Global Journal of
Health Science
(GJHS)

DETERMINANTS OF A FUNCTIONAL REFERRAL SYSTEM IN KISUMU COUNTY, KENYA PATIENTS' PERSPECTIVE

Otieno Wilbert Nango, Ms. Eunice Muthoni Mwangi and Mr. Musa Oluoch

IPRJB
INTERNATIONAL PEER REVIEWED JOURNAL AND BOOK PUBLISHING

Global Journal of Health Sciences
ISSN 2519-0210 (Online)
Vol 4, Issue 1, No.2, pp 11 - 31, 2019

IPRJB
INTERNATIONAL PEER REVIEWED JOURNAL AND BOOK PUBLISHING
www.iprjb.org

DETERMINANTS OF A FUNCTIONAL REFERRAL SYSTEM IN KISUMU COUNTY, KENYA PATIENTS' PERSPECTIVE

[1*]Otieno Wilbert Nango
[1]Post Graduate Student: Kenya Methodist University
*Corresponding Author's Email: nangowilbert@gmail.com

[2]Ms. Eunice Muthoni Mwangi
Lecturer: Department of Health Systems Management
Kenya Methodist University

[3]Mr. Musa Oluoch
Lecturer: Department of Health Systems Management
Kenya Methodist University

Abstract

Purpose: Most referral health facilities are faced with challenges ranging from congestion of patients at these health facilities, strained/ limited resources (both human and material) to deal with the voluminous patients, slow rate of service delivery to the patients which normally results in compromised quality of medical care provided to the patients. The study therefore aimed to find out the determinants of a functional referral system in two high level health facilities; Jaramogi Oginga Odinga Referral Hospital (JOOTRH) and Kisumu County Referral Hospital (KCH).

Methodology: A cross sectional study was conducted using a quantitative approach to data collection. Three hundred and thirty eight out-patient clients were systemically selected to participate in the study. Data was collected using Individual questionnaire. The collected quantitative data were coded and analyzed using the SPSS 25.0 Computer program. The quantitative data were then analyzed using the descriptive statistics and logistic regression models.

Results: The research findings revealed that there is a positive significant correlation between primary health facility characteristics ($r = 0.474^{**}$; $P<0.000$).It also revealed that there is a positive significant correlation between receiving facility characteristics ($r = 0.475^{**}$; $P<0.000$) to a functional referral system. Further Multivariate analysis also revealed a significant association between referral health facility characteristics and a functional referral system, ($\beta 3 = .425$, $P = .000$).The results further revealed that there was a negative significant association between receiving health facility characteristics and a functional referral system, ($\beta_4 = -0.156$, $P < .000$).

Unique Contribution to Theory, Practice and Policy: The County government of Kisumu should supply adequate drugs and equipment's to attract more patients seeking medical care services to the primary level facilities. Quality of services offered and general cleanliness at the primary health facilities should also be improved to boost patient's confidence in them.

Key Words: *Functional Referral System, health facilities*; *Jaramogi Oginga Odinga Referral Hospital (JOOTRH) and Kisumu County Referral Hospital (KCH).*

1.0 INTRODUCTION

1.1 Background

The World Health Organization lists six key pillars of the health systems namely; Health service delivery, Health Workforce, Health Information system, Access to essential medicine, Health system financing and Leadership and governance (WHO report,2007). This study's focus is on health service delivery as a vital pillar affecting most of the developing Nations. Health service delivery as a key pillar in any health systems across the world should be strengthened at all levels to ensure the population access quality health services. Kenya National Health Sector Strategic Plan (KNHSSP 2008-2014). The delivery of health care in a hierarchical health system lies in the existence of a well-functioning referral system that allows for continuity of care across different tiers of care.

Globally, the response of the health sector and societies to the challenges facing primary health care has been slow and inadequate. It reflects both an inability to mobilize the requisite resources and institutions to transform health around the values of primary health care. There is also a failure to either counter or substantially modify forces that pull the health sector in other directions, namely: an unbalanced focus on specialist hospital care; disintegration of health systems; and the spread of unregulated commercial care (WHO report 2013). This contributes to a dysfunctional referral system. A study carried out in Nigeria in one of the referral hospitals indicates that a high proportion of patients who were seen at the tertiary health facility were not referred, 92.9% had reported to the facility without referral (Abodunrin, Akande, & Osagbemi, 2010).

According to the Kenya Health Sector Referral Implementation Guidelines 2014, referral health care system in Kenya like in most developing countries is accessed across a pyramid – like structure of health institutions. It is organized around six level of care that fit into four tiers of care based on the scope and complexity of the services offered. The Referral guidelines take into account the six levels of care in Kenya. These levels are: 1. Community Health Services (Level 1): this level lies at the foundation of the health delivery system, and comprises of community health services. 2. Primary care Services (level 2 and level 3): These levels of care include facilities such as dispensaries, health centers, maternity and nursing homes. 3. county Referral Services (level 4 and level 5): these facilities are managed by any given county and include hospitals that offer a broad spectrum of treatment, and whose services complement the work of primary care facilities. 4. National Referral Services (level 6): These facilities offer specialized health care services including national referral hospitals, laboratories, blood banks and research facilities (GOK/MOH, 2016).

Typically the apex of this structure consists of a national hospital / referral research institutions, while at its base comprises small scale health facilities – the health centers and dispensaries. In between the pyramid lie tiers 2-5. This system allows for movements of patients or their problems from the base of the national health care system to its apex and vise-versa (Overview of the Health System in Kenya, 2005). The study therefore aimed to find out the functionalities determinants of an effective referral system and come up with recommendations that will help in solving this perennial challenge within the health system.

1.2 Statement of the Problem

Most referral health facilities (level five) are faced with challenges ranging from congestion of patients at these health facilities, strained/ limited resources (both human and material) to deal with the voluminous patients, slow rate of service delivery to the patients due to high numbers, unclear guidelines that gives direction on referral execution and compromised quality of services to the patients, (Abodunrin et al., 2010). There is also the aspect of low knowledge levels of the health care workers on the available guidelines and of course their attitude towards its implementation. State of the infrastructure at the primary health care centers and their functionalities are also some of the factors that influence the patients' behavior towards seeking medical care (Hsia, Mbembati, Macfarlane, & Kruk, 2012).

The functionality of the JOOTRH and Kisumu County Referral Hospitals has often been challenged by self-referrals of patients who should be accessing care at lower tier health facilities. Having done the background check, self-referrals within these two facilities stand at 50.0% and 57.4% of patients attending care at JOOTRH and KCH respectively. This ultimately results in overburdened workforce at the referral facilities, Poor quality care to the patients, long waiting time by the patients, restrained resources at the referral facilities and general congestion of patients at these two facilities.

