Compensation Management Practices and Quality of Health Care at Jaramogi Oginga Odinga Teaching and Referral Hospital

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Abstract

Organizations are known to provide a high quality health care when its human resources are compensated properly. When a health care institution compensates its clinical and non-clinical staff efficiently, it results into improved quality of healthcare. However, recent strikes globally, and in Kenya specifically, suggests inappropriate compensation management practices of the healthcare workers in the Country. It's against this background that the study sought to investigate the effect of compensation management practices on the quality of healthcare at Jaramogi Oginga Odinga Teaching and Referral Hospital in Kisumu County, Kenya. Specifically, the study sought to establish the influence of; competitive salary, financial incentives and group bonuses; on the quality of healthcare at Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) in Kisumu County, Kenya. The research was underpinned by the human capital, resource-based view; person fit environment theories, and the service performance model. The two populations of interest consisted of the permanent clinical and nursing staff and patient complaint data on responsiveness and reliability of clinicians and nurses, for the third quarter of the 2017/2018 financial year. The research was grounded on a principle of mixed methods pragmatism, exploiting the sequential explanatory mixed methods design. Phase one surveyed the opinions of a systematic random sample of 97 respondents from a target population of 130 permanent clinicians and nurses.

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Phase Two involved a content analysis of patient complaints data for an explanation of the quantitative relationships established in the quantitative strand of the study. During Phase One, summary statistics, that informed inferential and subsequent qualitative analysis, were presented using tables and charts. Multiple regression analysis was used to test the significance of the relationship amongst the log10 of predictor and log10 of the outcome variable. The log-log regression model shows that the compensation management practices explain 22.1% of the variance in the dependent variable. Hypothesis tests revealed that compensation management practices had statistically significant relationships with quality of health care. Qualitative data provided further evidence on the importance of compensation management practices in ensuring that the technical quality of healthcare was maintained. Most complaints derived from delay in test results, and waiting before the consultation. The shortage of clinicians and nurses were to blame for delays in serving patients. The study concludes that teaching and referral hospitals can improve the quality of healthcare by addressing challenges relating to compensation. Adoption of a strategic approach to compensation management could remedy HR deficiency and solve the problem of strikes in teaching and referral hospitals in Kenya and beyond.

KeyWords: Compensation Management; Quality of Health.

1. Introduction

Organizations globally provide high quality health care when their workers are compensated properly [24]. When a health care institution compensates its clinical and non-clinical staff properly, it results into improved quality of healthcare [20]. However, recent strikes globally, and in Kenya, suggest inadequacy in management of human resources for health. Globally, increased attention is being focused on human resource management within many health care systems. Human resource is one of three health system inputs, the others being physical capital and consumables [52]. Due to their obvious and important differences, it is imperative that human capital is handled and managed very differently from physical capital [53]. Unfortunately, in many countries health care workers are unsatisfied with payments and healthcare policy, security, safety, working conditions and physical and administrative infrastructure [10].

In Kenya, pursuit of higher pay and better working conditions, shortage of equipment and manpower prevent health care institutions from offering quality care [46]. It appears that these institutions do not have established HRM functions with the ability to address the HR challenges in providing quality health care. Authors in [49] recommended for the inclusion of HR personnel in the managerial hierarchy at Moi Teaching and Referral Hospital to enhance capacity to provide quality health care. Research suggests that recruitment, training, compensation, career and performance management are associated with quality of health care [41]. Recruitment identifies and selects qualified people to fill vacancies [45]. Compensation remunerates people fairly and equitably [2].

Since elevation of JOOTRH to a teaching and referral hospital, the facility has been serving more than 100 district and sub-district hospitals in the Western Kenya Region [23]. While it has expanded its mandate, not much evidence exists of its capacity to engage, train, remunerate, and manage the performance of its health care professionals. The recent incidences of industrial unrest amongst health care staff, at this facility, suggest a need

to evaluate its compensation management practices in to efficiently and effectively handle the health care issues. Thus the study answered the need to examine the compensation management practices applied in these levels of hospitals and how they impact in the healthcare delivery.

1.1 Objective of the Study

1.1.1 General Objective

The general objective of the study was to to investigate the effect of compensation management practices on the quality of healthcare at JOOTRH in Kisumu County, Kenya

1.2 Specific Objectives

   i.   To evaluate the effect of competitively salary on the quality of healthcare at JOOTRH in Kisumu County, Kenya

   ii.   To examine the effect of financial incentives on the quality of healthcare at JOOTRH in Kisumu County, Kenya

   iii.   To find out the effect of group bonus on the quality of healthcare at JOOTRH in Kisumu County, Kenya

2. Literature Review and Theoretical Foundation

2.1 Literature Review

Compensation management practices aims at rewarding people equitably and consistently in accordance with their value to the organization. Compensation can attract and retain employees [26]. Rewards affect performance [4] while benefits are positively related to retention and that reward such as empowerment, recognition, motivation will ultimately lead to organizational effectiveness. Many researchers hereunder have observed that there exists a positive relationship between the reward system in place and employee performance. According to author in [56], a reward strategy enhanced commitment, retention and employee engagement that eventually translated into employee performance. Paying for performance was a huge concern in current HRM.

Establishments had long thought that efficiency improved after pay was connected to performance. While payment by outcome schemes and inducements are established to back the belief, researchers have also established a positive nexus between performances related pay and staff productivity. According to author in [2] , rewards proved to employees that the behaviour they exhibited was fitting and must be replicated. Both monetary and non-monetary rewards and incentives can enhance employees' motivation and attachment to the organization [7]. Compensation management impacts on employer's ability to attract applicants, retain employees, and ensure optimal levels of performance [33] .

According to author in [56], fair compensation enhances commitment, retention and employee engagement that eventually translates into employee performance. Authors in [51] established that most current employees are

ready to quit if offered another job with better terms of service. Very competitive package has been ranked first among the list of factors attracting workers [22] . Compensation strategy is seen as one of the most important strategies in HRM function as it influences the productivity and growth of an organization [38]. A study carried out by authors in [19] on reward systems within the health and geriatric care sector. The study sought to find out their effects on quality of health services provided by employees. Six (6) heads of both private and public organizations were interviewed. The study found out that salary was an important aspect in the reward system; however incentives like bonuses and shares were seen to generate an enjoyable workplace with happy workers. This motivated employees and improved their effectiveness.

