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Analysis of health seeking behaviour on effective delivery of health services under capitation scheme in Kenya

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ABSTRACT

Under capitation health scheme, a member freely selects a health facility from which to seek health services. There is no restriction of the number of times a member seeks health services from the facility within the contract period. This has affected delivery of health service under capitation contracting. This paper documents a quantitative analysis of the effect of health seeking behaviour on effective delivery of health services. Since human behaviour is assumed to be a natural phenomena, a philosophical view of positivism was adopted in this research. Accordingly, a scientific approach was used to deduce the influence of health seeking behaviour on the metrics of effectiveness. Out of 1152 health facilities accredited to offer primary healthcare in Kenya, data was collected from a sample of 297 health units using closed ended questionnaires. Logit regression analysis on the data revealed that congestion in out-patient department had a negative effect on quality of health services delivered but a positive effect on accessibility and affordability of the services. Increased frequency of consultation had a negative effect on all the three measures of effectiveness; quality, accessibility and affordability of health service delivery. Corresponding odds ratios were 0.173, 1.105 and 1.295 respectively.

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Introduction

Delivery of quality, accessible and affordable health services in developing economies is a vexing problem and is normally frustrated by the high cost of health care (Moreno-Serra & Smith, 2012). The global economy expenditure on health as of financial year 2014 stood at 8.4% with the low-income countries spending 7.3% (IHME, 2016). In addition, report by WHO (2010) document that total health expenditure by the African economies as of 2010 was US\$ 135 per capita. Most of the funds are domestically generated however, various multilateral development agencies supplement the funds to support special programs such as malaria, tuberculosis, HIV/AIDS, maternal, newborn, and child health. In 2016, the total external aid extended to low-income countries was \$37.6 billion (IHME, 2016). While governments of most developing economies are employing initiatives that ensure health services delivered to citizens are effective, at individual level, the extend of utilization of health services is depended on many factors such as cost of healthcare and the purchasing power of households which on the other hand is influencing health seeking behavior (Boor, 2003).

In pursuit to provide universal healthcare, some of the African economies have implemented capitation contracting with the healthcare providers to finance delivery of health services. (Ataguba & Akazili, 2010; Allard, Jelovac, & Léger, 2014; Saksena, & Antunes, 2011). In Nigeria healthcare services are procured through National Health Insurance Scheme (NHIS). The services are provided by both public and private healthcare providers who are reimbursed by Health Management Organizations (HMOs) on capitation payment arrangement or fee for service arrangement (Abodunrin, Bamidele, Olugbenga-Bello, & Parakoyi, 2010). Ghana's capitation scheme uses a mix of payment systems to reimburse healthcare providers for services rendered. These include capitation

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for primary healthcare and other out-patient services, fees-for-service for cost of medicines, and diagnostic related groupings (DRGs) for secondary and tertiary healthcare services (Adei, Mireku, & Sarfo, 2015). South Africa is currently on the process of major restructuring of health systems. The key objective of the government is to implement capitation contracting to enhance financing of universal health service that promote equity access of healthcare by all citizens (Ataguba & Akazili, 2010).

In the East African Community Countries, healthcare financing remains significantly under-funded far below the Abuja target of 15% of the annual GDP (Yamin, & Maleche, 2017). Kenya's expenditure on healthcare financing has remained very low between; 6.1% FY2012/2013 declining to 3.7% FY2016/2017. Despite the low levels of health financing, Kenya government remains committed to providing universal healthcare to the citizens through capitation contracting with healthcare providers. The scheme was implemented in FY 2011/2012 with objective of delivering quality, accessible and affordable health services to citizens. The Kenyan model of capitation is open to healthcare providers in both profit-making and non-profit making healthcare providers operating small clinics or large institutions. It pays a prospectively fixed amount of Kenya shilling 100 (US\$ 1.0) per-member-per-months to only healthcare providers who sign up the capitation contract. The payment is paid quarterly calculated with no risk adjustments such as in the event the member may require to take an expensive prescription or undergo an expensive procedure as an outpatient. Accordingly, healthcare providers absorb all the costs associated with services provided to the member as per their needs and benefit from the surplus (Kipyegon & Nyarombe, 2015).