A study carried out by the Office of the Auditor General-GOK in the year 2012 revealed that only 3.6% of the clients seen at Kenyatta National hospital had direct referrals letters from the primary health care providers - dispensaries and health care centres (Auditors report, 2012). In 2013, Measure Evaluation in collaboration with the Kenya Government conducted a survey across eight Counties which showed that only 32.7% of the patients attended to have some form of referral. This study was conducted between June and July 2013 in eight counties: Garissa, Kakamega, Kilifi, Kirinyaga, Machakos, Nairobi, Nakuru, and Siaya and a total of 88 facilities and 27 community units (CUs) were assessed. Majority of the clients just walked in with cases that can even be managed at the primary level of care (Auditors report, 2012). This study sought to identify the determinants of a functional referral system and give recommendations based on the results achieved.

2.0 LITERATURE REVIEW AND THEORITICAL REVIEW

2.1 Functional Referral system

An effective and functional referral system ensures health services to all people in Kenya in the following ways; cost effective health services are provided to the citizens, proper coordination and standardization of the referral service, promotion of equity and universal health care coverage to all the citizens and enhance health care planning through performance monitoring of the health care process. This in turn will strengthen lower health facilities and capacity of all the health care workers, improve efficiency of health system by ensuring appropriate use of health services, health care services are provided at the lowest possible cost and better linkage between health facilities at all levels, (Kenya Health Sector Strategy, 2014). A functional referral health facility should follow the guidelines discussed below to achieve the desired outcomes.

2.1.1 General layout of the Kenyan Referral System

The National Health body defined Kenya Essential Package for Health (KEPH) and the Health Service Norms and Standards to guide service standard definitions and service norms for various inputs at each level of care. Contrary to the expectation, proper guidance on the linkage of services and continuity of care across the different levels has been inadequate and ineffectively managed. The health sector consequently developed the referral strategy to guide the sector in building an effective referral system that responds to the health needs of the Kenyan population. This will ultimately lead to the realization of the Vision 2030, sustainable development goals and universal health coverage (GOK/MOH, 2014).

The vision 2030 contains the overall government policy on health. The referral strategy reviews the overall strategic framework and policy that governs the roll out and operations of the referral strategy. The Kenya Health Sector Referral Implementation guidelines 2014, indicates that effective referral networks should provide linkages across the different levels of the health system, from the community to the tertiary level. This will ensure that patients receive the full spectrum of care provided by the health system, regardless of the level at which they physically access health care. It addresses clients movement, expertise movement, specimen movement and client parameter movement as key elements. The guideline further outlines the rights' of every person as far as health access is concerned, roles of the MOH in setting guidelines, roles of the County government and the documentation required for the referral to be complete. The Kenyan health system was organized around six levels of care (before devolution), but was further classified into four tires of care based on the scope and complexity of care - after the devolution (Overview of the Health System in Kenya, 2005). (See figure 1 below).

At Tier 1/level; the system is organized in community units (CU) that consists of about 100 households or 5,000 community members. The units are managed by Community Health Workers (CHWs), volunteers who are supervised by the CHEWS. The CHEWs are employed by the Ministry of Health (GOK/MOH, 2016). They are mandated to identify illnesses at the household level, treat minor ailments and initiate referral to higher levels of the health system. The community health units act as an interface between the community and the higher level health units.

Tier 2*;* Consists of primary health care facilities that have dispensaries (level II) and health centers (level III) managed by nurses and clinical officers. This tire provides general outpatient services, antenatal monitoring and perform minor surgeries including deliveries.

Tier 3*;* the third tier consists of county referral facilities which include former primary and secondary hospitals. These provide both inpatient and outpatient services and are staffed by doctors, clinical officers and nurses. Some act as training centers for clinical officers. Kisumu County Referral Hospital and JOOTRH under study falls under this category.

Tier 4*;* the national referral facilities that offer highly specialized care, is used for training purposes and to support research. The government health facilities form the bigger percentage of the existing facilities followed by the Faith based and finally private health facilities (GOK/MOH, 2016).

Global Journal of Health Sciences
ISSN 2519-0210 (Online)
Vol 4, Issue 1, No.2, pp 11 - 31, 2019