The majority of published studies do show significant relationship between compensation management and quality of service delivery, these relationships are neither universal nor consistent [35]. Thus, the question of whether compensation management practices improves or worsens quality of health care is still worthy of further research. Besides, the impact of compensation management practices on quality of health care, within teaching and referral hospitals, has not received adequate research attention in Kenya

2.2 Conceptual Framework

In figure 3.3 below, it's conceptualized that the compensation management practices such as; competitive salary, financial incentives and group bonuses, have effect on the quality of healthcare at JOOTRH in Kisumu County, Kenya.
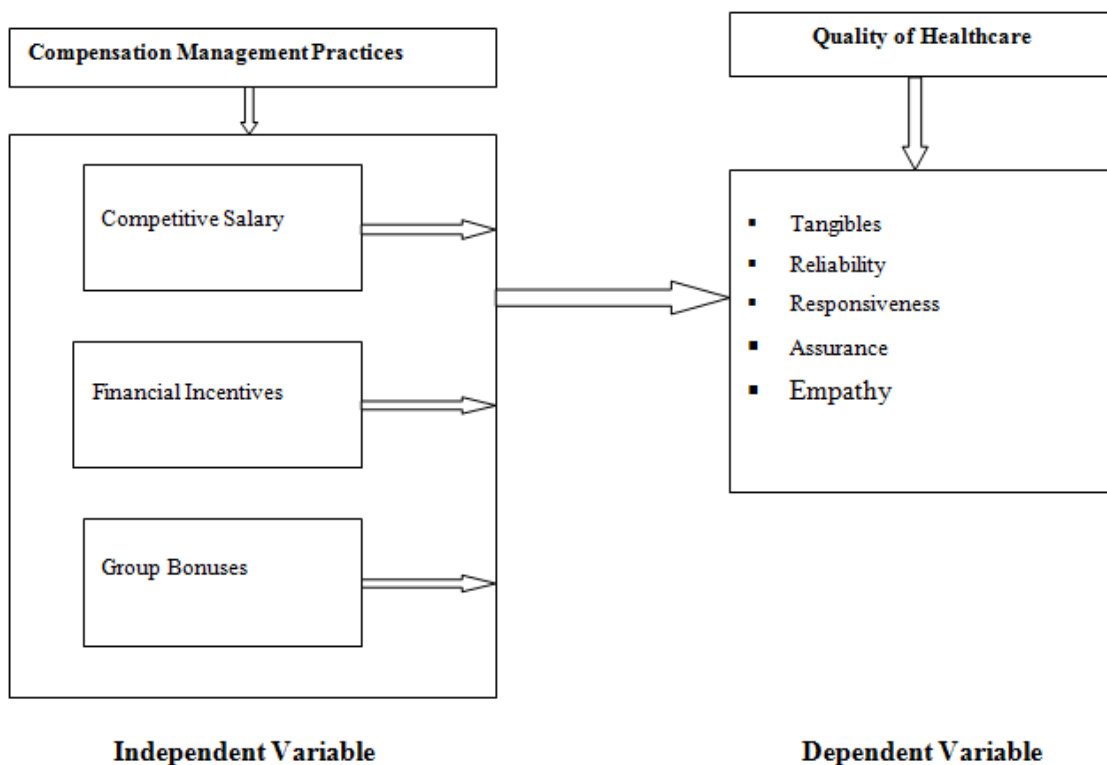

Figure 1: Conceptual Framework

Source: Researcher (2018)

3. Research Methodology

3.1 Research Design

4. Materials and Methodology

4.1 Research Design

The study used a mixed methods sequential explanatory design (SED). According to authors in [13], the purpose of SED is to use qualitative data to enrich, explain, or elaborate upon, results gained from quantitative approaches. The design achieves this in two phases, beginning with the quantitative phase and ending with the qualitative phase. Phase one involves the collection and analysis of quantitative data. The second phase employs qualitative methods to elaborate on the results from the quantitative phase. In this study, the first phase involved a cross-sectional survey of perceptions of clinicians and nurses on the influence of human resource management practices on quality of health care. The second phase involved the analysis of patient complaints to elaborate on the responsiveness and reliability of health care provided by clinicians and nurses. The use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone [15].

4.2 Target Population

The population for the survey research comprised all the 130 clinical and nursing staff on permanent terms of employment at the Jaramogi Oginga Odinga Teaching and Referral Hospital, at the time of the study.

The clinical and nursing staff at the facility was considered an appropriate population, given the recent unrests in the facility attributed to compensation and related human resource management problems. There have been reports of poor quality of health care within public hospitals in Kenya, including neglect of patients due to overworked staff, understaffed or low capacity, poor remuneration and promotion. These challenges and reactions by staff evident in their industrial action cast doubts on the efficacy of HRM teaching and referral hospitals.

Table 1: Study Population for the Survey

Population Strata	Permanent	Interns	Contract	Total
Consultants	17			17
Medical Officers	22			22
Clinical Officers	25	35	18	78
Nursing officers	66	26	40	132
TOTAL	130	61	58	249

Source: JOOTRH (2017)

4.3 Sample Size

4.3.1 Sample Size for the Quantitative Phase

Fundamentally, quantitative research leans toward probability sampling, whereby the probability of any individual being randomly selected from the population of interest is equal [32]   . Calculations are made regarding sample size in order to provide statistical confidence intervals, indicating an accepted range from which findings can be generalized to the wider population [12]   .

The sample for the collection of survey data was based on random sampling and consisted of 97 permanent clinicians and nursing staff. It was determined based on the Krejcie and Morgan's sample size calculation.

Table 2: Study Sample of the Survey

Population Strata	Total Population	Sample Size
Consultants	17	13
Medical Officers	22	16
Clinical Officers	25	19
Nursing officers	66	49
TOTAL	130	97

Source: JOOTRH (2017)

4.3.2 Sample Size for the Qualitative Phase

The qualitative phase of the involved an analysis of content analysis for themes relating to responsiveness and reliability of health care, before, during and after examination and treatment. The sample size of n=150 was reached after reading through the patient complaints data, and isolated all complaints on themes related to responsiveness and reliability. The 150 documented complaints were adequate for the purpose of providing a richer explanation of the quality arising from clinician and nurse interactions, with patients, before, during and after examination, diagnosis and treatment.

4.4 Sampling Technique

The qualitative phase of the research focused on a random sample of the population from which to capture perceptions of the use of HRM practices and quality of health care. The quantative phase took a census of all the documents that related to complaints on the responsiveness and reliability aspects of quality. The cross-sectional survey of health care provider's perceptions of HR practices and their influence on quality of health care was based on a sample of 97 respondents.

The quantitative phase of the study adopted simple random, stratified and purposive sampling techniques to identify the respondents on whom to administer the survey instrument. Random sampling ensured every individual within each stratum had an equal chance of being selected, for investigation. Stratified sampling ensured each category of health care providers were included in the final sample. Purposive sampling was used to ensure that the final list of respondents was drawn from the diagnostics, nursing or treatment departments. The purpose of the study was to establish the influence that recruitment, training, remuneration and performance management of clinicians and nurses had on the quality of diagnostics, nursing and treatment.

Table 3.4 shows the respondents based on simple random, stratified and purposive sampling techniques.