Members covered under capitation are required to choose their preferred healthcare provider hence the number of contributors who have chosen a healthcare provider determine the amount of money that the healthcare provider is paid. Comparing developing and the developed economies in terms of health seeking behavior, in the developing countries, factors that determine patients' preference of a particular health service provider and utilization of health services are depended on cultural differences which include concepts and interpretation of illness, geographical location, ability to pay provider out-of-pocket, members' perceived quality of healthcare offered by provider, having an insurance cover and recommendation by friends and relatives (Pirani, Ali, Allana, & Ismail, 2015; Amaghionyeodiwe, 2008; Abodunrin *et al.*, 2010).

Capitation scheme restricts members under cover to choose only one healthcare provider at a specific period but the scheme does not provide upper and lower limits of members who should be allowed to select a specific provider at a point in time. This implies that it is a Laissez-faire system of operation (Kuunibe & Dary, 2012). The action undertaken by individual members who perceive themselves to have a health problem or to be sick defines their health seeking behavior. Accordingly, in pursuit of members under capitation finding appropriate remedy for their health problem, some healthcare providers experience high fluctuations of members congesting in outpatient department. This reaction affects planning and budgeting and ultimately quality of service delivered to the members (Saha, Taggart, Komaromy & Bindman, 2000). Nevertheless, the number of capitated members to a healthcare provider can facilitates utilization of economies of scale which enhances affordability and accessibility of health services (Sun, 2006).

Literature Review

Theoretical Framework

Health seeking behavior has for long attracted researchers to understand what influences people to behave differently in relation to their health. Previous studies conducted globally have developed a number of models on health seeking behaviour and utilization of health services to assist in predicting possible behaviour patterns under certain health service delivery arrangements. Young's (1918) model is a decision-making framework that describes the process that individual undertake when seeking help during illness and the factors that may hinder initial choice of care. Fabrega (1974) model of illness assumes that people use the principle of cost-benefit in evaluating best courses of action when seeking health services. Dingwall (1976) model focuses on how we react to disturbances in our body. It is based on individual choice and assumes that individuals are autonomous in making decisions on where to seek healthcare. Andersen (1995) model is widely used in health services researches. The model asserts that factors that influence utilization of health resources are: healthcare financing method, population characteristics, and the external environment.

These models of health seeking behavior have hence been developed based on a mixture of; perceived symptoms, emotional and cognitive factors, ability to access healthcare, demographic and social factors. Though Young (1918) argued that health-seeking behaviour does not always take the form that scientific medicine thinks is most appropriate, the models are important and informative in health service delivery because they facilitate understanding why for some illnesses and under certain social economic factors, people will choose particular practitioners including traditional healers rather than the scientifically trained physicians and to extend of creating loyalty (Young, 1918). Borrowing from Andersen (1995); Dingwall (1976) models, under capitation payment arrangement, members capitated by the scheme make independent decision when selecting their preferred health service provider. Capitation contract under the Kenyan model is open to both public and private healthcare practitioners.

Conceptual Framework

The Kenyan model of capitation scheme is a Laissez-faire system of operation because it does not provide a limit of the number of members who should choose an individual healthcare provider nor the number times a member is allowed to make consultations at a given capitation contract period. Accordingly, situations of congestion and frequent revisits by members capitated to a healthcare

provider are possible occurrences. Type of ownership is a significant consideration by member hence this study considers it as a moderating factor in health seeking behaviour as depicted in the conceptual framework in figure 1.

Figure 1: Conceptual framework

Congestion in out-patient department

Health seeking behaviour by members capitated by a health scheme has been reported to cause congestion in healthcare facilities affecting quality, accessibility and affordability of health services (Green, Wyr, & Giglio 2002; Gravelle, Dusheiko, & Sutton, 2002). It arises when demand for health services surpasses supply, a factor that leads to patient dissatisfaction and doctor-patient conflict. A study done by Baker, Stevens, and Brook (1991) observed that due to congestion in the health facilities patient waiting to consult the doctor experienced long delays resulting to medical complications. Up to 11% of patients who sort medical care left without being seen by the physician consequently were hospitalized within a week with 46% requiring emergency medical attention.

Kuunibe and Dary (2012) argue that in view of free choice of selecting the preferred healthcare provider, members of the scheme tend to over crowd to some healthcare providers. Previous studies: Dzator and Asafu-Adjaye (2004); Uchendu *et al.* (2013); Pirani *et al.* (2015); Idrissa, Liu, Yiing-Jenq, Chen, and Nicole (2014), elucidate that quality of treatment, costs of healthcare, waiting times, possessing insurance cover, distance to health facility, patients' cultural practices and beliefs are determinants to this type of health seeking behaviour. To some provider, the rapid high demand of health services affect planning and budgeting and ultimately quality of service delivered to the members (Saha, Taggart, Komaromy & Bindman, 2000). Such scenarios are common phenomenon with the public health facilities where high number of patients and long waiting times in out-patient clinics have been reported to affect patient satisfaction making those with capitation and other insurance cover prefer private facilities (Uchendu, Ilesanmi & Olumide, 2013).