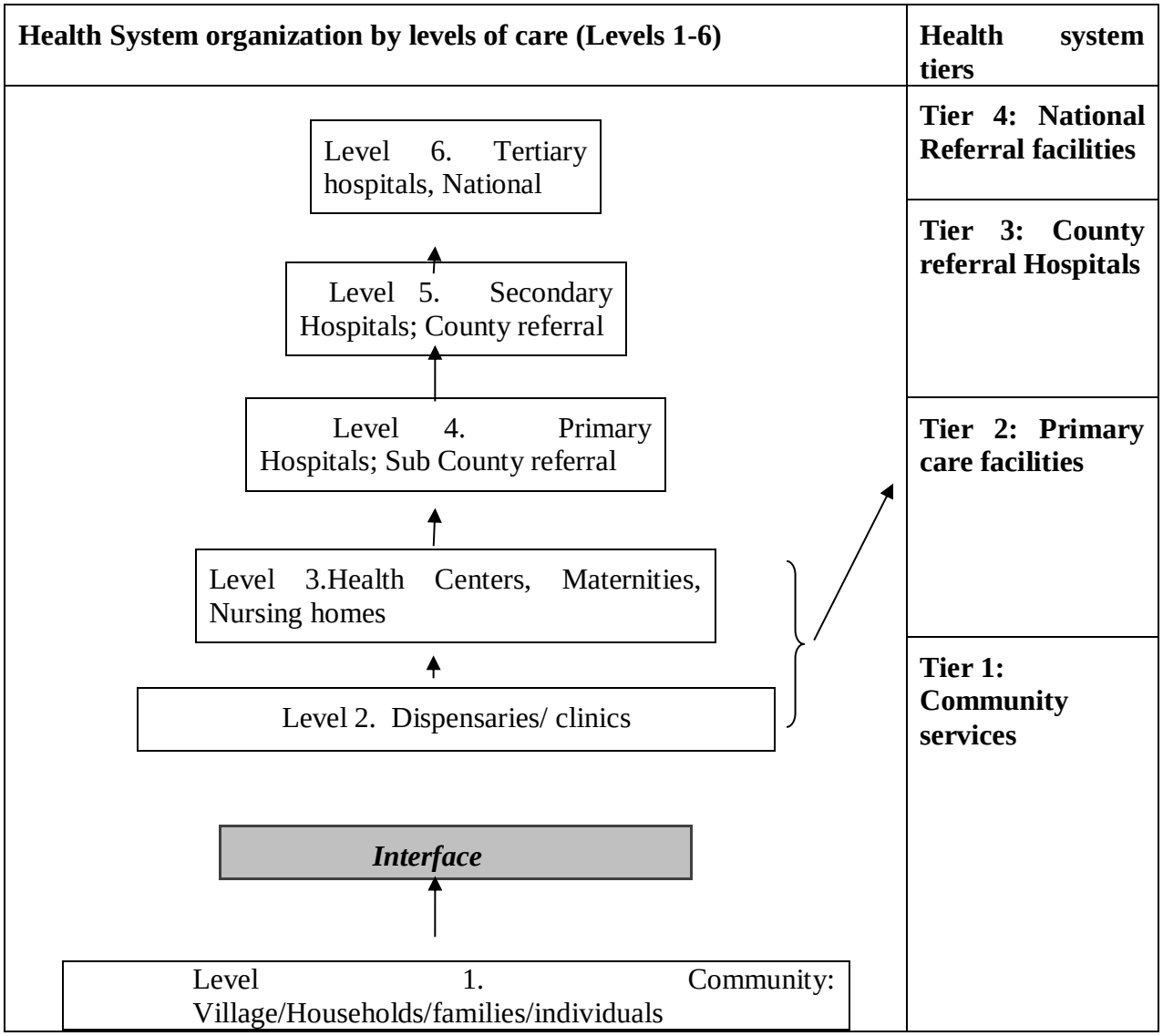

Figure 1: Kenya Health systems tiers and levels of care

Source: (Overview of the Health System in Kenya, 2005)

Kenya's referral services framework provides for movement of clients, expertise movement, Specimen movement and client parameter movement, (GOK/MOH, 2014). The main components of a referral system include; health system service providers, initiating facility and the receiving facility. All these components work hand in hand to ensure that the referral loop is complete and the clients access appropriate care needed.

Among the factors that cause lack of coordination in the implementation of the client include Primary health care centers characteristics, and the receiving facility characteristics.

2.1.2 Funding of the referral system

Both the national and county governments have ultimate accountability for funding the referral strategy and the delivery of health care outcomes. They are therefore responsible for funding, implementing and operating referral health infrastructure. National government is expected to allocate annual budget to be used to fund the implementation of an effective referral process. The county government is also tasked to mobilize funds that go into strengthening referral networks. The two levels of government are expected to stimulate and encourage other players to develop quality referral systems that are standards compliant, scalable and aligned with the national priorities (GOK/MOH, 2016).

The Referral Services Framework

Key elements of a referral system

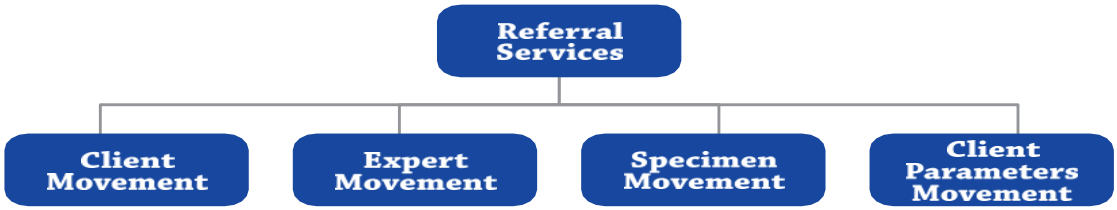

Fig. 2 Elements of a referral system

Source; Kenya Health sector Referral strategy, 2014–2018

Kenya's referral services framework provides for movement of four categories of elements:

Client movement: This is where a client or next of kin seeks an appropriate level of health care where his/her or next of kin's health needs can be addressed in the most efficient and cost-effective way, while taking into account the different choices of facilities available.

Expertise movement: This is where specialized service providers come to the client to a facility where the client needs specialized medical attention. Services can be provided in a number of ways, such as directly to clients, medical camp screening, through conducting out-reaches, screening in a medical camp, or surgeries in remote areas. The movement of expert professionals is normally from higher levels to lower levels. Patients are offered services that they lacked at the facilities where they were admitted without moving horizontally or vertically to another health facility.

Specimen movement: This is where laboratory specimens are moved to specialized facilities, usually for diagnostic purposes. This normally avoids the need to move the client in the health services system but only the specimen are moved to a facility where the tests can be done conveniently.

Client parameter movement: This involves sharing of client information to appropriate levels of the health system for supportive diagnosis or management guidance. The ever evolving and developing e-health trough the scale-up of innovative information and communication technology (ICT) in the health services, will greatly support and facilitate this form of referral,

(Kenya Health Sector Strategy, 2014). This study looks into the challenges facing *client movement* element as shown in fig. 2 above.

Client/patient movement

The form of referral service expected is whereby a client seeks an appropriate level of care at which their health needs are best addressed and this is what most experts equate to a referral system. Normally, client movement referrals from lower levels to higher levels are initiated by Community Health Care Workers from community units or by the clients themselves from households or health facilities. Clients also may be counter-referred by a health care provider from higher-level facilities to primary health care facilities. Client movement or referral can also be done among facilities of the same capacities (horizontal referral) or different capacities - vertical referral, (Kenya Health Sector Strategy, 2014). In a well-functioning referral system, transport for emergency referral are normally done through the use of innovative community methods such as, ground ambulances, water, motorcycles bicycles, or air or depending on the context and the available means of transport. Coordinating all these movements requires use of proper guidelines to ensure successful referrals. Part of the complex process under this process include; initiation of the referral, safe transport, safety in transit, and clinical responsibility. When done well, both the initiating and receiving facilities work in tandem to ensure client is satisfied with the assistance and medical service offered to them at the end of the process, (Kenya Health Sector Strategy, 2014).

2.2 Bypassing of Lower level Health Facilities by Patients.

Some patients have a tendency of bypassing the lower level health facilities and seeking care at the higher level facilities. Some of the possible reasons that may cause clients to bypass lower level facilities include: Lack of clear guidelines for service providers and the general public to guide them, lack of awareness among patients on the where to get health services for different conditions that they are suffering from, low perception on the quality of services offered by the low level health facilities, unavailability of primary health facilities where they reside, system delays where emergency is required on a case, among others, (Kenya Health Sector Strategy, 2014).

Some of the primary reasons why health care providers refer clients who seek emergency or routine care are; to be able to seek expert opinion and report on the client's condition or specimen, also to procure additional or different services for the client, to respond to mass incidents and disaster situations, to send specimens for external quality assurance, to seek admission and management of the client, to meet a client's request, to request use of diagnostic and therapeutic tools and address security issues posed by the patient or facility, (Kenya Health Sector Strategy, 2014).

3.0 METHODOLOGY

A cross sectional study was conducted using a quantitative approach to data collection. The target populations for this study were 1,710 outpatient enrolments per month for the two health facilities health facilities whose ratio of admission stands at 4:5 for KCH and JOOTRH respectively. Three hundred and thirty eight out-patient clients were systemically selected to participate in the study. Data was collected using Individual questionnaire. The collected

quantitative data were coded and analyzed using the SPSS 25.0 Computer program. The quantitative data were then analyzed using the descriptive statistics and logistic regression models.