Table 3: Survey Respondents by Clinical Service Directorates

Service Directorate		Consultants	Medical Officers	Clinical Officers	Nurses	Total
Clinical Out Patient Services	General Outpatient	-	-	4	4	8
	Special Clinics	2	3	2	2	9
	Laboratory	1	-	-	-	1
	Civil Servants Clinic	-	1	-	2	3
	Maternal Child Health	-	-	2	2	4
	Gender Based Violence Unit	-	-	1	-	1
	Casualty/ High Dependency Unit	-	2	-	6	8
	Lab, Pharmacy, X Ray	1	-	-	-	1
	Main Theater	1	-	2	4	7
Clinical In Patient Services	Medical Wards	2	-	-	-	2
	Intensive Care Unit	2	3	1	-	6
	Amenity Ward	-	1	-	5	6
	Surgical Ward	2	3		8	13
	Eye Ward	-	-	2	-	2
	Obstetrics & Gynecology	1	3	-	8	12
	Pediatric Ward	1	-	5	8	14
		13	16	19	49	97

Source: JOOTRH (2017)

4.5 Research Instrument

The survey strand of the study relied on primary data, collected by use of a structured questionnaire, administered to clinicians and nurses. The document analysis strand of the study was based on secondary data consisting of documented complaints, from first-hand account of service encounters, and secondary accounts entered in the patient complaints register. The questionnaire elicited quantitative data on health care workers demographics, perception of HR practices adopted and perception of technical quality of health care (Johnson & Turner, 2003). The raw complaints and summaries in the complaints register were useful in capturing service or

functional quality from the perspective of clients and other external stakeholders. Thus it was possible to generate quantitative and qualitative data for the mixed methods design.

Quantitative data was captured using questionnaires while a document review guide facilitated capturing of the suggestion box documents. Questionnaires allow researchers to assign assignment of numeric values and statistical analysis of the data [36]. Questionnaires can be given to a large number of people and have relatively high rate of response often close to 100 % [21].

4.6 Data Collection Procedure

The researcher obtained permission from Kenyatta University on approval of the proposal to proceed on data collection. In conformity with the government policy, the researcher obtained a permit from The National Council for Science and Technology (NACOSTI Kenya), and also from the referral hospital where the study was carried out. An introductory letter was also prepared before proceeding to the field for data collection.

Equipped with these, the researcher then proceeded to administer the questionnaires that were dropped and picked later. Primary data, during the quantitative phase of the study, was collected using five research assistants trained prior to the exercise. The researcher supervised the assistants to ensure completeness of the responses in the collected instruments. The enumerators, once in a specific service area, were simply requested to find out if the health care professional is a nurse or a clinician.

Upon which it was possible to request for participation in the study, depending on the total number to complete the instrument in the section and number that already filled it up. To introduce objectivity in the study, the enumerators determined the Kth respondent to fill the instrument based on a snowball sampling strategy that involved getting the next respondent from the current one. This ensured that the enumerators took little time to access participants for the study, as the respondents knew each other.

Data collection procedures for the second phase entailed obtaining of patients complaints primary and secondary data from the hospital management. Data for document analysis was obtained from the secretary to the anti-corruptions committee, which is tasked with the handling of complaints. The data consisted of patient complaints file, with raw complaint documents, and register of complaints, incorporating secondary complaints data for the last quarter of the 2017/2018 financial year. The data from these documentary sources were analyzed based on a document analysis guide, included in appendix 3. The document analysis guide was useful in coding of the patient complaints data using the Qualitative Data Analysis (QDA) Miner Lite program. The coding scheme was based on taxonomy by Reader and his colleagues (2014) and the five dimensions of patient complaints by authors in [50].

4.7 Validity of Survey Research Instrument

Three types of validity applicable to this study were content validity, construct validity and face validity. Authors in [8] explain that in most cases, content validity of an original instrument is achieved by referring to the literature. Expert opinions were used in making sure the instrument yielded validity data. To enhance the

content validity, expert opinion from Professionals in this field, researcher's thesis supervisors were sought. Their comments were incorporated to improve the instrument. The face validity was enhanced by the instruments review. According to authors in [8], face validity is concerned with the way the instrument appears to the participant, as being insultingly simplistic, far too difficult, or too repetitive. Such flaws affect the respondent's willingness to complete the questionnaire. In the case of construct validity, a five point Likert scale was used. The Likert scale is where respondents gave their opinions or views that enabled the researcher collect data that was objective. There is need to develop sound evidence to demonstrate that the test interpretation matches its proposed use [14]. To ensure validity the researcher avoided leding questions and ensured that the wording of questions was simple and unambiguous. The researcher gave the questionnaire to the supervisor and peers to review to ensure its content validity. Finally, control questions were added in order to determine whether respondents were contradicting themselves.

4.8 Reliability of Survey Research Instrument

Cronbach alpha, whose values can range from zero to one, was used to gauge reliability of the survey instrument. Alpha can take values from zero to one and a coefficient of 0.7 and above indicates sound and reliable measures for further analysis [25]. Table 3.5 presents the SPSS reliability statistics for the study variables.

Table 4: Summary of Cronbach's Alpha Reliability Coefficients

Variable	No. of Items	Cronbach's Alpha
Recruitment Practices	5	0.903
Training Practices	5	0.827
Compensation Management Practices	6	0.812
Performance Management Practices	6	0.726
Quality of Health Care	22	0.923

Source: Survey Data (2017)

4.9 Quantitative Analysis of Survey Data

The current study examined the influence of human resource management practices on quality of health care by using regression analysis to test the hypothesized relationships. Following a description of the quality of health care and the tests of hypothesis, it was possible to identify the variables requiring further investigation. Use of a mixed methods design provided the methodology triangulation required to enrich and elaborate upon results gained from quantitative data [11]. The first phase of the quantitative analysis involved obtaining measures of summary and dispersion for hypothesis testing. Before the tests were carried out, data was examined for normality.

4.9.1 Tests of Normality

In testing for normality, a researcher is interested in finding a difference between groups, and looks for small probabilities. If the probability of finding an event is rare, and less than 5%, and we actually find it, that is of interest. When testing normality, an analyst is not looking for a difference. In effect, testing for normality implies finding if the data set is not different from the normal distribution, so that the null hypothesis is accepted. Thus when testing for normality, probabilities > 0.05 mean the data are normal, while probabilities < 0.05 mean the data are not normal.

The Kolmogorov-Smirnov and Shapiro-Wilk test of normality was used to establish if the survey data was from a normal population. For tests on samples of n = 3 to 2000 it is recommended to use Shapiro Wilk's test while for those of n > 2000 the use of Kolmogorov-Smirnov test is recommended [44]. The data in this study was drawn from a sample of 97 respondents, thus the test by Shapiro Wilk's test was useful in establishing the normality of the distribution.

