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HEALTH SERVICE PROVISION AND UNIVERSAL HEALTH COVERAGE PROGRAM AT THE OUTPATIENT DEPARTMENT OF KARATINA HOSPITAL, NYERI COUNTY, KENYA

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ABSTRACT

Background: **Universal Health Coverage (UHC) aims to promote equity in access, ensure quality healthcare and offer financial protection. Karatina Sub-county hospital is in Nyeri County, a pilot UHC county. The study sought to determine the influence of UHC program on health service provision in the outpatient department of this hospital.**

Methods: **The study was a descriptive cross-sectional survey. Interviewer administered questionnaires and hospital records of patient numbers were used for data collection. Systematic random sampling was used. Key informant interviews collected qualitative data. The sample size was 228 respondents and 6 healthcare providers. The SPSS software was used to analyze quantitative data. Qualitative data was analyzed using a deductive approach.**

Results: **There was a 67% increase in patient numbers. Most patients were below 60 years old and low-income earners. Close to 80% were hospital revisits. About 56% were managed for acute illnesses and 31% for chronic illnesses. Fifty five percent of patients waited for over two hours before being attended. The hospital provided about 2/3 of all health services required. Majority (>80%) of the patients were satisfied by the overall services received at the hospital. The main**

challenges under UHC were understaffing, long patient waiting time and inadequate hospital resources. There is only partial financial protection.
***Conclusion*: There is improved access and partial financial risk protection. Overall service provision is better, but the quality of care is compromised due to the challenges experienced.**

INTRODUCTION

Health is a fundamental human right. However, according to WHO (2017), less than half of the world's population have access to crucial health amenities. Most of them pay for health services from out of their pockets. These health-related expenses are significant enough to push about 100 million of them into extreme poverty (World Bank, 2019). The situation is worse in middle and low-income countries. In Africa, 11 million families fall into poverty annually because of out-of-pocket payment (OOP) of medical services (World Bank, 2019). In Kenya, 35 million people do not have access to quality health care (World Bank, 2014).

Universal Health Coverage (UHC) is a policy formulated by the WHO based on the WHO constitution of 1948 declaring health as a fundamental human right and the Health for All Agenda set by the Alma Ata Declaration of 1978 (Pandey, 2018). It was formulated with three primary objectives; to ensure equity of access, to improve quality and provide financial protection to patients. In Kenya, UHC is one of the big four agenda under the current government. It was rolled out as a pilot project in four counties: Machakos, Isiolo, Kisumu and Nyeri in December 2018.

Nine months past the implementation day, the study aimed to assess how "free" the free medical services offered in a low resource set-up like Karatina Sub county hospital. Therefore, the following objectives:

a) To determine the difference in patient numbers before and after UHC at Karatina Sub-county Hospital.
b) To determine the socio-demographic characteristics influencing utilization of UHC at Karatina Sub-county Hospital.
c) To determine the direct health related cost incurred by patients utilizing outpatient services at Karatina Sub-county Hospital.
d) To determine healthcare provider perspectives on UHC at the outpatient department at Karatina Sub County hospital.
e) To determine the level of patient satisfaction with UHC at the outpatient department at Karatina Sub County hospital.

MATERIALS AND METHODS

Study design: A descriptive cross-sectional study was used. The design allowed a snapshot view of the facility at that particular moment. The target population was patients utilizing the outpatient department of the hospital and have enrolled to the UHC program. Key informants comprised of the medical superintendent, a clinician, a pharmacist, a lab technologist, a sonographer and an OPD nurse. Data on patient numbers was obtained from hospital records.

Setting: The study was conducted in outpatient department of Karatina Sub county Hospital, in Karatina town, Mathira East Sub

County in Nyeri County, Kenya. Mathira East has a population of 99,065 citizens according to the 2019 census report (KNBS, 2019). Most of these people are farmers and Karatina town holds the biggest open-air market in East Africa (Pinecrest, 2019). The hospital is one of the facilities under the pilot UHC programs.

Variables: The dependent variables comprised of hospital factors (accessibility, affordability and quality of services) and patient factors (sociodemographic, level of education, economic factors and patient perceived quality of services). The intermediate variables were the key pillars of UHC which the program was actively addressing in the hospital. The dependent variable was utilization of outpatient services.