Frequency of consultations

There is no restriction to the number of consultations a member covered under capitation contract can make within the contract period. In an ideal capitation contract, a copayment is imposed that acts as a gate keeping fee against misuse of health resources through excessive demands of expensive treatments by the capitated members (Winkelmann, 2004). The underlying philosophy of copayment is to cost-share the medical expenses with the member seeking healthcare as a result reduce unnecessary utilization of the resources (Varela & Timofte, 2011). Previous researches (Hansagi, Olsson, & Sjoberg, 2001; Huang, Tsai, & Chen, 2003) have shown that a high number of revisits that are made by frequent users are usually unnecessary except a few with chronic conditions that occasionally will need immediate attention. Basically these frequent users are the reason behind the overcrowding in outpatient departments, hence contribute substantially to increased healthcare costs, high utilization of health resources and as a result decrease in delivery of quality healthcare.

The Kenya National Bureau of Statistics (KNBS) in conjunction with Ministry of Health and support from United States Agency for International Development (USAID) and PEPFAR-funded Health Policy Project (HPP) conducted a Household Health Expenditure and Utilization Survey (Ministry of Health, 2014). The survey explored various demographic and socioeconomic factors that affect health-seeking behavior and how health services are used and paid for in Kenya. Sample size used was 33,675 households drawn from 1,347 select clusters: 814 (60%) rural and 533 (40%) urban. The result showed that the average number of visits to an outpatient healthcare provider per capita, per year increased by 35 percent between 2007 and 2013 with introduction of capitation health cover for primary healthcare. Those that lived within 3 km from a health facility were much more likely to seek health services

than those who lived 4 kilometers and above away. Further, the survey results showed that only 7.3% sort medical care when they got ill.

Type of ownership

Health service delivery in most economies is administered through the public sector, non-profit making and private- for profit health facilities (Lee, Wu, & Yang, 2012; Hsu, 2010). The diversity of administration explains the diversity of management of resources by the different type of ownership (Jehu-Appiah *et al.*, 2014). In addition, the administrative design of each ownership is created to achieve efficiency in delivery of health service and accomplish its mission and goals. Accordingly, for the purpose of this study, it is considered as a moderating variable.

Research and Methodology

Research philosophy and design

Research philosophy describes the mode of the development of knowledge and outlines the assumptions that dictate how the researcher approaches the research problem (Saunders, Lewis, & Thornhill, 2016; Aliyu, Bello, Kasim & Martin, 2014). In pursuit of following a scientific method to deduce indices of quality, accessible and a fordable delivery of health services, this study followed a philosophical view of positivism approach. A cross-sectional research design was employed since it allowed the researcher to establish relationships between decision variables and test the significance of the relationships on the depended variable at a specific point in time with no further follow-up of respondents (Creswell, 2014).

Population and sampling

In Kenya, healthcare facilities are spread across 47 counties. Only health facilities that had signed capitation contract as of July 2015 were considered for the study which total to 1152 health units. Due to the population heterogeneity and the spread, the study population was organized into seven geographical clusters. Using simple random technique, 297 health facilities proportionate to the number in each cluster were selected. Yamane's (1967) formula was used to derive the sample.

$$n = \frac{N}{1 + Ne^2}$$

Where n is the sample size, N the population size, e is the level of accuracy. In this study, the margin of error was considered to be 5%. From a population of 1152 health facilities, the appropriate sample size was computed as:

$$n = \frac{1152}{1 + 1152 \times (0.05)^2} \approx 297$$

Method of data collection

The study used a closed-ended questionnaire to collect both primary and secondary data. Primary data was collected from officers incharge of the sampled facilities whereas secondary data was obtained from existing records in the facilities. A positive response rate of 81% was achieved. Before embarking on the full study, a pilot study was carried out to test the reliability and validity of the instrument. Results obtained from the test-retest technique where the researcher administered the same questionnaires to the same respondents at two different occasions within a difference of two months showed that the ratio of coefficient of variation between the two pilot periods of the study variables remained close to 1.0 while their correlation coefficient had values of between 0.7 and 1.0. This implied that the research instrument yielded data that was reliable (Drost, 2011; Saunders *et al.*, 2016). Whereas, two senior hospital administrators who had been practicing capitation ascertained the validity of the research instrument. Their feedback was used to improve the instrument.

