi Lucy Saiyoki***

ABSTRACT

Access to medicines exists when patients have continuous availability of essential medicines at affordable prices within a reachable physical location. With devolution of health services, access to essential medicines is meant to improve. The study sought to determine accessibility to essential medicines for the four major non communicable in Trans-Nzoia County. The study was conducted in five hospitals within Trans Nzoia County using qualitative and quantitative methods. Patients and key personnel were interviewed and secondary documents reviewed. The design was descriptive cross-sectional study carried out for three months. Sample size used was 320 participants attending medical outpatient clinic. Data obtained was analyzed using mean, percentages and standard deviations. The study found that the non-communicable diseases medicines were poorly available at the health facilities at 23%. Stock out rate for essential medicines for non-communicable diseases was found to be high at 202 days per year. With an epidemiological change from communicable to non-communicable diseases, there is need for renewed focus on access to essential medicines for these conditions. Based on the study findings, there is need to increase healthcare funding by County Government for purchase of essential medicines for non-communicable diseases. This will greatly reduce stock out rates thereby increasing availability.

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INTRODUCTION

It is estimated that a third of the world population has no access to essential medicines including medicines meant for non-communicable diseases (NCDs) with the situation being worse in low and middle-income countries (LMIC) where it is estimated that half of the total population has poor access to essential medicines(Abegunde, 2007). Comprehensive solutions and innovations are thus needed to increase both access to essential medicines and research on non-communicable diseases (MOH, 2009). These innovations must involve strengthening health-care systems in poor countries and better matching our research and development efforts to the needs of the poor. It is estimated that a third of the world population has no access to essential medicines including medicines meant for non-communicable diseases (NCDs) with the situation being worse in low and middle-income countries (LMIC) where it is estimated that half of the total population has poor access to essential medicines (WHO, 2004).

Access to medicines may be affected by many factors such as poor availability, unaffordable prices, poor health financing and poor supply chain practices (Sangeeta, 2015).The mean availability for essential medicines for NCDs in developing countries is estimated to be 35 % in public health sector (Cameron, 2010). In Kenya, the mean availability for non-communicable diseases essential medicines according to the Service Availability and Readiness Assessment Mapping report was estimated to be 25% (MOH, 2014). The non-communicable diseases burden reduction is highly dependent on equitable access to essential medicines. Estimates show that appropriate use of essential medicines has the potential to reduce non-communicable diseases burden by 80% (WHO, 2013). Therefore, access to essential medicines for non-communicable diseases is critical in both population and individual based strategies. (Gowshall, 2018).Universal access to healthcare is heavily dependent on availability of quality assured medicines and health products that are affordable to the end user (Robertson, 2015). Poor supply of essential medicines in public health facilities has a direct effect on

mortality and morbidity. This is because public health facilities serve the larger population that cannot afford private health care (Muiruri, 2017). Accessibility to these essential medicines of which availability is one of the major indicator has a close relationship to health system and its adequate utilization (Sakthivel, 2005). In most developing countries a big proportion of the household health related expenditure goes to the purchase of essential medicine, mainly done out of pocket. This leaves household and individuals exposed to poverty effects of purchase of essential medicines for non-communicable diseases with the acute phase of management of NCDs being costlier. (Sangeeta, 2015).Non-communicable diseases are a growing source of morbidity and mortality and it is projected that its prevalence may exceed that of communicable diseases as the leading cause of mortality globally by the year 2030 (WHO2014, Setswe 2014). Non-communicable diseases are the leading causes of death globally, killing more people each year than all other causes combined. Nearly 4 in 5 non-communicable diseases deaths occur in low and medium income countries (Gowshall, 2018). Mortality reports indicate that 57 million deaths occurred globally in 2008, 36 million representing two thirds were attributed to NCDs (Sangeeta, 2015).