Sampling, data collection and analysis: Simple random sampling was used to select Nyeri County and Karatina Sub county hospital. Fischer et al formula was used to arrive at a sample size of 228 respondents. Systematic random sampling was used with a sampling interval of 19 patients. The calculation is a follows: Kth = N/n. N is the target population which is 4,200 and n is the sample size which is 228. Kth =4200/228=19. The first respondent was picked at random. Semi structured questionnaires were used to collect data. Pre-test was done in the same facility one week prior to data collection. Key informants were selected based on the positions they held in the various departments and their ability to provide the most wholesome information regarding the department.

Data from the questionnaires was fed into SPSS software version 23 for analysis. Chi square at 95% confidence interval was used to test association between variables. Results were interpreted as significant if $p<0.05$. A deductive approach was use to analyze data obtained from key informant interviews. Data on patient numbers was manually tabulated in Microsoft Excel 2010 to generate tables and graphs.

Inclusion and exclusion criteria: Patients with UHC who had received treatment at the outpatient department and were not admitted were included in the study. Patients excluded from the study are those that met the above criteria but too sick to be interviewed or they were below 18 years and did not have an accompanying caregiver.

Ethical consideration: Ethical clearance was obtained from the Kenyatta University Ethical Review Committee (KUERC) after careful and comprehensive review of the protocol for the study (REF: KU/ERC/APPROVAL/VOL1/3). Permission to conduct the study was sought from the management Karatina Sub County hospital. Informed consent was sought from individual respondents. Participation was voluntary. Each participant signed the consent form before the interview.

RESULTS

Patient numbers: Since the introduction of the UHC program in December 2018, the hospital has recorded an average of 67% increase in patient numbers. This represents an average of 6,643 patients per month. Patient numbers had almost doubled in the months of March, May and June. There was however a consistent drop from June to September.

Table 1
The number of patients visiting the outpatient department 2018 vs 2019

	2018	**2019**
January	8,851	12,211
February	9,839	15,288
March	10.494	19,948
April	10,434	17,382
May	9,746	17,104
June	8,862	17,274
July	10,400	16,864
August	9,878	15,746
September	9,273	14,850
TOTAL	**87,777**	**146,667**

Socio-demographic and socio-economic information

Among the 228 patients interviewed, 31% (71) were male and 69 % (157) were female. The less than 18 years and 30-39 years age brackets had the highest respondents (19% each). Those above 70 years had the least percentage (7.5%).

Eighty three percent of all respondents had received some formal education, only 5% had not attended any learning institution. Twelve percent were non-school going children. Sixty percent of the respondents had some form of employment. More than half of these individuals earned below 5,000 shillings in a month. Only 8 (3.5 %) participants had monthly earnings of over 20,000 Kenyan shillings. Respondents with no source of income comprised of children under the age of 18, students and the unemployed.

Quality of service

Majority of patients attend the outpatient department because of acute illnesses (56%). Chronic disease treatment constituted the second highest reason for hospital visits (31%). Seventy-eight-point five percent of these cases were hospital revisits.

More than half of the patients had stayed a duration of more than two hours before they were attended by the clinician (54.8%). Twenty two percent of the patients had waited for more than five hours before they saw the clinician. Majority of all patients (40.4%) proceeded to stay in the hospital for a total duration of more than 5 hours. The least number of patients (7.5%) had stayed in the hospital for less than an hour.

The hospital pharmacy provided at least one form of medication to 92.1% of patients and all medication to 64.9% of the patients. Those

who received none comprised 5.4%. The hospital laboratory was able to provide all investigations to 65.6% of the patients while 14.8% received some but not all of the investigations, with no investigation available for 19.7% of the patients. The hospital imaging department provided all imaging requests for 60% of the patients. For 32.5% of the patients, no requested imaging modality was available and those who received just some of the requested modalities constituted 7.5%.

Financial risk

Majority of the respondents (67%) did not spend any money to purchase medication. A quarter spent less than 500 shillings. Those who spent more than 1,000 shillings were less than 1%. Ninety one percent of the respondents did not spend any money on lab investigations. Less than one percent of the patients spent above 5,000 shillings. A further 93% of the interviewees did not spend on imaging services. However, majority of the remainder (3.5%) spent above 5,000 shillings.