4.0 RESEARCH FINDINGS

4.1 Demographic Characteristics

Out of the proposed 338 patients sampled, only 304 agreed to participate in the study. 34 patients declined. They cited various reasons as to why they couldn't participate.

Table 1: Socio-Demographic Characteristics of the Respondents

Variable	Category	Frequency (N=304)	Percentage (%)
Gender	Male	120	39.50
	Female	184	60.5
Total		304	100
Age	Mean; Median; Range	37.1; 35; 18-71	
Education level	Primary and Below	69	22.70
	Secondary	128	42.10
	Tertiary	107	35.20
Total		304	100
Marital Status	Single	68	22.40
	Married	196	64.50
	Divorced/Separated/widowed	40	13.20
Total		304	100
Occupation	Employed	222	73.00
	Unemployed	82	27.00
Total		304	100
Name of the facility	JOOTRH	156	51.30
	KDH	148	48.70
Total		304	100
County of Residence	Kisumu	231	76.0
	Siaya	36	11.80
Total	Others	37	12.20
		304	100
Referred	Yes	141	46.40
	Self-Referred	163	53.60
Total		304	100

Table 1 above presents the socio-demographic profiles of the respondents. Majority 184(60.5%) of the respondents were females, males 120(39.5%). This could probably be the case because women seek health care services quite more often than men. The mean age was 37.1 years and ranged from 18-71 years. Most 128(42.1%) of the participants had secondary school level of education, 107(35.2%) had tertiary education, while about 69(23%) had primary and below level of education. This indicates that the majority of the people interviewed was of middle age and had some sort of education which can confirm that they clearly understood the objectives of the study and the questions asked.

Majority of the respondents were married 196 (63.8%), 68 (22.4%) were single while 40 (13.2%) were either separated/ divorced or widowed. 222(73%) of the respondents were employed and 82 (27%) were unemployed. The married could have contributed to the bigger number of the group interviewed probably because their spouses could assist them with resources to enable them easily access medical care. Most 156 (51.3%) of the respondents were interviewed at JOOTRH and 148 (48.7%) from Kisumu County Referral Hospital. Majority of the respondents 231 (76%) were residents of Kisumu county, 11.8% from Siaya, while 12.2% resided in other counties. Distance from patients' homes to the two facilities could have contributed to this.

4.2 Primary Health Facility Characteristics

The study sought to establish the influence of the primary health facility characteristics on a functional referral system among the patients who accessed outpatient care at the JOOTRH and Kisumu County Referral Hospital.

The primary health centres characteristics that were used to examine the determinants of a functional referral system include; geographical access to the primary health facility by the patients, Patients level of satisfaction with the primary health facilities and services, availability of drugs and services and health care worker attitudes towards patients at the low level facilities. The breakdowns of analysis are indicated below.

Table 2: Primary Health Facility Characteristics

Primary Health Facility Characteristics	N	Mean	SD
1. Fare to PHC affordable	304	1.89	0.62
2. PHC always open and accessible	304	3.13	1.1
3. Waiting time is short at the PHC	304	3.61	1.05
4.Drugs are always available in PHC	304	2.47	1.37
5. Lab tests always available at PHC	304	2.01	1.3
6.Primary Health center is very clean	304	2.61	0.99
7. I receive all services at the PHC	304	2.4	2.44
8.Provider gives required info at the PHC	304	2.81	0.9
9.PHC staff always respectful	304	2.7	1.13
Totals	304	2.62	1.2

Inability to afford fare to the nearby primary health facilities by the patients was cited as one of the impediments towards access to the primary health facilities, Mean 1.89 (S.D. 0.62). This probably contributed to bypassing tendencies whereby patients would walk into a nearest referral health facility which doesn't cost him/ her lot of money on fares to access. Systemic challenges such as high cost of accessing care in a local primary health care centre informs health seeking behavior and choice amongst women interviewed in a study conducted in Tanzania (Kohi, Mselle, Dol, & Aston, 2018).

Waiting time at the Primary Health Facilities was indicated to be short by the majority of the patients interviewed. (Mean 3.61, S.D 1.05). This was the only attribute for which the patients were in agreement with of which could have been as a result of very few people seeking health

care services at these primary health facilities, hence no congestion experienced. This is in contrast with a similar study conducted with Rodger et al 2007 which stated that shortening patient waiting times makes them more satisfied with the service delivery in that particular facility hence high patient attendance (Anderson, Camacho, & Balkrishnan, 2007). Majority of the patients interviewed also concurred that the primary health facilities are always open and accessible (Mean 3.13, S.D 1.1).

As indicated in Table 2 above, majority of the patients indicated that drugs were fairly not available in the primary health facilities near them, (Mean 2.47, S.D 1.47). Unavailability of the drugs at the primary health facilities could have pushed the patients to seek medical care at the higher level health facilities. This finding is in agreement with a similar study conducted in five countries; Kenya, Ghana, Rwanda, Tanzania and Uganda which revealed that 18%- 41% of the primary health care centres lacked drugs, running water and electricity (Hsia, Mbembati, Macfarlane & Kruk, 2011). Many interviewed could not also afford access to laboratory tests recommended to them at the primary health facilities by the health care physicians, (Mean 2.01 S.D 1.3). Lack of laboratory tests affected the access to care at the primary health facility by the patients. Many of them opted to seek care at a referral health facility where they believed these tests could get all the tests required. This finding is supported by a study conducted by Opon et al (2016) that indicates that availability of medical equipments and other Infrastructure directly influences availability of service, hence, patient satisfaction. It is also evident that the facilities lack maintenance systems for the existing medical infrastructure e.g laboratory machines leading to lack of the basic services that require medical equipment (Opon, 2016).

As far as patient satisfaction is concerned, few patients reported that the health facilities where they received medical care was clean (Mean 2.61, SD 0.99) and only a few could access all the services that they required at these facilities, (Mean 2.4, SD 2.44). This finding is similar to a study conducted by Otieno and David in Homa bay that indicated that majority of the clients were as well satisfied with the reception they got from the clinical staff at the facility and the facility itself which greatly influenced their decision on whether they will continue to access care at the facility. When Patients receive low quality services, their health seeking behavior reduces (Otieno & Macharia, 2014).