Statistical tests were preferred to graphical methods, of normality tests, being more precise as they report actual probabilities. The hypotheses tested were:

H_o: The sample data are not significantly different than a normal population

H_a: The sample data are significantly different than a normal population.

Using SPSS version 20 it was possible to test the normality of all the five variables in the study. Table 3.6 presents the results of the statistical tests of normality.

Table 5: Tests of Normality

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Recruitment practices	.124	78	.005	.948	78	.003
Training practices	.098	78	.060	.978	78	.208
Compensation management practices	.078	78	.200*	.979	78	.215
Performance management practices	.105	78	.034	.969	78	.053
Quality of health care	.048	78	.200*	.986	78	.548

[a] Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Table 3.6 shows that the probabilities for all the variables, with the exception of recruitment practices were greater than 0.05, for both the tests. When testing for normality, probability of less than 0.05 means that the data

are not normal. From Table 3.6 it is evident that data for recruitment practices, whose probability value of 0.003, for Sharpiro-Wilk test, is not normal. The probability of 0.003 is far lower than the decision value of 0.05 hence we reject the null hypothesis that there is no statistically significant difference between the sample and the normal population. The alternative hypothesis that there is a statistically significant difference between the sample and the normal population is accepted.

The data for all the variables, were however, transformed using the $\log_{10}$ function in SPSS to facilitate subsequent analysis and inferences based on the assumption of normality in distribution of responses. Further, the transformation of both the dependent and independent, variables enabled the researcher to interpret the results much more easily, as transformed values are in percentages.

4.9.2 Descriptive and Inferential Analysis of Survey Data

Descriptive statistics provided the techniques for summarizing the extent of agreement with statements on the human resource management practices adopted by the facility and quality of health care. Tables and were used to present the mean rates of agreement and extent of variability in responses. Charts provided a visual illustration of the descriptive statistics analysis was useful in presenting the main characteristics of the sample data using mean and measures of dispersion.

Inferential analysis involved testing the hypothesized relationships between the independent and dependent variables. The study applied multiple regression analysis to the $\log_{10}$ of the dependent and independent variables. The general model for predicting quality of health care is represented by the following $\log_{10}$ - $\log_{10}$ model:

$$\log_{10} Y = \beta_1 \log_{10} X_1 + \beta_2 \log_{10} X_2 + \beta_3 \log_{10} X_3 + \ldots + \beta_n X \log_{10n} + \varepsilon$$

Where Y is the dependent variable and is a $\log_{10}$ linear function

$\log_{10}X_1$, $\log_{10}X2$, $\log_{10}X3$, … $\log_{10}Xn$ plus$+ \varepsilon$.β_{1-n} are the regression coefficient or change induced in Y by each X, X1-n are independent variables,

$+ \varepsilon$ is the error term that accounts for the variability in Y that cannot be explained by the linear effect of the predictor variables. The estimate model for the quality of health care for Jaramogi Oginga Odinga was expressed as:

$\log_{10}(QHC) = C + \beta_1 \log_{10}(RP) + \beta_2 \log_{10}(TP) + \beta_3 \log_{10}(CMP)_+ \beta_4 \log_{10}(PMP)_+ e$

Where

QHC=the predicated mrean score on the dependent variable, quality of health care

C = the value of Y when all predictor variables are equal to zero

β_1= the % change in QHC resulting from a 1% change in Recruitment Practices

RP = is the mean score of Recruitment Practices.

β_2= the % change in QHC resulting from a 1% change in Training Practices

TP = is the mean score of Training Practices.

β_3= the % change in QHC resulting from a 1% change in Compensation Management

CMP = is the mean score of Compensation Management Practices

β_4= the % change in QHC resulting from a 1% change in Performance Management

PMP = is the mean score of Performance Management Practices.

e = error term

The regression analysis enabled the researcher to determine the R^2 value, showing the percentage variance in the dependent variable that can be anticipated from HRM practices. The ANOVA isolated the regression coefficients for each of the predictor variables and tested their significance in predicting quality of health care. Quality of health care was captured using self-reports by health care professionals and document analysis.

Content analysis provides a systematic and objective means to make valid inferences from verbal, visual, or written data in order to describe and quantify specific phenomena [34]. On the other hand, the analytic procedure for document analysis entailed finding, selecting, appraising, and synthesizing data contained in documents. Document analysis yields data, in the form of excerpts, quotations, or entire passages, that are then organised into major themes, categories, and case examples specifically through content analysis [29] .

4.10 Content Analysis of Patient Complaint Data

Content analysis is both a quantitative [28] and a qualitative methodology useful in inductive or deductive analysis [6] . Content analysis facilitates capturing of the frequency by which themes or facts in the text occur [28] to answer questions about how many [37] . In the current study, quantitative content analysis of patient complaints helped to capture functional quality aspects of health care at JOOTRH. The choice of analysis method depends on how deep within the analysis the researcher attempts to reflect the informants' statements about a subject. In turn, this affects the number of informants needed and in the way in which data are to be collected [5].

The researcher has to choose whether the analysis is to be a manifest analysis or a latent analysis. In a manifest analysis, the researcher describes what the informants actually say, stays very close to the text, uses the words themselves, and describes the visible and obvious in the text. In contrast, latent analysis is extended to an interpretive level in which the researcher seeks to find the underlying meaning of the text, which is what the text

is talking about [6]   .

The current study adopted a manifest analysis since the qualitative analysis of complaints focused on triangulation of methodology for measuring quality of health care by incorporating both service and patients views. Quantitative content analysis has been used to capture patient's satisfaction with quality of care in hospitals [34]. Authors in [43] developed a coding taxonomy for patient complaints through a systematic review of 59 studies.

This consisted of three distinct domains of complaint of safety and quality of the clinical care received, the management of health care organizations, and problems associated with health care staff-patient relationships. Authors in [50] built on the three domains by authors in [43] and developed a coding framework with five dimensions of patient complaints. These included complaints that occurred before, during, or after the patient received health care from a specific physician, consisting of the physician or clinical officers attitude, therapeutic effect, ignorance of patient, limited treatment time, and misconduct or bad attitude of the nurse and/or other staff.

The current study focused on providing a quantitative analysis of patient complaints based on the five dimensions to capture aspects of functional quality. The purpose of document analysis was to capture functional quality, which revolved around the process of medical consultation at the teaching and referral hospitals. Hence, the framework by authors in [43] and the five dimensions of patient complaints by authors in [50] was useful in establishing patient views on functional quality.

4.10.1 Coding Framework

The analysis of patient complaints was through the use of Qualitative Data Analysis Software (QDA) Miner Lite. The document analysis guide developed by the researcher provided a basis for coding of the documented complaints, using the five dimension coding framework. The analysis captured included identity of complainant and the dimensions of complaints. The identity of the complainant was coded into four types including patients themselves, patient's close relative, including spouse, parent, or a grown-up child, a patient's other relative, and other relationships not specified.