Data analysis

All the independent variables and the dependent variable were analyzed using descriptive statistics to bring out their distinct characteristics. Descriptive data was presented in frequency tables. Several diagnostic tests for independence of independent variables were performed: Pearson Chi-Square, Multicollinearity tests, Hosmer and Lemeshow Test of Goodness of Fit, Nigelerke Pseudo R Squared, and Omnibus Tests of Model Coefficients. In order to quantitatively express the contribution of each of the independent variables on the dependent variable, regression models were constructed in respect to quality, accessibility, affordability as shown in equation 3 respectively.

$$\begin{bmatrix} E_{Quality} = \beta_0 + \beta_1 x_1 + \dots + \beta_n x_n + \varepsilon \\ E_{Accessibility} = \beta_0 + \beta_1 x_1 + \dots + \beta_m x_m + \varepsilon \\ E_{Affordability} = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k + \varepsilon \end{bmatrix}$$

Where, β_0 is the constant, x_i represents the parameters that significantly influence each of the elements of effective delivery of health services whereas ε and β_i represent the error term and the odds ratio of each of the parameters respectively.

Results

Descriptive Analysis

Congestion in Out-Patient Department

This variable was captured by asking the respondents; “do you experience congestion from patients seeking outpatient services under capitation contract”?

Table 1: Congestion in Out-Patient Department

Congestion	Frequency	Percent
No	106	44.2
Yes	134	55.8
Total	240	100.0

Over 50% gave a positive response as shown in Table 1. Further, Pearson Chi-Square test of independence on congestion in out-patient department and type of ownership was performed. At 5% level of significance the value was 0.039 with a p value of 0.844 at 1 degree of freedom. It was therefore evident that there was no association between congestion in out-patient department and type of ownership.

Frequency of Consultations

Table 2: Frequency of Consultations by the most Frequent Users

Number of Consultations	Number of Facilities	Percent
2-4	38	15.8
5-7	37	15.4
8-10	43	17.9
> 10	122	50.8
Total	240	100.0

Results in Table 2 show, 68.7% of the facilities reported that, the most frequent users made over 8 consultations within the quarter. Chi-Square test of independence was further conducted on number of consultations by the most frequent member and type of ownership. The Pearson Chi-Square value at 5% level of significance was 1.096 with p value of 0.778 at 3 degrees of freedom which revealed that there was no association between frequency of consultations and type of ownership.

Regression Analysis

A logit regression model was used to test the hypothesis “health seeking behavior has no effect on delivery of health services under capitation contracting”. Element considered to describe the health seeking behavior were; congestion in out-patient department and frequency of consultations by the most frequent member and analyzed against the three measures of effectiveness; quality, accessibility and affordability as shown in Table 3.

Table 3: Health Seeking Behaviour on Delivery of Effective Health Service

Effects of Health Seeking Behaviour	Quality (Model 1)			Accessibility (Model 2)			Affordability (Model 3)		
	B	Sig.	Exp(B) (Odds Ratio)	B	Sig.	Exp(B) (Odds Ratio)	B	Sig.	Exp(B) (Odds Ratio)
Congestion in Out-Patient (Base Category=No)	-3.307	.049	.036	.299	.025	1.349	.263	.019	1.300
Frequency of Consultations by the most Frequent Members	-1.753	.017	.173	-.100	.006	1.105	-.258	.051	1.295
Type of Ownership (Base category profit making)	-.565	.087	1.759	1.165	.014	.312	1.086	.060	2.964
Constant	-2.682	.001	.068	4.391	.003	80.697	-.966	.421	.380