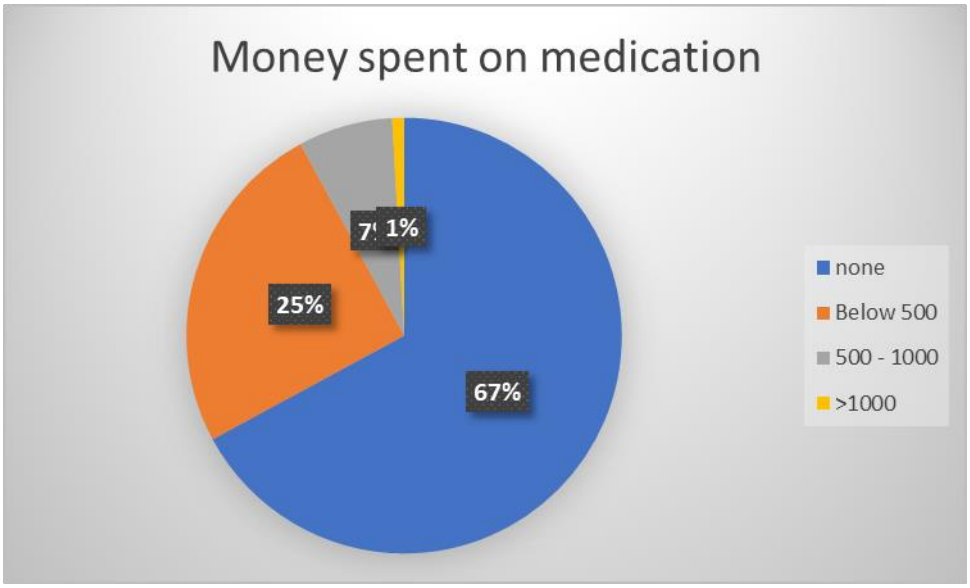

Figure 1: Money spent on medication

A large percentage of the interviewees (91 percent) reported that they did not spend any money on laboratory investigations. Two percent spent less than 500 shilling while 4.4 percent spent between 1000 and 2000 shillings. Two-point two percent spent between 3000 and 4000 shillings. Those that spent a figure above 5000 shillings were less than 1 percent.

Majority of the interviewed patients (93 percent) did not spend any money on imaging procedures. Zero-point nine percent spent below 500 shillings, another 1.3 percent spent between 1000 and 2000 shillings and 0.4 percent spent between 3000 and 4000 shillings. Only about 3.5 percent spent 5000 shillings or more on imaging.

Patient perceived satisfaction

Twenty eight percent were very satisfied with the total duration of hospital stay. Twenty-six percent comprised of those who were satisfied. Nine percent were neither satisfied nor unsatisfied. Thirteen percent were unsatisfied while 24 percent were very unsatisfied.

Three quarters of the patients were very satisfied with the communication and interaction they had with the hospital staff.

Only 5% had negative remarks towards their interaction with the hospital staff.

Eighty four percent of the respondents had positive remarks about the overall services provided in the hospital. Less than 10% were dissatisfied with the services at Karatina Sub-county hospital.