Meanwhile, some complainants also identified themselves as referred patients. Therefore, the study coded (1) for referral patients and (0) for primary case patients. For the coding scheme relating to complaints, the study followed the workflow of a health service delivery provider at Jaramogi Oginga Odinga teaching and referral hospital. Generally, if a patient wants to see a doctor or clinical officer, he or she must register for that medical records desk before a face-to-face consultation can occur. This was coded as the premedical consultation stage. During this stage, complaints include topics such as registration and waiting room issues and time taken before consultation.

During medical consultation, four sub stages identified were overall perception, preliminary diagnosis, examination, and the closure of consultation. The first, overall perception is the immediate evaluation of a doctor or clinical officer's attitude and their communication with the patient. Preliminary diagnosis relates to the

first contact experienced between the doctor or clinical officer and patients. At this stage, techniques like looking, listening, questioning, and feeling the pulse of the patient facilitates diagnosis.

In the examination stage, a medical device is applied to the patient, such as computed tomography film or a blood pressure monitor. The closure of consultation refers to when the patient is about to leave the hospital, with complaints typically concerning bills. After the consultation, patients may start to evaluate the effect of the treatment, if any. This research coded this as post consultation, with a focus on the patient's perception of effect. Each of the complaint areas was coded with 4 to 9 items.

4.11 Ethical Considerations

Ethics involves consideration of right and wrong, before, during and after the study.

The researcher observed fairness and trust to a variety of stakeholders. Confidentiality was assured to the participants and the report was edited to protect identity of individuals.

 Abidance to ethical considerations was met by evaluating the research against Kenyatta University (KU) ethics checklist as well as clearance with NACOSTI.

5. Results

5.1 Response Rate

The quantitative analysis of survey data was based on a total of 97 questionnaires issued out to the consultants, medical officers, clinical officers and nurses at JOOTRH. The response rate is presented in Table 4.1 below.

Table 6: Survey Response Rate

Response	No	Percent
Response	78	80
Non Response	19	20
Total	97	100

Source: Survey Data (2017)

The 80% response rate in Table 4.1 is excellent for quantitative research in Social Sciences (Gall, Borg, & Gall, 1996).

The response rate of 80% reported in Table 4.1 is considered adequate for making inferences about the population from the sample.

5.2 Respondents Characteristics

Table 7: Respondent's gender

Gender	Frequency	Percent
Female	33	81
Male	45	19
TOTAL	78	100

Source: Survey Data (2017)

Figure 2: Respondents Gender

Data in Table 4.2 shows that over 80% of health care staff at JOOTRH were females. Figure 4. 2 provides a pictorial illustration of the Gender of JOOTRH health care staff.

Source: Generated from Table 4.2

Table 8: Length of Service at JOOTRH

Length of service	Frequency	Percentage
Less than 1 year	10	13
1 – 3 years	15	19
4 – 8 years	15	19
8–12 years	12	15
over 12 years	26	33
Total	**78**	**100**

Source: Survey data (2017)

The results in Table 4.3 shows that almost half (48%) of the respondents had served for more than eight years and were likely to respond adequately to questions on the influence of HRM on quality of health care. Figure 4.3 illustrates the percentage of respondents for each category of service length of service at the facility.
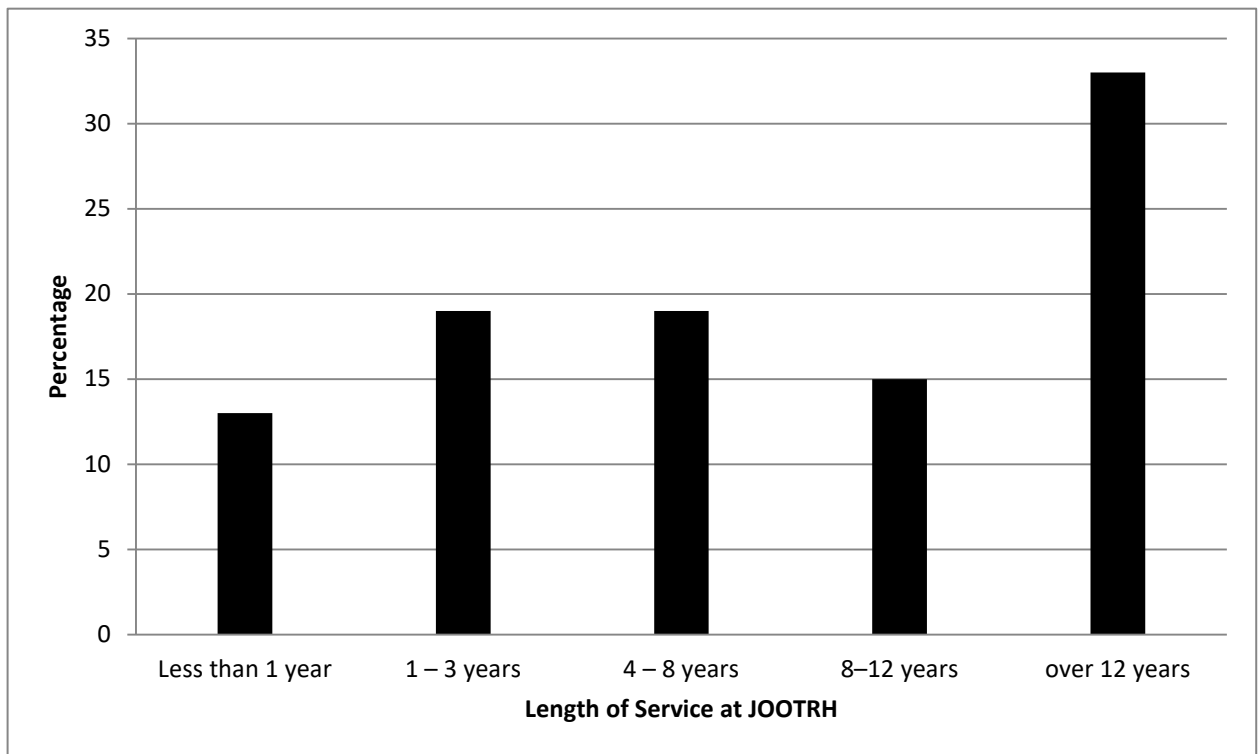

Figure 3: Length of Service at JOOTRH

Source: Generated from Table 4.3

Figure4. 3 shows that slightly over 30% of the staff had been employed before conversion of the Nyanza Provincial Hospital into a teaching and referral hospital in 2012. The length of service in the health care sector was captured and presented in Table 4.4.

