ORIGINAL ARTICLE

PATIENTS' RATINGS OF THE QUALITY OF THEIR OUTPATIENT VISIT TO CLINICAL OFFICERS IN KENYA

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ABSTRACT

BACKGROUND: Lack of data on the quality of care offered by Clinical Officers (COs) compromises the current efforts on health reforms in Kenya. The objective of this study was to assess patients' satisfaction with their outpatient visit to Clinical Officers.

METHODS: This was an exit survey of adult outpatients who visited Clinical Officers between September 2009 and May 2010. A total of 326 Clinical Officers were assessed by 2118 randomly selected patients across the country using a modified Visit-Specific Satisfaction Questionnaire (VSQ-9). Responses on patients' satisfaction were summarized using the average score method. This involved calculation of the mean across all the response categories and transforming them linearly to a 0 to 100 scale. Interpretation involved comparisons to best practice (excellent).

RESULTS: Generally, patients view the quality of their outpatient visit from two dimensions: interaction with Clinical Officers and access to care. The patients were relatively more satisfied with their interaction with Clinical Officers (rated at 67 percent) than with access to care (61 percent). The average age of the patients was 31.31 years (SD = 13.64). Most patients were female (58 percent), married (51 percent) and most had secondary level education (38 percent). Regression results showed that these socio-demographic characteristics had no significant association with patients' satisfaction.

CONCLUSION: Overall patients see ample room for improvement in their visits to Clinical Officers. The need to train Clinical Officers on client handling and patient-centeredness is apparent.

KEYWORDS: Patients Ratings, Clinical Officers, Quality of Outpatient Visit

INTRODUCTION

The assessment of quality is now considered an integral part in the delivery of health care services globally. The challenge has however, been on the identification of an appropriate tool kit for assessing quality (1). The concept of patient satisfaction is widely used to assess quality (2-6) and the literature describes satisfaction as a psychological notion in which consumers reflect on their pleasure level (3-4). In its technical attribution, satisfaction is a judgment set by consumers of a service, documented after the consumption of the service (6). Assessing patients' satisfaction is critical in the implementation of continuous improvements in medical settings (2).

The focus on patients' satisfaction is of fundamental significance. They often assess the adequacy of care by criteria that are not necessarily technical but rather on the basis of the manner in which it is delivered (4). Dissatisfied patients are less likely to comply with treatment recommendations, often switch clinicians and health facilities and are more likely to initiate malpractice litigation (1). Assessing patients' satisfaction is also justified since health providers rarely receive feedback on whether their interventions work or not.

A common approach to define satisfaction is to relate it to consumers' desires or aims and the extent to which these are fulfilled after the phase of consumption. In its earlier formulation, a service was considered to be of quality whenever perceptions exceeded user's expectations (6). Current thinking however, considers the judgment process to be attitudinal and not perceptive (5).

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Further, patients' satisfaction with health care is based on the summation of the very subjective assessments of the dimensions of the health care experience. These dimensions are broadly categorized as access to care and the interpersonal skills of the health care provider (1). It is however not clear whether these dimensions are universal. Further, the controversy on whether patients' characteristics moderate their evaluation of care needs investigation (1, 5-6).

Enhancing the quality of care is a priority in health reforms in Kenya and a recent report indicates that patients are satisfied with their hospital visit (7). There are concerns on the usefulness of this report since the scale it uses to assess patients' satisfaction appears to be loaded in favour of positive responses relative to the negative ones. Further, the report is silent on the quality of care offered by different cadres of health personnel (such as doctors, nurses and clinical officers (COs)). Yet the need to appraise the performance of health workers is a key health policy agenda in Kenya (8) and availability of reliable data is critical in monitoring health reforms and indicating areas where action is required.

It is estimated that there are 15.7 COs for every 100,000 people in Kenya (9). COs are legally recognized as qualified medical practitioners in Kenya (10). They are mid-level health care providers who go by other names such as medical assistants, physician assistants, clinical associates, assistant medical officers or primary care practitioners mainly in Sub Sahara Africa. In Kenya, these professionals undergo a three-year intensive course in Clinical Medicine and Surgery and a further one year internship before they get registered to practice (10), with expanding options for post-basic training. Their basic training is cheaper and takes a shorter time when compared to that of medical doctors (9) and they act as either substitutes or assistants to medical doctors. They are the frontline managers of patients both in rural and urban centres, and thus, offer the public the first impression of quality of health care. Among other functions, they examine and treat patients, prepare legal documents such as medical certificates and present medical evidence in court. In discharging their duties, COs are expected to maintain high standards of practice, desist from unethical behaviour and treat their clients with courtesy and respect (11). However, the extent to which COs' meet patients' expectations remains unclear. A hospital-based study has raised concerns on the effectiveness of the COs practice (12). There is need to supplement this literature with a view of identifying the precise areas of concern. Therefore, this study serves two purposes. First, it aims at assessing patients' satisfaction with their outpatient visit to COs using a representative sample of patients in Kenya. Second it examines factors that may influence patients' satisfaction.