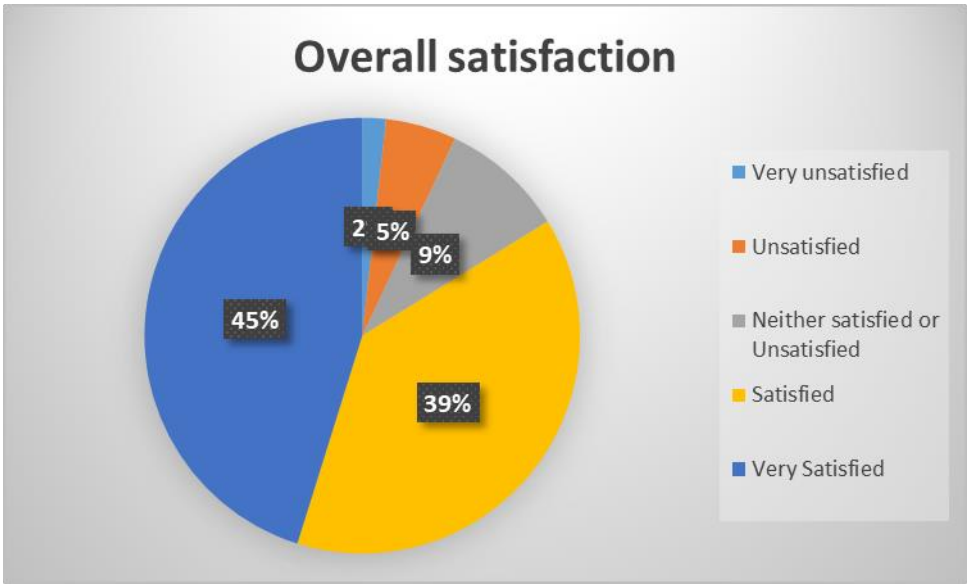

Figure 2: Overall satisfaction with services in the facility

Key Informant interviews

All interviewed individuals agreed that UHC is a good program and it allows patients access health services at a minimum financial risk. There was a noted increase in patient numbers in all out-patient departments, however, the staff hired did not match the patient numbers. The interviewers agreed that the quality of services may not be guaranteed because of understaffing and subsequent work overload experienced by healthcare providers. In addition, the large numbers and poor record keeping delay the timeliness of the services offered. This is coupled with the inadequate resources available in the hospital in terms of medication, lab services and imaging modalities. They highlighted the fact that UHC's financial protection in the facility is limited to the services available at that particular time. This is considering challenges experienced such as drug stock outs, delay in reagent delivery in the lab by KEMSA and only two imaging modalities present in the hospital (X-ray and ultrasound). They also reported about the small working spaces: not enough to allow equipment accommodate patients and ensure confidentiality.

DISCUSSION

Since UHC was rolled out, the facility has received a 67% increment in patient numbers. This has mainly been attributed to the fact that all services offered in the hospital are free of charge. It is however important to consider the numbers in the months of May, June and July might have been influenced by industrial actions among health workers in the neighboring Kirinyaga and Laikipia counties. The high numbers are similar to findings in a study conducted in rural Ghana analyzing the influence of health insurance on health seeking behavior. It found that people who

are insured utilize health facilities more (Osei & Agyemang, 2017).

Women were utilizing the services more than men, 69% and 21% respectively. Most of the respondents were aged between 30-39 years and those below 18 years. The age bracket above 60 years had the least number of respondents. The relationship between age of the respondent and the utilization of healthcare services was statistically significant with a p value of 0.035 with the population being predominantly young.

In the study, most of the respondents (82%) had some form of education. The relationship between the level of education and the utilization of healthcare services was statistically significant with a p value of 0.019. The results are similar to a study done in Canada (Alter, 2011). The level of education influences access to healthcare services.

Study findings indicated that 60% of the respondents had a form of employment most of them being self-employed. Majority got an income of less than 5,000 shillings per month. The findings are much similar to a research that was done by Veugelers and found that people with lower socioeconomic background used comparatively more hospital services (Veugelers, 2003). With the implementation of UHC this population is safeguarded against financial hardships while seeking health services.

There were many hospital revisits. Thirty-three-point eight percent of the participants visited the hospital more than 5 times since January 2019. This can be attributed to the fact that UHC is free and so the patients are likely to visit the hospital at any slight discomfort (Tangcharoensathien, 2018). Hence, disease progression may be halted in the earlier stages. This also explain why the inpatient numbers were reported to be fairly constant or slightly dropping. In addition, chronic disease patients and pregnant women had regular scheduled visits also explaining the revisits.

Quality of care

More than half of the patients (54.8%) wait for more than two hours before clinicians attend to them. A further 40.4% of patients end up spending more than 5 hours in the hospital visit. The Institute of Medicine acclaims that a patient should wait not more than 30 minutes before they are attended to (Musinguzi, 2015). The findings indicate that the facility is doing poorly in terms of timeliness of service delivery. This, in agreement with findings by Oche and Adamu was attributed to large patient numbers and staff shortage (Oche & Adamu, 2013). A study conducted in Malaysia attributed the long hospital stay to human resources, equipment availability, the process of registration and large patient numbers (Labonte, 2004).