Table 9: Length of Service in the Health Care Sector

Length of Service	Frequency	Percent
Less than 1 year	3	3.8
1 – 3 years	12	15.4
4 – 8 years	15	19.2
8–12 years	9	11.5
Over 12 years	39	50.0
Total	78	100.0

Source: Survey data (2017)

Results in Table 4.4 shows that over 60 percent of respondents had worked for over 8 years. Figure 5.4 illustrates the data in Table 4.4.
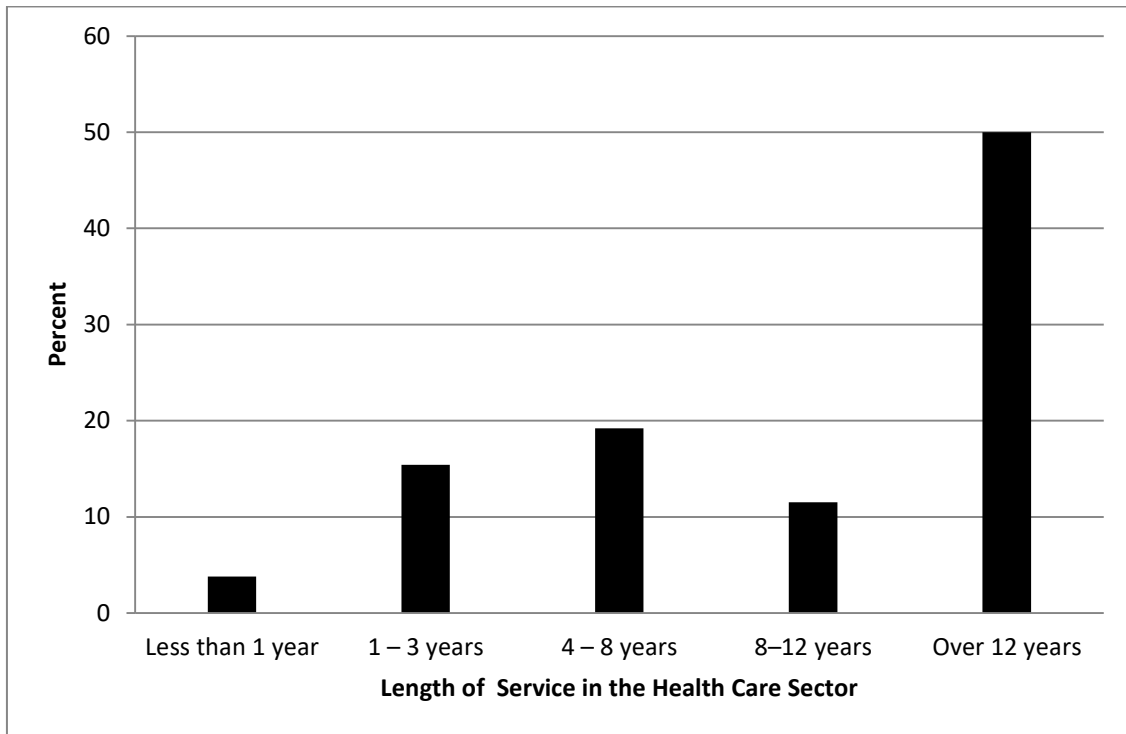

Figure 4: Length of Service in the Health Care Sector

Source: Generated from Table 4.4

The bar chart in Figure 4.4 illustrates that almost all the respondents had been in service long enough to experience the effect of recruitment, training, compensation and performance management practices on quality of health care.

Table 10: Level of Education

Highest academic qualification	Frequency	Percentage
Ph. D	1	1
Masters	9	12
Bachelors	31	40
H. Diploma	11	14
Diploma	19	24
KCSE	7	9
Total	78	100

Source: Survey data (2017)

From Table 5.5 the highest academic qualification was a PhD degree while and the lowest was a Secondary school certificate. Figure 5.5 illustrates the data in Table 5.5
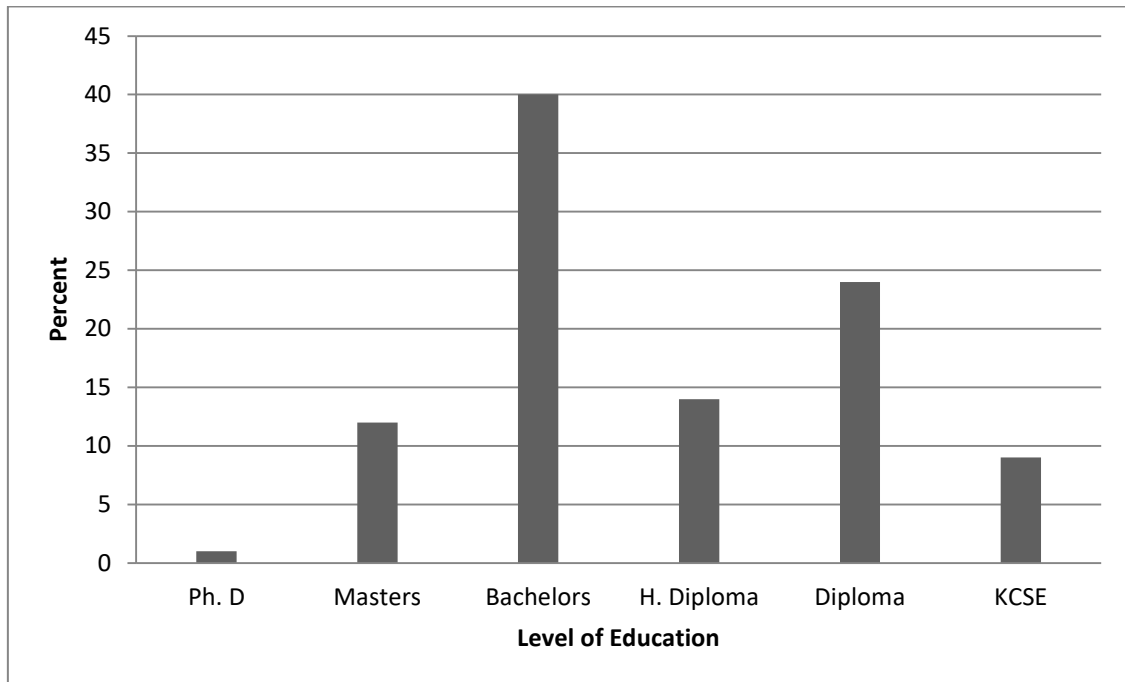

Figure 5: Level of Education

Source: Generated from Table 4.5

Figure 4.5 illustrates that the highest number of those interviewed possessed a bachelor's degree. This could be interpreted to mean that the respondents are knowledgeable enough to respond adequately to the questions in the study.