Most health care providers at the Primary health facilities were reported not to be giving information to the patients on the referral guidelines at the point of service, (Mean 2.81, SD 0.9). This is probably because the healthcare providers had not received sensitizations on the referral policy to guide their work in advising the patients appropriately. This further means that many patients do not get a chance to understand the required steps that needs to be taken as far as referral is concerned. A good proportion of the patients interviewed also cited respect accorded to them by the health care providers as one of the influencing factors on the receiving care at a primary care facility. Half of the patients interviewed indicted that the respect accorded to them by the providers influenced their decision to self-refer. (Mean 2.9, SD 1.4). This means that the respect accorded to a patient by the Health Care provider greatly influenced their decision to seek care at that particular facility next time. A similar study conducted in Malawi indicated that the relationship between the patient and the health care worker was identified as one of the influencing factors on mothers attending ante natal care clinics in two referrals hospital. The study further indicated that some health workers demean them hence informs their decision on which facility to visit, *(Roberts et al., 2015)*. From the primary health facility characteristics, it

can therefore be said that the availability of drugs, laboratory tests and other key services majorly influenced the patients decision on whether they would access the service at that particular health facility or not.

4.3 Receiving Health Facility Characteristics

The study sought to establish the influence of the Receiving Health Facility characteristics on the functional referral system among the patients who accessed outpatient care at the JOOTRH and Kisumu County Referral Hospital. The Referral health characteristics that were used to examine the determinants of functional referral system include; affordability of fares to access the facility, close proximity to the referral health facility, availability of preferred services providers, confidential level with the service providers, availability of medicine, waiting time to be seen by a physician, infrastructure status and convenience of receiving care as listed below.

Table 3: Receiving Facility Characteristics

Receiving Facility Characteristics	N	Mean	SD
1.It cost me little fare to come to this referral facility	304	2.9	0.85
2.Availability of provider I want guides my decision on which facility to visit	304	4.11	1.4
3. Have confidence in providers working at the referral facility	304	3.36	1.1
4.Waiting time at this Referral facility short	304	1.66	0.58
5.Availability of medicine attracts me to this referral facility	304	3.77	0.9
6.Infrastructure attracts me to this referral facility	304	2.38	1.25
7.I'm attracted to quality of service in this facility	304	3.33	1.66
8. I got a lab order that brought me to this referral facility	304	2.21	1.15
Total	304	2.96	1.11

Availability of the patients preferred provider came up as a very strong influencing factor amongst the clients interviewed. (Mean 4.11, S.D 1.04). That is, the patients might have the view that there are better services offered by highly trained Health Care providers as compared to the primary health facilities. This is similar to a study conducted in China by Jin et al (2017) found out that, availability of preferred health provider tend to play a part in patients' decision to seek care. The study revealed that with the increased availability of specialized physicians at the health facilities that dealt with Diabetes mellitus, the number of patients seeking care in those health facilities greatly increased (Jin et al. 2017).

Availability of drugs at the high level institution also influenced majority of the clients' decision to access medical care at the apex health facilities, (Mean 3.77, S.D. 0.9) as shown in the table above. Clients had the perception that the primary health facilities are not well equipped with drugs and thereby opted to seek medical care at the higher level facilities. This is supported by a study conducted Saleh and Ibrahim that stated that by poor distribution at the level of local health facilities and inefficiencies in the supply and distribution chain and insufficient availability of medicines in appropriate dosage forms for children as found in other studies influences patients decision to seek care at higher level facilities (Saleh and Ibrahim, 2005).

Confidence level in the health care workers at the referral institutions by the patients were also cited as one of the factors that nearly influenced their decision to seek health care at the two high level referral institutions, (Mean, 3.36, S.D. 1.11). This would be case probably because of the

better infrastructure and equipments that these providers can easily access to improve service delivery. Desire for quality service was identified as one of the major reasons why 35.7% of the patients interviewed self-referred themselves to a higher level health facility in a study conducted in one of the public referral health facilities in Western Nigeria (Okoli, Obembe, Osungbade, Adeniji, & Adewole, 2017).

The patients however disagreed that short waiting time at the referral facilities influenced their choice for the high level facilities. (Mean 1.66, S.D 0.58). Majority was of the view that the waiting time was long but would still visit the referral health facility ahead of the primary health facility. This was in contrast to a similar study that revealed that time factor was an influencing factor was quoted in a similar study conducted in Saudi Arabia that looked at the aspects that informs a patient's decision while choosing a facility to visit. The study showed that short waiting time at the facility attracted more clients (Al-Doghaither, Abdelrhman, Saeed, & Magzoub, 2003).

Little cost of fare to the referral health facility came out as an influencing factor on the patients' choice of health facility. (Mean 2.9, S.D. 0.85). This was probably due to the patients residence next to a referral facility. The state of the infrastructure at the referral health institution was interestingly not stated by majority as an influencing factor. (Mean 2.38, S.D 1.25).

From this independent variable, receiving facility characteristics, it can be deduced that availability of preferred providers, sufficient medicine and confidence in the quality of services offered at the high level health facilities were the key attributes that influenced a functional referral system.

4.4 Proximity to a Health Facility

The study sought to establish the influence of the patients' proximity to a health facility on the functional referral system among the patients who accessed outpatient care at the JOOTRH and Kisumu County Referral Hospital. The proximity to a health facility characteristics that were used to examine the determinants of functional referral system include; location of the nearest Primary Health Facility, distance to the PHC, Distance to the nearest referral Health facility and convenience of receiving care at the referral health facility as listed below.

Table 4: Proximity to a Health Facility

Proximity to a health facility	Total	Mean	SD
1.There is a PHC near my home	304	1.88	0.74
2. PHC 5km from my home	304	2.11	0.8
3.This is the closest referral facility to where I stay	304	3.72	0.9
4.Accessing care at the referral center more convenient	304	3.1	1.39
Total	304	2.70	0.95

Majority of the patients interviewed also reported that close proximity to the referral health facility influenced their decision to visit the high level facilities, Mean (3.72, S.D. 1.20) as shown in Table 4 above. That means the main cause of them by passing the primary health facility was probably because the Referral Health facility was situated nearer to them as

compared to the receiving health facility. This finding is supported by a similar study conducted by NoorAli et al 1999, which mentioned proximity to a health facility as one of the factors that influences the physical access to health care, including distance from the health facility, availability of transportation, and the condition of the roads. The distance separating potential patients from the nearest health facility is an important barrier to its use, particularly in rural areas (NoorAli, Luby, & Rahbar, 1999).

Most of people interviewed stated that most primary health facilities were built far away from where they stay, Mean 1.88 (S.D. 0.74). This greatly supports why the patients opted to seek care at the Referral health facility as opposed to a primary health facility. A previous study conducted in Homa bay County reported that 58% of the patients interviewed had traveled over a distance of 5 kilometres to access care and 18% had covered over 10 kilometres. This had greatly influenced their choice of health facility to visit (Otieno & Macharia, 2014).

Convenience of receiving care at the referral health facility was also stated some of the patients interviewed (Mean 3.10 S.D 1.39) as an influencing factor. That is, some patients sought care at the receiving health facility out of convenience.

4.5 Functional Referral system

Functional referral system as the dependent variable was influenced by the independent variables listed above. A functional referral system was measured based on the patients the patients being issued with a referral note and being advised appropriately by the Health Care Workers (Both at the primary health care facilities and Receiving health Facilities) on the importance of utilizing the existing referral guides.