PATIENTS AND METHODS

This was a survey of patients who visited COs working in selected public health facilities in Kenya during the period September 2009 and May 2010. It is estimated that there are approximately 2,167 COs working in public health facilities across the country (9).

A sample of 18 large districts (now counties) was selected using simple random sampling from all the 47 counties in all the eight provinces that existed in Kenya before the promulgation of the new constitution in 2010. It was reasoned that two districts in each of the six small provinces and three districts in the two largest provinces will suffice to capture the variability witnessed across the country. A mapping of human resource was then conducted in the selected districts and a total of 326 COs were identified. COs in the two national referral hospitals namely Kenyatta National Hospital and Moi Referral Hospital were excluded from this evaluation since both hospitals are relatively well equipped and workload is a complex issue which involves specialist clinical work and teaching.

The respondents in this study included patients visiting the identified COs during the study period. The enrolment criteria for the study included age 18 years or older and legal competence. Patients without relevant information and those who refused to consent were excluded from the study.

The study subjects were selected randomly. In order to avoid possible bias in patient selection, research assistants were instructed to look away from patients leaving the COs office for a period of time, and then to look back and approach the first patient in their vision exiting from the COs

consultation room. By applying the Cochran's minimum sample size formula (13): $n = z^2pq/d^2$, where, n = the sample size, z = the standard normal deviate (1.96), p = the proportion of the target population estimated to be satisfied with out-patient care and d is the margin of error. Using this formula and assuming p = 0.75 (from pilot study, 75 percent of patients were satisfied with visit to COs) and accepting a margin of error of d = 0.02) the minimum number of patients was obtained as: $n = (1.96)^2(0.75)\ (0.25)/\ 0.02^2 = 1801$ patients. This number fell short of the recommended criteria that 6 to 10 patients are adequate to assess the quality of care offered by clinicians (14). With a population of 326 COs to be assessed, a minimum of 1956 patients were required and therefore the required minimum sample size was adjusted to this figure.

A modified 9-item Visit-Specific Satisfaction Questionnaire (VSQ-9) was the main outcomes measure. This scale is used to measure patient satisfaction with a primary care visit. It measures patient satisfaction with access to care (questions 1 to 4), direct interaction with the health provider (questions 5 to 8), and with the visit overall (question 9) on a scale ranging from 1 (poor) to 5 (excellent) (15). The VSQ-9 focuses specifically on satisfaction with a visit to a physician or other health care provider. This tool has satisfactory psychometric properties and is patient friendly (16).

A review of this tool showed that the item 'getting through to office by phone' was not appropriate in Kenya. A panel involving experts in clinical training and practice and social research was constituted and requested to deliberate on the appropriateness of using the VSQ-9. The committee decided that 'getting through to office by phone' be replaced by an item that assesses observance of the privacy of patients. It also reworded the VSQ-9 item 'wait to get an appointment' to 'wait to see the clinical officer.' Questions on patient socio- demographics (age, sex, marital status, educational attainment and socio-economic class), the number of previous hospital visits in the last 12 months and residential setting (rural or urban) were added to the modified instrument. The instrument was pre-tested in one non-sampled district and noted deficiencies (such as ambiguous words and arrangement of questions) rectified accordingly and this pre-tested instrument was used in this survey.

The survey instrument was administered by 18 trained research assistants who waited at the exit of COs' offices. The research assistants introduced themselves and the purpose of the study and then sought informed consent from the patients. Questions were then read to the patients as they appeared in the questionnaire and their responses recorded appropriately. Effort was made to ensure that at least six patients rated each clinical officer. Data was collected from all public health facilities including provincial hospitals, district and sub-district hospitals, health centres and dispensaries in the selected districts.

Data were double-entered by means of a purpose-designed Microsoft Excel 2003 interface. Then the data was screened for univariate outliers whereas several out-of-range values, mainly due to administrative errors, were identified and recoded as missing data.

Continuous variables were presented with means and standard deviation (SD) while categorical variables were presented with frequencies and percentages and the data was also presented in tables and figures.