Like other developing countries Kenya is facing a double burden of communicable and non-communicable diseases. In Kenya non-communicable diseases account for more than 50% of total hospital admissions and 55% of hospital deaths (MOH, 2015b). The national non-communicable diseases prevention and control strategy 2015-2020, which correlated with global action plan for prevention and control of non-communicable diseases, aims to reduce the preventable prevalence of morbidity, disability and mortality due to NCDs through multi-sectoral collaboration at the national and county level through focus on all major non-communicable diseases including cancer, diabetes, cardiovascular diseases, chronic obstructive pulmonary diseases.(MOH, 2015a). The World Health Organization strategy, renamed "best buys" provides policy directions and recommended interventions appropriate to national context in implementing measures towards achieving sustainable development goals (SDG) especially SDG 3 on good health and well-being. Top on the list of WHO health system best buys on countering non-communicable diseases is the use of multi drug therapy including glycemic control for diabetic patients, aspirin therapy for acute myocardial infarction, treatment of persistent asthma with inhaled corticosteroids and B_2 agonists (WHO, 2013). In the Kenyan context, only 34% of facilities in the country can provide the Kenya essential package of health for non-communicable diseases defined services. This figure is higher for Trans Nzoia County, at 43% although the mean availability of tracer NCD essential medicines was 15% which is much lower than the national figure. The prevalence of non-communicable diseases in Trans Nzoia County stands at 30% (MOH, 2015b).

In practice, devolution in Kenya was preceded by the adoption of a new constitution in 2010 that outlined a new structure of government consisting of a central government and forty-seven devolved units referred to as counties (Murkomen, 2012). Responsibility for health service delivery are assigned to county government while national referral hospitals, capacity building and formulation of policy is assigned to the central government (MOH., 2012).According to Murkomen, devolution was aimed at promoting access to health services throughout the country, addressing bureaucratic challenges in procurement of medical supplies and improving quality of health services (Murkomen, 2012). Devolution is not unique to Kenya as there is an increase in devolution of healthcare systems in other countries like Ghana, Zambia, Philippines and Guatemala whereby the functions and activities sitting at the central government are getting decentralized over time (Bossert, 2002). The expectation is that devolved health system will improve accessibility and equity of services as well as promote accountability and transparency due to increased decision space (Muchomba, 2015).

MATERIALS AND METHODS

A descriptive cross-sectional design was adopted, employing quantitative and qualitative techniques for data collection. The study was conducted in Trans Nzoia County located in the former Rift Valley Province. The study was conducted for a period of three months from 13th June 2019 to 13th August 2019 with the study population being out-patients with any or all of the four major non communicable diseases that is cancer, diabetes, cardiovascular disease and chronic obstructive pulmonary disease attending outpatient clinics in any of the 5 sub county hospitals within the five sub counties of Trans Nzoia county. Cluster sampling and simple random sampling were used and a sample of 322 was obtained. The key informants were purposively selected in each hospital until a saturation level was attained. They included: a hospital pharmacist, nursing officer in charge, procurement officer, medical superintendent as well as stores person. Complete enumeration from the Kenya essential medicine list of 2016 was done and a total of 62 essential medicines. Structured questionnaires to patient participants., Key informant interviews guides as well as Check lists were used to collect information. Descriptive methods of data analysis were used to obtain the mean, median and frequencies. Inferential methods of analysis included the use of Chi square and odds ratio. Qualitative data was also transcribed and coded for themes and categories. The data was then presented in form of simple tables, bar graphs and pie charts.

RESULTS

Only about 27% of the study participants obtained all the medicines prescribed. Most 73% of the respondents received at least half of all the prescribed medicines for non-communicable diseases with 27% receiving less than half of the prescribed medicines.

Availability of essential medicine on the day of visit

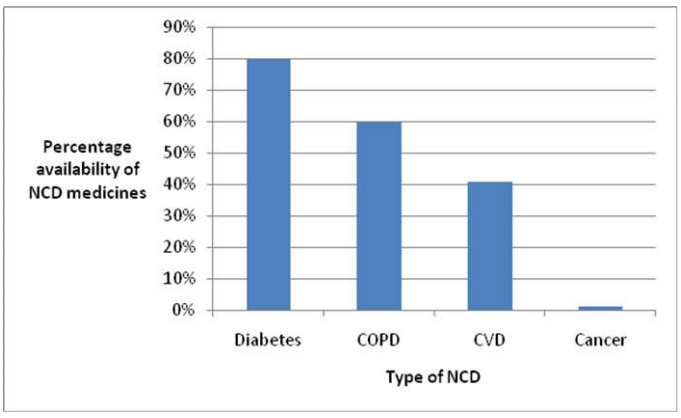

Figure 4.1. Availability according to the type of essential medicine

All the cancer medicines were found to be unavailable except for methotrexate and morphine solution for palliative care available in only one of the five hospitals visited.