Table 5: Functional referral system Characteristics

Functional referral facility characteristics	N	Mean	SD
1. Always have a letter to referral facility?	304	3.03	0.95
2. Provider at referral facility asked for my referral letter when met	304	2.01	1.3
3.Patient know that they should first visit PHC	304	2.5	0.76
4.Medical staff at referral facility advised me to always come with referral letter	304	2.73	1.34
5.Not paying if I have a referral letter	304	2.27	0.79
Total	304	2.50	1.02

A good proportion of the patients interviewed knew that it was always a good practice to be issued with a referral letter to access services at the referral health facility, Mean 3.03 (S.D. 0.95). In as much as this score didn't reach the minimal agreement score of 3.4, it shows that quite a number of patients were still not aware of the procedure that requires them to seek care at the primary health facility before visiting a referral health facility. The Kenya Health sector Strategy outlines lack of awareness among patients on the where to get health services for different conditions that they are suffering from and procedures that should be followed as one of the challenges facing health referral system (Kenya Health Sector Strategy, 2014).

Patients opinions were also low on whether they should first visit a primary health facility before they come to get services at the referral facility, (Mean 2.5., SD 0.76). This is reflection of a similar challenges explained above that surrounds lack of proper knowledge on the referral

policies. This is a true reflection of a similar study conducted in Nigeria at University of Ilorin hospital which showed that, only 7.1% of the clients were referred to the health facility by a clinician. The rest 92.9% reported to the hospital directly (Abodunrin et al. 2010).

As far as health care workers guidance on referral ladder to the patients is concerned, most of the patients indicated that they were not advised by the physician at the referral health facility to always come with a referral letter whenever they accessed care at these high level facilities. (Mean 2.73, S.D. 1.05). This means that health care providers are equally not sharing the benefits of using the right referral procedures with their patients. A good number of patients were not aware that they were not required to pay extra fee whenever they present a referral letter to the tertiary level physicians. (Mean 2.27, SD 0.79).

4.6 Correlation Analysis between Independent and dependent variables

This analysis aimed at determining whether each of the predictor variables in this study; Primary health care facilities characteristics, Receiving health facility characteristics and proximity to a Health influence the functional Referral System which is a dependent variable. The findings for each variable in the study were given by the correlation coefficient (r) and its corresponding P-value. A p-value of less than 0.05 (i.e. *-Correlation is significant at P<0.05;) shows that the influence of the independent variable on the dependent variable was statistically significant.

Table 6: Correlation between Functional referral systems, Primary Health Facility Characteristics and Receiving Facility Characteristics

Spearman Correlation

		Functional	Primary HC	Receiving Facility	Proximity
Functional referral system	Correlation Coefficient	1.000			
	Sig. (2-tailed)				
	N	304			
Primary Health Characteristics	Correlation Coefficient	.474**	1.000		
	Sig. (2-tailed)	0.000			
	N	304	304		
Receiving facility characteristics	Correlation Coefficient	.475**	-0.016	1.000	
	Sig. (2-tailed)	0.000	0.781		
	N	304	304	304	
Proximity to a Health Facility	Correlation Coefficient	-.137*	0.074	0.023	1.000
	Sig. (2-tailed)	0.017	0.200	0.691	
	N	304	304	304	304
	N	304	304	304	304

Note: **. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed)

The correlational analysis results of this study revealed that there is a positive significant correlation between primary health facility characteristics (r = 0.474**; P<0.000) to the functional referral system as shown in Table 6 above. This implies that a positive growth in the scores of attributes that influences a functional referral system improves the referral process. The patients scored poorly on the availability of drugs at the primary health facility, an improved perception on the availability of drugs at these low level facilities will greatly improve the functioning of a referral system since many clients wont by-pass these facilities. Saleh et al (2005) cited poor availability and erratic supply of medicines in the low government health facilities and inefficiencies in the supply and distribution chain as something very common in the developing Countries (Saleh & Ibrahim, 2005).

The study further revealed that there is also a positive significant correlation between receiving facility characteristics (r = 0.475**; P<0.000) to the functional referral system as shown in Table 6 above. This implies that any improvement on the receiving health facility score positively affects a functional referral system. Proximity to a Health Facility (r = -.137*; P<0.017) was also negatively correlated to the functional referral system. That means the higher the score on the agreement of patients living nearer the Referral health facility, the more negatively it affects the required and right functioning of a referral system. Most patients will by-pass the primary health facilities just because the Receiving health facility are located nearer to them as compared to the primary health facilities.

Proportion of Self – Referred Patients

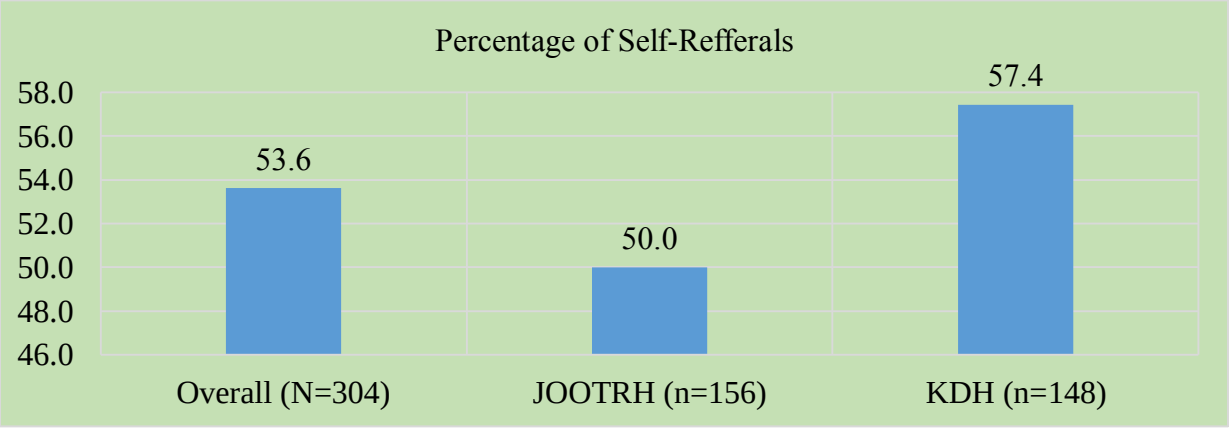

Figure 1: Percentage of Self-referrals

A total of 163(53.6%) of the patients interviewed were self-referred and majority of them sought medical care at the Kisumu County Referral Hospital 85(57.4%), as shown in figure 1 above. This implies that quite a number of patients by passed the primary health facility to seek care at a higher level. Similar study conducted in Muhimbili National Referral Hospital in Dar es salaam showed that 72.5% of the patients seen were self- referrals (Simba, Mbembati, Museru, & Lema, 2008).