The evaluative responses on patients' satisfaction were summarized using an average score where this involved the calculation of the mean across all the response categories. This method treated the response options as points on a linear or interval scale. The mean scores were transformed linearly to a scale of 0 to 100, with 100 corresponding to "excellent" and 0 to "poor". This involved multiplying the mean score with a conversion factor of 20. Then the converted mean scores were presented using horizontal bar graphs. Interpretation of results was in light of current theories of quality management and improvement which recommend comparisons to best practices rather than to minimal standards.

The factor structure of the items assessing patients' satisfaction with the visit to COs was obtained through principal component analysis (PCA) with oblimin rotation. PCA was used because of the need to identify and compute composite patients' satisfaction scores for the factors underlying the modified version of the VSQ-9 and oblimin rotation was used since it allows latent factors to correlate.

A Generalized Linear regression model was used to test for the association between patient variables with patient satisfaction scores. Two dependent variables were used in this study. The first was the mean value of the four items in the modified VSQ-9 which assessed access to care. The second was a composite score which was calculated as the mean of the items that assessed the direct interaction with COs. Patients' characteristics were taken as the independent variables. Categorical variables were separated into dummy variables with the omitted categories for sex, marital status, education, location and socio-economic class, being "male," "not married," "some college or university education," "rural" and "high income", respectively.

In all the analyses a $\rho < 0.05$ was taken as proof of statistical significance. The partial eta squared statistic was used to assess the magnitude of the effect of independent variables on patients' satisfaction scores. Data was analyzed using the Statistical Package for Social Sciences (SPSS) Version 13.0.

The National Council for Science and Technology gave permission for this study to be conducted through a letter referenced NCST/5/002/R/1002. Further, permission to collect data was obtained at both the provincial and at the health facility level. Before administering the questionnaire, informed consent was sought from the sampled patients and confidentiality of data was maintained throughout the study.

RESULTS

A total of 2118 patients completed this survey. One or more variables were however missing from 157 cases or 7 percent of the patients, which translates to a response rate of 93 percent.

The average age of the respondents was 31.31 years (SD = 13.64) where most of the subjects (58 percent) were females and most of them (51 percent) were married. Most of the surveyed patients (38 percent) had secondary school level of education and a majority of them considered themselves to be in the middle income group (64 percent). Majority of them (60 percent) indicated that they live in urban areas. The subjects indicated that they had visited hospital on average 2.89 (SD = 2.18) times in the last 12 months.

Table 1. Descriptive Statistics and Correlation Coefficients of the Modified VSQ-9

Rating of Aspect of Quality In terms of your satisfaction. (Excellent = 5, Very good = 4, Good = 3, Fair = 2, Poor = 1)	Mean	SD	1	2	3	4	5	6	7	8	9
1. How long you waited to see the clinical officer	2.79	1	1								
2. Convenience of the location of the office	3.13	0.84	0.54	1							
3. Getting to the health facility	3.09	0.89	0.47	0.70	1						
4. Time spent with the clinical officer you saw	3.15	0.90	0.62	0.53	0.52	1					
5. Observation of privacy by the clinical officer you saw	3.31	0.85	0.41	0.55	0.54	0.61	1				
6. The personal manner (courtesy, respect, sensitivity, friendliness) of the clinical officer you saw	3.45	0.86	0.36	0.51	0.48	0.57	0.69	1			
7. Explanation of what was done for you	3.16	0.98	0.46	0.53	0.50	0.52	0.60	0.54	1		
8. Technical skills (thoroughness, carefulness, competence) of the clinical officer you saw	3.46	0.83	0.34	0.51	0.48	0.56	0.66	0.85	0.54	1	
9. The visit overall	3.36	0.84	0.43	0.56	0.53	0.56	0.67	0.77	0.61	0.76	1

All correlations were significant at $\rho < 0.01$ Source: Survey data, Kenya September 2009 to May 2010

The factorability of all the nine items in the modified VSQ-9 was examined in several ways. Firstly, all the nine items were significantly correlated with each other (Table 1), suggesting reasonable factorability. Secondly, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.90, which was above the recommended value of .60, and Bartlett's test of sphericity was significant (χ^2 (36) = 12450.85, $\rho < 0.05$). The diagonals of the anti-image correlation matrix were all over 0.85, supporting the inclusion of each item in the factor analysis. Finally, the communalities were all above 0.45, which revealed that each item shared some common variance with other items. Thus, factor analysis was conducted with all 9 items.