Majority of patients did not require any imaging or lab services in the hospital. Twenty-one-point five percent of the respondents underwent a laboratory investigation. This is slightly lower than a previous study by Ngo which found that around 29% of patients undergo a lab investigation in the out-patient department (Ngo, 2017). Close to 12% of the respondents reported to had been sent for imaging. The hospital was able to provide all lab services and imaging for more than 80% of the patients who required them. It further provided all medication for 67% of the respondents. There is however, a question whether clinicians are prescribing only certain medication and investigations because they are the only ones available. Hence, do they compromise quality to fit within the available resources? This question is validated by findings from a research, which suggest that some clinicians fail to send patients for

imaging because they are ill equipped to interpret the results (Kawooya et al, 2002).

Financial risk

Results obtained from this study showed that a majority of the patients did not incur any out-of-pocket expenditure while seeking healthcare in the facility. Only 8% and 6% spent money on laboratory investigations and imaging respectively. However, the percentage of those who spent money in purchasing medication was much higher (32%). Majority of them (25%) spent less than 500 shillings and only a few (7%) spent more. Looking at the figures, it would seem safe to say that the financial risk that patients are exposed to is minimal. However, 30.3% earned below 5000 shillings a month. Only 3.5% of the participants had monthly earnings of over 20,000 shillings. This is a clear indication that most of the respondents are low-income earners. Therefore, any out-of-pocket costs incurred could pose financial hardship to the respondents. The findings are similar to a study conducted in Rwanda showing that despite health insurance, patients still faced financial risk from out-of-pocket expenses (Nyandekwe et al, 2014). Relationship between respondents' monthly earnings and the purchase of medication was of statistical significance with a p value of <0.01.

Despite the long waiting time and hospital stay, most patients are satisfied with the services (p value <0.01). They attributed this to the fact that they were attended to, the service was free and they received most, if not all of the medication prescribed. However, respondents emphasized on the need for a solution to the lengthy queues, especially at the UHC card retrieval room. A study conducted in Northern Nigeria supported the notion that long waiting hours can cause stress and dissatisfaction to patients (Oche & Adamu, 2013).

CONCLUSION

There is improved access to medical facilities- There has been a 67% increase in number of patients. Most these patients are young, self-employed and have attended school at some point in their life. Majority are low-income earners and visit the hospital mainly for acute and chronic illnesses

UHC is offering only partial financial protection…limited to what is available in the hospital at that particular time. There is understaffing in the OPD- personnel exposed to work overload hence affecting the quality of care

There exist challenges whereby some medication, laboratory and imaging investigations are not available due to the limited number of resources in the facility. Large numbers, understaffing and poor health record management causes a prolonged hospital stay.

Majority of patients were satisfied with healthcare services offered under UHC despite the challenges experienced. Most healthcare providers believe that UHC is beneficial to the patients but their wellbeing need to be considered.

RECOMMENDATIONS

UHC needs to focus on the young population and address both acute and chronic illnesses affecting the youth. The government should promote both primary and secondary education since it has been demonstrated that formal education improves health-seeking behavior.

KEMSA should expand the variety of commodities it is supplying to the hospitals in

order to meet the patient demands. There should be timely delivery of commodities

The public should be educated on the UHC programme. They should also be encouraged to continue with their NHIF payments since the facility cannot provide all services. An increase in the number of staff members in all OPD departments. The implementation of the HMIS in the entire OPD. Proper infrastructure needs to be laid down in order to meet the growing patient numbers.

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Further research

There is a question whether clinicians are prescribing only certain medication and investigations because they are the only ones available. Hence, are they compromising quality to fit within the available resources? We, therefore, encourage researchers to consider evaluating the quality of health services provided in the facility both in the process and outcome aspects of quality.

There is also a question on the sustainability of the programme. Under the pilot, the user fee initially paid by patients has been covered by a grant from WHO. After the pilot is over and UHC is rolled out in the entire country, where will the financial coverage come from? In addition, for how long will it sustain the entire country? Will health services be paid for? If so, at what rate and to whom? Or rather, should UHC first be implemented only as a primary healthcare package in the OPD in conjunction with NHIF before it is rolled out as a comprehensive package?

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