4.7 Multivariate Analysis of Factors Associated with A Functional Referral systems

The main model under investigation in this study intended to establish combined influences of four key variables (Primary health care facilities characteristics, Referral facilities characteristics and proximity to referral health facilities) on the functional referral system at the Jaramogi Oginga Odinga Referral Hospital and Kisumu County Referral Hospital. The model is expressed as;

$$Logit\ (P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_p X_p$$

Where; Y = Functional referral system

X_1 = Primary Health Care Centre Characteristics

X_2 = Receiving Facility Characteristics

X_3 = proximity to a health facility

and $\beta_0, \ldots, \beta_p$: - are the coefficients of the regression model.

$X_1, \ldots, X_p$: - Primary Health Care Centre Characteristics(X_1); Receiving Facility Characteristics (X_2) and proximity to a health facility (X_3).

ε = error term, was the basis under which the four specific objectives outlined in Chapter One were set.

Table 7: Functional referral system: ANOVA[a]

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.891	4	18.473	71.074	.000[b]
	Residual	77.713	299	0.261		
	Total	151.604	303			

a. Dependent Variable: Functional Referral system, S1

b. Predictors: (Constant), Proximity_X_4, Recieving_X_3, PHC_X_1,

A multiple regression analysis was performed on the four key factors (Primary health care facilities characteristics, Referral facilities characteristics and proximity to referral health facilities) to test their combined influence on functional referral system. The regression output in Table 7, contains all the four variables in this study was found to be valid ($F_{(4,229)} = 71.074$, $P < .000$) meaning the four predictor variables in this study are good in explaining functional referral system, patient perspective in JOORTH and Kisumu County Referral Hospital.

Table 8: Functional referral system: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.698[a]	0.487	0.481	0.50981

a. Predictors: (Constant), Proximity_X_4, Recieving_X_3, PHC_X_1,

Global Journal of Health Sciences
ISSN 2519-0210 (Online)
Vol 4, Issue 1, No.2, pp 11 - 31, 2019

The results of regression analysis in Table 8 indicates that 48.7% of the total variations in functional referral system can be explained by the four factors under investigation in this study (R-squared) = 0.487). The adjusted R-square of 0.481 indicates that if the value of the constant is not significant, the four factors explain 48.1% of the total variations. The remaining 51.9% of the variations is explained by factors not included in this study. The standard error of estimate 0.50981 shows the average deviation of the independent variables from the line of best fit.

Table 9: Functional referral system: Regression Weights[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.51	0.288		1.76	0.860
	Primary HC_X1	0.769	0.060	0.535	12.801	0.000
	Recieving_X2	0.439	0.043	0.425	10.239	0.000
	Proximity_X3	-0.249	0.066	-0.156	-3.755	0.000

a. Dependent Variable: Functional referral system

The study results of the multiple regressions in Table 9 above, shows that the three factors which influence functional referral system are; Primary health care facilities characteristics, Receiving facilities characteristics and proximity to referral health facilities. In details, the study revealed that Primary health Care facility characteristics (β_1 = .535, *P* = .0000) and Receiving facility characteristics (β_3 = .425, *P* =.000) significantly and positively influences a functional referral system. Proximity to a health facility (β_4 = .-0.156, *P* < .000) is significant but negatively influences functional referral system at the JOOTRH and Kisumu County Referral Hospitals. However, patient characteristic (education) was found to be statistically insignificant in influencing functional referral system (β3 = 0.055, *P* =.193).

The constant (β_0) is also positive and but not significant (β_0 = 0.51, *P* = .860). The constant (β_0 = 0.51, *P* = .860) indicates that functional referral system will always exist at a certain minimum even without the four factors (Primary health care facilities characteristics, Referral facilities characteristics and proximity to referral health facilities) under investigation in this study.

The Coefficient of Primary health Care facility characteristics (β_1 = .535, *P* = .0000) shows that a unit increase in primary health care facility perception index leads to an increase in functional referral facility index by .535 which is also statistically significant (*P* =.000). From the descriptive analysis, some of the factors that greatly influenced a functional referral system include; availability of drugs at the primary health facility, cleanliness of the health facility, quality of care, and availability of laboratory equipments. Hsia et al, 2012 in a similar study carried out in five countries; Kenya, Ghana, Rwanda, Tanzania and Uganda revealed that only 18% to 41% of the facilities had unexpired drugs and current inventories, (Hsia et al., 2012).

The coefficient of Receiving Health facility Characteristics (β_3 = .425, *P* =.000) indicates that a unit increase in the receiving health facility characteristics index leads to an increase in functional referral system index by .425 which is statistically significant (*P* < .000). Many patients tend to be attracted to the availability of almost all forms of resources at higher facilities

as compared to low level facilities. These findings are similar to a study that revealed that many patients believe that the receiving health facilities have better infrastructure, trained personnel, drugs, hygiene as compared to the primary health care facilities. Desire for quality service was identified as one of the major reasons why 35.7% of the patients interviewed self-referred themselves in a study conducted in one of the public referral health facilities in Western Nigeria (Okoli et al., 2017). Another study also revealed that the availability of preferred health provider tend to play a part in patients' decision to seek care. A study conducted in China by Jin and other researchers on the Impact of health workforce availability on health care seeking behavior of patients with diabetes mellitus in China, found that with the increased availability of specialized physicians at the health facilities that dealt with Diabetes mellitus, the number of patients seeking care in those health facilities greatly increased (Jin et al., 2017).

The coefficient of Proximity to a health facility (β_4 =.-0.156, P < .000) indicates that proximity to a health facility and functional referral system are inversely related. This means that a unit increase in proximity to a health facility index reduces the functional referral system index by .163 which is statistically significant (P= .000). This can be interpreted that the tendency of a patient to live near a referral health facility may easily prompt them to bypass a primary health facility and seek care in a higher level facility which is nearby. This is in line with a similar study conducted in Homa bay by Otieno and David that indicated that majority of the clients interviewed spent an average of three hours to access all the medical care they had come to receive. That greatly influenced their decision on whether they will continue accessing care at that particular facility or not, due to distance (Otieno & Macharia, 2012.).

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The study revealed that primary health facility characteristics influence a functional referral system. Some of these factors that affected a functional referral system include; Unavailability of drugs (Mean 2.47, S.D 1.47), Lack of laboratory tests services (Mean 2.01, S.D 1.3), High fares to a primary health facility (Mean 1.89, S.D 0.62) and inability to receive all the key services (Mean 2.40, S.D 2.44). Bivariate analysis revealed that there is a positive significant correlation between primary health facility characteristics (r = 0.474**; P<0.000) to the functional referral system. Further multivariate analysis revealed that there was also a significant relationship between primary health facility characteristics and the functional referral system. (β_1 = .535, P = .0000).