The factor analyses yielded a two factor solution for the modified VSQ-9 scale (Table 2). The first factor namely 'interaction with COs" explained 61 percent of the variance while the second factor "access to care" explained 11 percent of the variance. The Cronbach's alpha coefficients of both these sub-scales namely interaction with COs ($\alpha = 0.91$) and access to care ($\alpha = 0.85$) were satisfactory, and were not affected by the removal of any of the items.

Table 2. Factor Loadings Based on a Principle Components Analysis with Oblimin Rotation for the 9 Items of the Modified VSQ-9

Aspect of Quality	*Specific performance of COs*	*Access to care*
1. How long you waited to see the clinical officer		0.73
2. Convenience of the location of the office		0.96
3. Getting to the health facility		0.71
4. Time spent with the clinical officer you saw		0.59
5. Observation of privacy by the clinical officer you saw	0.71	
6. The personal manner (courtesy, respect, sensitivity, friendliness) of the clinical officer you saw	0.97	
7. Explanation of what was done for you	0.45	
8. Technical skills (thoroughness, carefulness, competence) of the clinical officer you saw	0.97	
9. The visit overall	0.82	
Eigenvalues	5.51	1.02

Source: Survey data, Kenya September 2009 to May 2010

Composite scores were created for both factors, based on the mean of the items which had their primary loadings on each factor. Patients were generally satisfied with the quality of their interaction with COs, with an average per-item score of 3.36 (SD = 0.74) where this translates to a satisfaction rating of 67 percent. There was substantial variation in the 5-item measure of the quality of interaction between patients and COs, with scores ranging from 5 (all questions answered "poor") to 25 (all questions answered "excellent").

The patients were less satisfied with issues of access to care with an average per-item score of 3.05 (SD = 0.74) and this translates to a satisfaction rating of 61 percent. Yet a substantial variation was also evident with this sub-scale.

Examining the specific features of care, the patients gave 'time waiting to see the COs' the least score of 56 percent (Figure 1). The technical skills and the personal manner of the COs were rated highest at 69 percent each.

Two Generalized Linear Models were used to determine the associations of selected variables on patients' ratings of satisfaction. The regression coefficients are shown in Table 3. In this table, the first column shows the labels of variables used in the regression analyses. The second column presents the beta coefficients with their respective 95 percent Confidence Interval (CI) when access to care is used as the dependent variable.

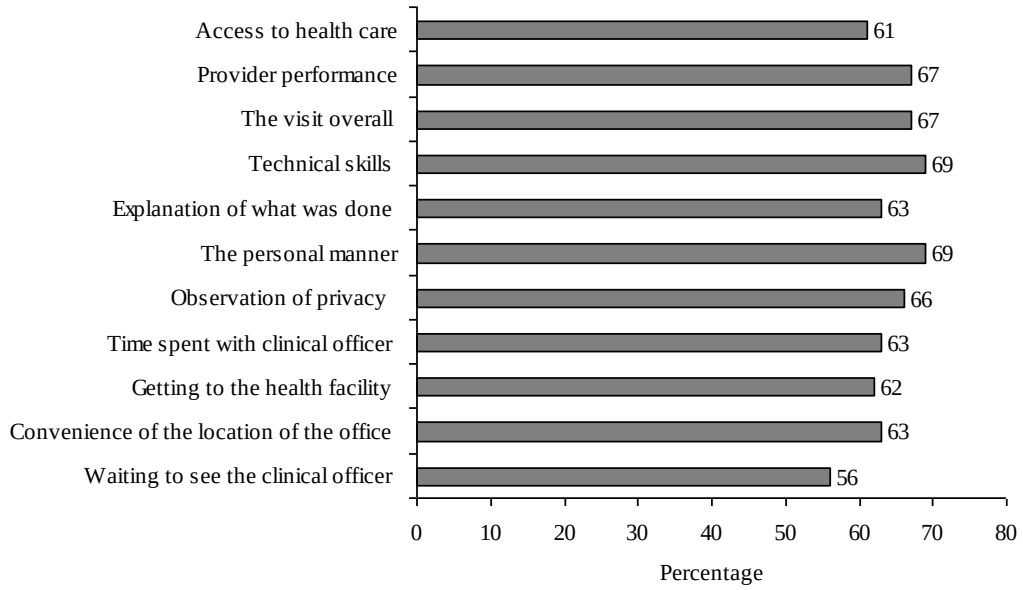

Figure 1: Patients' Satisfaction Ratings of Various Aspects of their Visit to COs
Source: Survey data, Kenya September 2009 to May 2010.