Table 4.1. Availability of essential medicines on day of visit

Medicine	Availability	N	%
	N	0	0.0%
Metforming tablets	Y	5	100.0%
Glibenclamide tablets	N	5	100.0%
	Y	0	0.0%
insulin 70/30	N	4	80.0%
	Y	1	20.0%
Soluble Insulin	N	0	0.0%
	Y	5	100.0%
Amiloride	N	4	80.0%
	Y	1	20.0%
Furosemide	N	0	0.0%
	Y	5	100.0%
Hydrochlorothiazide	N	2	40.0%
	Y	3	60.0%
Spironolactone	N	3	60.0%
	Y	2	40.0%
Digoxin	N	3	60.0%
	Y	2	40.0%
Carvedilol tablets	N	2	40.0%
	Y	3	60.0%
Amlodipinne	N	0	0.0%
	Y	5	100.0%
Beclomethasone	N	3	60.0%
	Y	2	40.0%
Epinephrine injection	N	3	60.0%
	Y	2	40.0%
Salbutamol inhaler	N	0	0.0%
	Y	5	100.0%

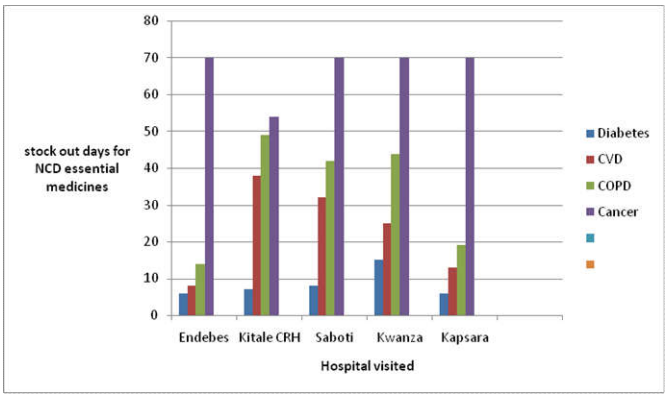

Figure 4.2 Stock out days for different class of medicines and hospitals

DISCUSSION

The mean availability of essential medicines for non-communicable diseases to be sub optimal at 23%. The mean availability for non-communicable disease essential medicines in Kenya according to the SARAM report of 2014 was estimated to be 25%.The report also estimated that of Trans Nzoia county to be 15% (MOH, 2014).The mean availability of 23% shows that there was a slight improvement in this parameter in the devolution of health era .Essential medicines are meant to be available to all in a functioning health system at the right dosage form, in good quality, in adequate amounts and affordable prices. Non availability of essential medicines lowers the effectiveness and adequate utilization of a health system(Sakthivel, 2005) pushing patients away from the public health facilities to the private and faith based organizations where studies have shown to have better access to essential medicines in terms of availability. Kitale County Referral Hospital had the highest availability level of 38% attributed to partnership between the hospital and AMPATH (Academic Model Providing Access to Healthcare) which supports the hospital with some of these medicines. The availability was however far much lower than the recommended 80% (WHO, 2014). The study findings agreed with those of a meta-analysis of surveys carried out in 30 low- and medium-income countries on essential medicines for NCDs which showed that the average availability was 36% (Cameron, 2010).

As part of the global response to the non-communicable diseases the World Health Organization recommends an 80% availability of the essential medicines and medical technologies for the management of the major non-communicable diseases at both the public and private sector (WHO, 2014). An example used to measure the availability of these essential medicines is hydrochlorothiazide, a first line medicine for management of hypertension and normally available in a wide range of cheap generics. It is also used as a tracer medicine by both the ministry of health and the world health organization. It was found to have an availability of 60%, lower that the recommended WHO 80%. It was expected that such a medicine would be available in all health facilities providing chronic disease management services due to its core role and its low prices. This implied that it would be difficult to have the other medicines meant for non-communicable diseases available if the availability of this cheap, basic medicine was still suboptimal. A study done on other low- and medium-income countries by World Health Organization found it to have a mean availability of 50% (WHO, 2003).Insulin 70/30a very critical medicine in management of diabetes was found to have poor availability of 20% with only one facility having the essential medicine. Availability of common drugs for non-communicable diseases like insulin 70/30 is a well-recognized problem in the health system of most low- and medium-income countries which tend to have sub optimal levels of this lifesaving medicine for the diabetic patients (Beran, 2010). This scenario often leads to referral of the patients to health facilities that are further away from them or to private facilities raising the cost of the management of the disease. Another alternative is that patients forego their treatment which poses even a larger threat in terms of progression of the disease to even more complications such as retinopathy and diabetic keto-acidosis which is life threatening and more expensive to manage This poor availability also resonates to a study done in Bangladesh, Nepal and Malawi which showed poor availability at a point in time of the medicines for non-communicable diseases in the public sector at 36 % (Mendis, 2007).