The study revealed that receiving health facility characteristics influence a functional referral system. Some of the factors mentioned that affected a functional referral system include; Availability of the preferred health provider was found to be one of the major influencing factors on a functional referral system. (Mean 4.11, S.D 1.4), Better quality care was also found out to be an influencing factor on self-referral tendencies amongst the patients interviewed. (Mean 3.77, SD 0.96) moderately high confidence level in referral health providers by the patients also came out as an influencing factor on a functional referral system. (Mean 3.36, SD 1.11). Bivariate analysis revealed that there is a positive significant correlation between receiving facility characteristics (r = 0.475**; P<0.000) to a functional referral system. Further

Multivariate analysis also revealed a significant association between referral health facility characteristics and a functional referral system, (β_3 = .425, *P* =.000).

Proximity to a health facility determined a functional referral system. Some of the factors mentioned that affected a functional referral system include; Distance to a nearby primary health facilities from where the patients stay, (Mean 1.88, S.D. 0.74), close proximity to the referral health facility hence influenced their decision to visit the high level facilities, Mean (3.72, S.D. 1.20) and Convenience of receiving care at the referral health facility was also stated most of the patients interviewed (Mean 3.10 S.D 1.39) as an influencing factor. Bivariate analysis revealed that, Proximity to a Health Facility (*r* = -.137*; P<0.017) was also negatively correlated to a functional referral system. Majority of the patients interviewed reported that close proximity to the referral health facility influenced their decision to visit the high level facilities, Mean 3.33 (S.D. 1.20). Multivariate analysis revealed there was a negative significant association between referral health facility characteristics and a functional referral system, (β_4 =.-0.156, *P* < .000).

5.2 Conclusion

From the results, it can be stated that primary health facility characteristics have influence on the functional referral system. These factors include; unavailability of drugs at the primary health facilities, lack of essential services such as laboratory tests at the primary health facilities, low quality of services at the primary health facilities and cleanliness of the facility as a whole. Primary health care centre characteristics therefore significantly influence a functional referral system. Receiving health characteristics have influence on the functional referral system. The factors that influence this are; Availability of preferred medical providers, better quality of services offered at the referral health facility which attracts more patients to these facilities as compared to the primary health care centres and high confidence level of patients on the Referral facility Health Providers. Referral health facility characteristics therefore significantly influence a functional referral system. Location of the primary health care facility influences the patients' decision to self-refer themselves hence affecting a functional referral system. When a primary health facility is located far away from the patient, the patient will easily access the Receiving facility without following the due procedure. Convenience of accessing the nearby health facility also came out strongly as an influencing factor.

5.3 Recommendation

The County government of Kisumu should supply adequate drugs and equipments to attract more patients seeking medical care services to the primary level facilities. Quality of services offered and general cleanliness at the primary health facilities should also be improved to boost patients confidence in them. More sensitization sessions should be directed at the Receiving Health Facility workers on the need to educate the patients who have accessed care at these facilities on the benefits of using proper referral procedures. The county government should also mobilize more funds to establish some primary health facilities to communities who are living in areas with no primary health facility nearby.

References

Abodunrin, O., Akande, T., & Osagbemi, G. (2010). Awareness and perception toward referral in health care: A study of adult residents in Ilorin, Nigeria. *Annals of African Medicine*, *9*(3), 176.

Al-Doghaither, A. H., Abdelrhman, B. M., Saeed, A. A. W., & Magzoub, M. E. M. A. (2003). Factors influencing patient choice of hospitals in Riyadh, Saudi Arabia. *Journal of the Royal Society for the Promotion of Health*, *123*(2), 105–109.

Anderson, R. T., Camacho, F. T., & Balkrishnan, R. (2007). Willing to wait?: The influence of patient wait time on satisfaction with primary care. *BMC Health Services Research*, *7*(1), 31.

Auditors report. (n.d.). Performance Audit Report of the Auditor-General Specialized Healthcare Delivery at Kenyatta National Hospital - Health Publications.

Ayub Medical College., Y., Shaikh, B. T., & Kumar, R. (1988). *Journal of Ayub Medical College, Abbottabad : JAMC. Journal of Ayub Medical College Abbottabad* (Vol. 23). Ayub Medical College. Retrieved from http://jamc.ayubmed.edu.pk/index.php/jamc/article/view/2628

Chapter 2 Overview of the Health System in Kenya. (2005.). Retrieved March 9, 2019, from https://www.researchgate.net/publication/265099088_Chapter_2_Overview_of_the_Health_System_in_Kenya

GOK/MOH. (2016). Kenya Health sector referral implementation guidelines 2014 1st edition, 1–44.

Hsia, R. Y., Mbembati, N. A., Macfarlane, S., & Kruk, M. E. (2012). Access to emergency and surgical care in sub-Saharan Africa: the infrastructure gap. *Health Policy and Planning*, *27*(3), 234–244.

KENYA HEALTH SECTOR REFERRAL STRATEGY - Health Publications. (n.d.). Retrieved March 9, 2019,

Kohi, T. W., Mselle, L. T., Dol, J., & Aston, M. (2018). When, where and who? Accessing health facility delivery care from the perspective of women and men in Tanzania: a qualitative study. *BMC Health Services Research*, *18*(1), 564.

NoorAli, R., Luby, S., & Rahbar, M. H. (1999). Does use of a government service depend on distance from the health facility? *Health Policy and Planning*, *14*(2), 191–197.

Okoli, H., Obembe, T., Osungbade, K., Adeniji, F., & Adewole, D. (2017). Self-referral patterns among federal civil servants in oyo state, South-Western Nigeria. *The Pan African Medical Journal*, *26*, 105.

Opon, S. O. (2016). Provision of essential health package in public hospitals: a case of Homabay County hospitals, Kenya. *Pan African Medical Journal*, *24*.

Otieno, S. O., & Macharia, D. (n.d.). Factors Influencing Utilization of Health Services in Kenya: The Case of Homa Bay County. *International Journal of Public Health Science (IJPHS)*, *3*.

Roberts, J., Sealy, D., Marshak, H. H., Manda-Taylor, L., Gleason, P., & Mataya, R. (2015). The patient-provider relationship and antenatal care uptake at two referral hospitals in Malawi: A qualitative study. *Malawi Medical Journal : The Journal of Medical Association of Malawi*, *27*(4), 145–150.

Simba, D. O., Mbembati, N. a a, Museru, L. M., & Lema, L. E. K. (2008). Referral pattern of

patients received at the national referral hospital: challenges in low income countries. *East African Journal of Public Health*, *5*(1), 6–9.

The WHO health system building blocks framework. Source: WHO 2007 1. | Download Scientific Diagram. (n.d.). Retrieved March 9, 2019,

WHO | The World Health Report 2008 - primary Health Care (Now More Than Ever). (2013). *WHO*.