The results revealed that married respondents had relatively lower satisfaction ratings with access to care when compared to the unmarried. Precisely, being married was associated with a 0.14 decrease in the score on satisfaction with access to care. Further, patients from rural areas had a 0.11 increase in satisfaction with access to care when compared to their urban counterparts. Finally, patients who had made more hospital visits in the last 12 months had a 0.04 reduction in their satisfaction with access to care.

The third column present the regression outputs when the score of satisfaction with interaction with COs is used as the dependent variable. Patients from rural areas tend to be more satisfied with their interaction with COs. Further, patients who frequented hospital the most in the last 12 months had a 0.04 reduction with satisfaction with their interaction with COs.

Rural based patients tend to be relatively more satisfied with their overall visit to COs when compared to their urban counterparts. Respondents who frequent hospital the most appear to have concerns with the overall experience of their outpatient visit to COs. Married respondents appear to be more sensitive to problems of access to care.

Further analyses revealed that none of the above described significant independent variables had an eta squared statistic of above 0.008 and this indicates that the effects of these variables on patient satisfaction are minimal. Further analyses were conducted with a view of uncovering interaction effects among the independent variables but none were found to be significant.

DISCUSSION

The major aim of this study was to assess patients' satisfaction with their outpatient visit to COs in Kenya. Overall, the results indicated the items in the modified VSQ-9 appear to measure two patients concerns: feelings induced by the COs and issues of access. The reported results revealed that the variables contained in each of these two factors occur together as distinct phenomena. This result is in agreement with existing literature (1, 14-17) and focusing on these two dimensions may be worthwhile. The relatively high response rate and the satisfactory psychometric properties reported with this tool point to its potential future usage in assessing patients' satisfaction.

Table 3. Regression Analysis of Factors Associated with Patients' Satisfaction with visit to Cos

Parameter	*Access to care*	*Interaction with COs*	
		β (95% Confidence Interval)	β (95% Confidence Interval)
Intercept		3.36*	3.39*
Sex: Male		-0.05 (-0.13 to 0.02)	-0.07 (-0.14 to 0.01)
Marital status: Married		-0.14* (-0.21 to -0.06)	0.02 (-0.06 to 0.09)
Income: Low		-0.24 (-0.40 to -0.08)	-0.06 (-0.22 to 0.09)
Middle		-0.25 (-0.39 to -0.10)	0.01 (-0.13 to 0.15)
Location: Rural		0.11* (0.03 to 0.18)	0.08* (0.01 to 0.16)
School: No formal schooling		-0.07 (-0.255 to 0.11)	-0.11 (-0.30 to 0.06)
Primary		0.00 (-0.12 to 0.11)	-0.004 (-0.12 to 0.11)
Secondary		0.09 (-0.02 to 0.20)	0.01 (-0.10 to 0.12)
Number of visits in hospital in previous 12 months		-0.04* (-0.06 to -0.02)	-0.04* (-0.06 to - 0.01)
Age in years		0.001 (-0.002 to 0.004)	0.002 (-0.001 to 0.01)

* Associations significant at $\rho < 0.05$ Source: Survey data, Kenya September 2009 to May 2010

The surveyed patients were relatively more satisfied with their interaction with COs than with access to care but both aspects were rated at below excellent. The results agree with the literature which raises questions on the quality of the interpersonal care offered by COs in Kenya (12) and satisfaction with visits to physicians abroad (14-16). The findings suggest that patients see ample room for improvement in their overall visit to COs.

An additional significant finding of our study is the minimal predictive power of patients' characteristics where a profile of a relatively youthful, married, urban, moderately educated patient, in the middle level socio-economic class and who had visited hospital in the previous twelve months emerged. This study demonstrated that although some of these patients' characteristics produce a moderating effect on patients' satisfaction scores, this effect was very miniscule in value. This finding is consistent with some literature (14, 16) but not with others (1, 15, 17). This finding is significant in that individual differences appear to explain little in patients' evaluations of their visit to COs. The need to adjust for patients' characteristics in their satisfaction ratings is therefore not fully supported in this study.

A possible bias in the results could have been introduced by the method used to recruit the study respondents. A similar recruitment procedure has been used in literature with minimal bias (16). Further the training of the research assistants helped to minimize any possible bias.

The results can be used as an indicator of areas in the COs practice where action is required. They could be fed back to COs so that they can improve their performance relative to the needs and expectations of their patients and the need to

train COs in patient centered accountability appears to be required.

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