Source: Author

Regression results in Table 3 revealed that all the elements that were considered to explain health seeking behavior had a negative coefficient on delivery of quality health services. Effect of congestion in outpatients department was statistically significant on quality, accessibility and affordability with p-values of .049, .025 and .019 respectively. The odds ratios were; .036, 1.349 and 1.300 for quality, accessibility and affordability respectively implying that an increment by one unit of the members congesting in outpatient department reduced the likelihood of delivering quality healthcare by .036 and reduced the likelihood of accessibility and affordability of the services by 1.349 and 1.300 respectively. Coefficients for frequency of consultations by most frequent members were negative on the three models however, statistically significant on quality and accessibility of the services (.017 and .006) respective. The corresponding indices were .173 and 1.105 respectively. This implied that an increase in frequency of consultation by one unit would decrease delivery of quality and accessibility of health services by .173 and 1.105 respectively. The index for affordability was 1.295 implying that an increase in frequency of consultations by one unit would reduce affordability of delivering health services to the members by 1.295. Further the effect of the moderating variable, type of ownership was only statistically significant on accessibility of health services delivered under capitation contracting. The odds ratios for delivering quality, accessibility and affordability health services were 1.759, .312 and 2.964 respectively. Using profit making facilities as the base category, the results show that the non-profit making facilities were 1.759 less likely to deliver quality health services, .312 more likely to be accessible and 2.964 more likely to be affordable by members compared to profit making facilities.

The above results are represented empirically using the regression equation 4.

$$\begin{bmatrix} E_{Quality} = .068 + .036x_1 + .173x_2 + 1.759x_3 + \varepsilon \\ E_{Accessibility} = 80.697 + 1.349x_1 + 1.105x_2 + .312x_3 + \varepsilon \\ E_{Affordability} = .380 + 1.300x_1 + 1.295x_2 + 2.964x_3 + \varepsilon \end{bmatrix}$$

Where, x_1 , x_2 , x_3 and ε represent congestion in out-patient department, frequency of consultations, type of ownership and error term respectively.

Discussion

Under the Kenyan healthcare capitation contracting scheme, members insured to receive outpatient medical care are free to choose one preferred healthcare provider from a population of many. The choice of a provider is usually determined by convenience due to geographical location, types of medical services provider offers, healthcare provider with higher reputation and recommendation by friends and relatives among many other factors (Abiodun, & Olu-Abiodun, 2014; Abiodunrin, et al., 2010; Saha, et al., 2000). The number of members who are assigned to each healthcare is not capped per period, neither is there a gate keeping fee (copayment).

Accordingly, congestion in the highly selected facilities is a common occurrence with some of the patient making unnecessary repeated visits. A study by Dent *et al.* (2003) that analyzed 12490 visits by 500 repeat users of health services in Australian health facilities revealed that only 28% of these visits were potentially necessary for seeking primary healthcare.

Regression results explicate that an increase by one unit of the members congesting in outpatient department reduces the likelihood of delivering quality healthcare as well as the likelihood of being able to afford and avail the necessary resources for access by the members. Further, frequent consultations by some members showed a negative effect on the three models with significant p-values for quality and the accessibility models. This implied that with every subsequent revisit a member made to receive primary healthcare, the likelihood of the healthcare provider offering quality and accessible and affordable health services was reduced. The current study findings of the Kenyan model of capitation contracting can perhaps be explained by the fact that the prospective payment to the healthcare providers is limited and fixed to US\$ 1.0 per-member-per-month with no risk adjustments of treating costly emergency and chronic condition that may require expensive procedures or drugs.

In agreement with the findings of this study; Saha, et al. (2000) study findings revealed that rapid fluctuations caused by high demand of health services had a negative effect on planning, cost budgeting and ultimately quality of service delivered to the members. Baker, *et al.* (1991) observed that due to congestion in the health facilities patient waiting to consult the doctor experienced long delays resulting to medical complications. Nevertheless, Sun (2006) study disagree and affirmed that healthcare providers with a large population of capitated members operate cost effectively within sustainable profits as implied by the law of large numbers. Delivery of health services in Kenya is offered through both profit-making and non-profit making health facilities hence, type of ownership was used as the moderating variable. Using profit making as the base category, regression results revealed that with increase in congestion and frequent revisits by capitated members, the non-profit making facilities were less likely to deliver quality health services, however, were more likely to afford providing accessible health services to the members.

Conclusions

The research findings reveal that health seeking behaviour by members under capitation contract generally had a negative effect on delivery of effective health services. From healthcare provider perspective, congestions resulting from open-free provider selections by members and the frequency of revisits reduced ability to offer quality health services as well reduced their ability to afford availing the necessary health resources like drugs for access by the members. Accordingly, this study recommends that for healthcare providers to offer effective health services, allocation of capitated members to the providers should be restricted to a number that matches the level of individual provider's capability taking into consideration the Kenyan classification of health facility levels. Further to discourage unnecessary consultations a copayment should be imposed for every visit the member makes.

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