Table 11: Area of Specialization

Specialization	Frequency	Percentage
Clinical Medicine	33	42
Nursing	45	58
Total	**78**	**100**

Source: Survey data (2017)

Table 4.6 shows that over half or the health care professionals interviewed had specialized in the provision of nursing care. The current study focused on the influence of human resource management practices on quality of health care. Quality of health care was measured from the perspectives of health care service providers. Service personnel and the service setting are the two significant elements in determining the quality of the service encounter [17]. Thus the data I Table 4.6 shows that respondents were either concerned with diagnosing patient problems or providing nursing care. This may be interpreted to mean that, being the caregivers, they were well

placed to answer questions relating to quality of care at JOOTRH.

Table 12: Job Designation of Respondents

Designation	Frequency	Percent
Consultants	5	6
Medical Officers	12	15
Clinical Officer	14	18
Nursing Officers	47	60
Total	78	100

Source: Survey Data (2017)

Table 4.7 shows that over 60% of the respondents interviewed were specialized as nurses and slightly more than 5% reporting were consultants. Figure 5.7 illustrates the data in Table 4.7
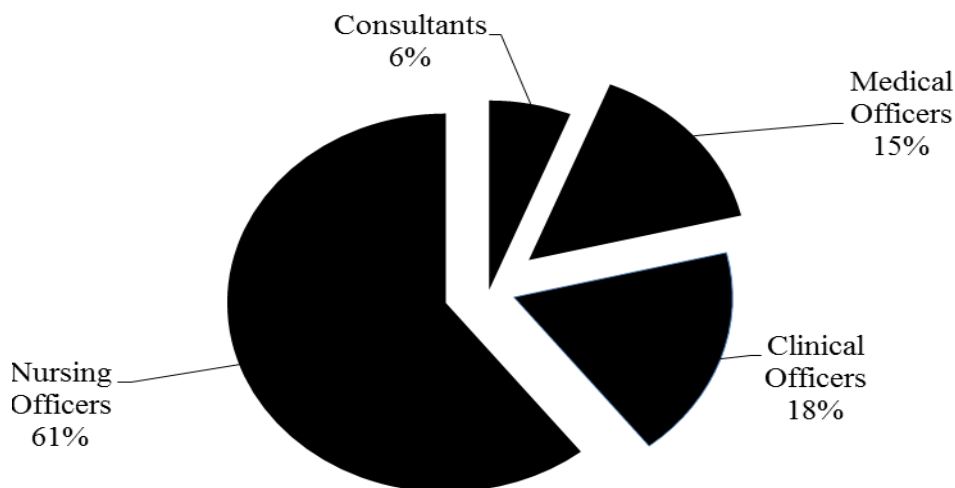

Figure 6: Respondents' Job Designation

Source: Generated from Table 4.7

Figure 4.7 shows that over 60% of respondents were tasked with providing nursing care while the rest provided diagnostic services. All the categories of respondents were tasked with coo production health care service and could express an opinion about the quality of care provided by the health care facility. These were professional health care providers that are expected to be informed about the technical quality of care and the influence of HRM practices on quality of health care.

5.3 Descriptive Statistics of the Study Variables

The next section provides means and standard deviations of responses which provided the basis of testing the

study hypothesis. The study hypothesized that there was no significant relationship between human resource management practices and quality of health care in teaching and referral hospitals. Section 4.3.1 presents results relating to the dependent variable while section 4.3.2 captures means and standard deviations for the predictor variables.

5.3.1 Quality of Health Care at Jaramogi Odinga Teaching and Referral Hospital

Quality of health care can be viewed from clinician, patient, payer and society perspectives [54]   . Recent studies based on personal opinions of quality have tended to focus on an internal perspective of quality [1]   . Phase 1 of the study adopted a clinician view of quality while in phase 2 a patient view of responsiveness and reliability of service was investigated. This enabled the researcher to obtain a summary and dispersion measure of quality required to test the quantitative hypothesis and further offer an explanation of the results using complaint data obtained during the interaction before, during and after the consultation and treatment.

Despite being the ultimate recipients of care, patients lack the technical knowledge to judge the quality of service delivered [31]. Authors in [42] identify barriers to use of patient surveys to measure health care quality, such as data not being user centered and linked to processes, large organizational size, complex structures, lack of time and skepticism. The current study carried out a document analysis of patient complaints as a technique to corroborate and explain opinions of health care staff on quality of health care.

During Phase 1 of the study, the opinion of clinicians and nurses was measured by a Likert instrument anchored, on a five point scale ranging from 1=Not at all to 5= to a very large extent. The study adopted a mean score of greater than 4.50 to mean agree to a very large extent, between 3.50 and 4.49 means that the respondents agree to a large extent, between 2.50 and 3.49 means moderately agree, between 1.50 and 2.49 means agree to a small extent while a score of between 0 and 1.45 means that respondents did not agree at all.

Table 4.8 presents the clinicians and nurses personal evaluation of quality health care

Table 4.8 shows that the mean responses to the questions asked under each attribute of health care quality were above a mean score of 3.00. Overall, the personal evaluation of clinicians and nurses shows that to a large extent (mean =3.54) the hospital provided health care that leads to desired health outcomes and are consistent with current professional knowledge. The results in Table 5.8, shows that clinicians and nurses moderately agree (mean= 3.28) that the hospital staff are willing or ready to provide services in a timely manner.

The aggregate score for tangibles (mean= 3.67) shows that the clinicians and nurses agree to a large extent that the physical service environment of the hospital was conducive to provision of quality health care. Likewise, they were of the opinion that to a large extent (mean =3.67) the hospital staff were able to perform the promised service dependably and accurately. It was further revealed that to a large extent that staff were courteous, knowledgeable, and able to inspire trust and confidence in patients (mean =3.53), and were caring and able to provide individualized attention to the patients (mean = 3.61).

Table 13: Summary Statistics for Quality of Health Care

Statements	Mean	Standard Deviation
Tangibles		
We have modern equipment	3.62	1.105
The hospital's physical facilities are visually appealing.	3.42	1.521
The hospital's employees appear neat.	3.71	1.66
The materials used in the hospitals are visually appealing	3.92	1.112
Aggregate score for Tangibles	3.67	1.35
Reliability		
We show sincere interest on solving our patients' problems	3.51	0.705
We perform services right the first time	3.72	1.821
We provide services at the time we promise to do so.	3.58	1.507
We are accurate in billing our patients	3.71	1.912
Aggregate score for Reliability	3.63	1.49
Responsiveness		
We tell patients exactly when services will be performed.	4.08	1.305
We provide prompt services to our patients	3.52	1.021
We are always willing to help our patients	3.27	1.070
We are never too busy to respond to our patients' request	3.83	1.012
Aggregate score for Responsiveness	3.28	1.109
Assurance		
Patients feel safe interacting with employees	3.54	1.105
We can be trusted by our patients	3.56	1.521
We are consistently courteous to our patients	3.49	1.660
We have the required knowledge to answer our patients' questions	3.53	1.112
Aggregate Score for Assurance	3.53	1.35
Empathy		
We give individual attention to our patients	3.69	1.305
We have convenient working hours for our patients	3.49	1.401
We give personal care to our patients	3.49	1.127
We have our patients' best interest at heart	3.56	1.221
We understand the specific needs of our patients	3.90	1.511
Aggregate Score for Empathy	3.61	1.32
Aggregate Grand Score	3.54	1.324