Availability of essential medicines is critical to any health service delivery system in a community. Unavailability of these critical essential medicines in the public sector often forces the population to seek healthcare services from the private sector where they are more available but at the same time costlier, to some completely unaffordable. The global leadership priorities for WHO is increasing the access to affordable, effective quality assured medical supplies (WHO, 2014). The ever-increasing prevalence and burden of non-communicable diseases results in many patients being unable to receive the required prompt treatment and care. This in turn leads to quick progression of the disease leading to development of complications and co-morbidities which are in turn more expensive to treat and often leads to poor prognosis

(Gowshall, 2018).Universal access to healthcare is heavily dependent on availability of quality assured medicines and health products that are affordable to the end user (Robertson, 2015). Even with the availability of low-cost generic essential medicines for non-communicable diseases, essential medicines are still unavailable in most low- and medium-income countries partly attributed to the high levies and taxes that are sometimes imposed on medicines and the uncontrolled mark ups by distributors and retailers. This non-availability of essential medicines was cited as the most important barrier to quality healthcare services by consumers (MOH, 2009).

Stock out for essential medicines for non-communicable diseases: The average stock out of the essential medicines for management of the four major non-communicable diseases was found to be 202 days per year. This is a very high stock out rate compared to 46 days reported for the general essential medicines in 2014. Medicine stock out in health facilities is an indicator of the overall performance of the health delivery system. The ministry of health classifies 30 days of stock out as serious and beyond 90 days as critically jeopardizing health service delivery (MOH, 2009). Stock out of individual drug was highly varied with some as high as a hundred and others at zero percent. This implied that some essential medicines for non-communicable diseases were not available in the entire one-year study period implying that patient suffering from these diseases were forced to seek them elsewhere. Some medicines had a stock out rate of 0 % implying that there was a skewed prioritization in procurement of the drugs. This skewed prioritization was found to be highly dependent on the prevalence of the diseases whereby medicines for the more prevalent diabetes and cardiovascular diseases were found to have less stock out days. Essential medicines for non-communicable diseases with the highest stock out rates were mainly anti-cancer medicines Out of the five facilities studied only one facility had two anticancer drugs out of the thirty-one drug listed on the Kenya Essential Drug List of 2016.Of the two medicines only one was meant for treatment of cancer as the other medicine is used for pain control in palliative management. This resonated to a study done in Vietnam which found that health facilities had just one medicine used for palliative care and no other medicine for cancer management was available (Cameron, 2010).

Various factors were explored to explain the difference in the stock out rate. The high stock out rate of anticancer medicines was attributed to the fact that the disease was still being viewed as a relatively new pandemic with the Kenya Essential Medical Supplies Authority (KEMSA) having not yet began distributing these cancer drugs to these health facilities. Also important was the lack of expertise on the same. Among the reasons for the high stock out rates was poor financing by the county government and the long procurement processes involved in medicines purchase. Majority of the participants at 71% felt that the county government was not doing enough to ensure steady supply of the essential medicines for non-communicable diseases. Essential medicines were more available when the county government had purchased the medicines and delivered them to the facilities. This happened twice in the year especially at the second and the fourth quarters of the financial year when fund for the main and supplementary budget had been released.

The study answers the question of availability of essential medicines for non-communicable diseases. The study found that the medicines were poorly available at the health facilities at 23% against the recommended level of 80 %. The study recommends that measures are instituted that will assist in improving the availability of the essential medicines for non-communicable diseases from 23% to the recommended 80% such as partnerships and collaborations as well reverting to the older system of quarterly orders to improve the order rates from 50% to 100%. Existing policies and procedures should be strengthened to ensure steady and uninterrupted supply of essential medicines for non-communicable diseases to the public health facilities.

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