Source: Survey Data (2017)

The results in Table 4.8 shows that the clinicians and nurses were of the opinion that Jaramogi Oginga Odinga teaching hospital is to a large extent (mean =3.54) able to provide quality health care. This finding is based on an internal evaluation of quality of services using the SERVPERF instrument which has become an alternative measurement scale of SERVQUAL [55]. Authors in [9] mentioned that SERVPERF was the most superior model among all service quality models. The study performed a replication and an extension of SERVPERF whose results supported the work of authors in [16].

5.3.2 Compensation Management Practices at JOOTRH

Table 14: Compensation Management Practices

Statement	Mean	Standard Deviation
Competitive salary motivates us to offer quality health care	2.50	1.100
Quality of health care depends on performance based earnings	2.96	1.207
Salary delays affects quality of health care provided to patients	2.74	1.070
Earnings based on group performance improves quality of care	2.60	1.010
Performance appraisal is used for rewarding employees	2.50	1.305
Promotion of health workers results in delivery of quality health care	2.01	1.412
Aggregate score	2.55	1.184

Source: Survey Data (2017)

In Table 4.9 respondents were of the opinion that competitive salary (mean = 2.50), performance based earnings (Mean = 2.96),salary delays (2.74), and group earnings (2.60) had moderate influences on quality of health care. The results also show that respondents were in moderate agreement that performance appraisal serves as a benchmark for rewarding employees (Mean = 2.50). Finally, they agreed to a small extent that promotion of workers results in delivery of quality health care (2.01). Overall, the results in Table 4.11 revealed an aggregate mean score of 2.55 indicating compensation management had a moderate influence on quality of health care. The frequency of strikes by health care workers in Kenya and the opinion by respondents that compensation has a moderate effect on quality of health care is a pointer to inadequate compensation at the facility.

Compensation strategy is seen as one of the most important strategies in HRM function as it influences the productivity and growth of an organization [38]. Very competitive package has been ranked first among the list of factors attracting workers [22]. Authors in [51] established that most current employees are ready to quit if offered another job with better terms of service. Compensation can attract and retain employees[26] . It may be concluded that the rating showing moderate agreement with statements on the likely influence of adopting the practices points at its being rated as unimportant influence on provision of quality.

5.4 Regression Analysis and Hypothesis Testing

This study was based on the premise that there is a relationship between compensation management practices and quality of health care. To establish the statistical significance of the respective hypotheses, simple and multiple regressions analysis were conducted at 95% confidence level. The results of normality tests required that the statistical package for social scientists (SPSS) is used to develop a log-log level model of the effect of HRM practices on quality of health care. This involved carrying out log_{10} transformations on both the dependent and predictor variables. As authors in [27] explain, log transformations are valuable both for making patterns in

the data more interpretable and for helping to meet the assumptions of inferential statistics. Table 4.10 presents the coefficient of determination for the log-log level regression model.

Table 15: Goodness of Fit Test for Compensation Management Practices and Quality of Health Care

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.470[a]	.221	.178	.07682

a. Predictors: (Constant), $\log_{10}$Competitive Salary, $\log_{10}$Financial Incentives, $\log_{10}$Group Bonuses

Source: Research Data (2017)

The results in Table 4.10 show the coefficient of determination for testing the goodness of fit of the log-log regression model. From the table together, the Compensation Management practices of competitive salary, financial incentives, and group bonuses explained 22.1 % of variation ($R^2 = 0.221$) in quality of health care.

R^2 is a statistic that will give some information about the goodness of fit of a model. In regression, the R^2 coefficient of determination is a statistical measure of how well the regression predictions approximate the real data points. An R^2 of 1 indicates that the regression predictions perfectly fit the data. Values of R^2 outside the range 0 to 1 can occur when the wrong model was chosen, or nonsensical constraints were applied by mistake.

While R-squared provides an estimate of the strength of the relationship between your model and the response variable, it does not provide a formal hypothesis test for this relationship. The F-test of overall significance determines whether this relationship is statistically significant. This test was used establish the significance of the log-log regression model. The ANOVA report in Table 5.13 assesses overall significance of the regression model.

Table 16: Analysis of Variance for Quality of Health Care and Compensation Management Practices

Source	*Df*	*SS*	*MS*	*F*	*p*
Regression	4	.122	.031	5.180	.001[a]
Residual	73	.431	.006		
Total	77	.553			

a. Predictors: (Constant), $\log_{10}$Competitive Salary, $\log_{10}$Financial Incentives, $\log_{10}$Group Bonuses

b. Dependent Variable: $\log_{10}$ Quality of Health Care

Source: Research Data (2017)

In Table 4.11 the column labeled Sig. shows the significance of the F test applied to the hypothesis. The columns labeled Sig. are p values which give results of hypothesis test. The p values refer to a list of collection of independent variables. If the Sig. value shown next to the F-test value were less than .05, we would conclude

that the correlation coefficient is significantly different from 0.

In Table 4.11 the p value is 0.001<0.05 and therefore we accept the alternative hypothesis that at least one independent variable is a significant predictor of the dependent. That is, we would reject the H_0, and conclude that there is a significant positive linear relationship between the predictor variables and response variable.

In this case, Table 5.13 shows that the R square = .221 is significant because the probability value (Sig. = .001) is less than .05. With a significant correlation, it now makes sense to examine the regression equation in order to make predictions. Had the correlation not been significant, we would not be able to justify the use of the regression equation. The analysis of variance proceeded the establishment of significantly each of the independents predicts the dependent variable. This was possible after establishing the coefficients of the regression model and the significance of the statistical test. Testing of the null hypothesis was achieved by running SPSS for the parameter coefficients in the regression model. Table 4.11 presents the parameter coefficients of the regression model.

Table 17: Regression model coefficients for Compensation Management practices and quality of health care

Variables	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	*Beta*	*T*	*Sig*
(Constant)	1.377	.167		8.231	.000
$\log_{10}$Competive Salary	-.044	.083	-.057	-.529	.598
$\log_{10}$Finacial Incentives	.167	.113	.159	1.470	.004
$\log_{10}$Group Bonuses	-.079	.063	-.142	-1.263	.210

a. Dependent Variable: $\log_{10}$QHC

Source: Research Data (2017)

In Table 4.12 the research hypotheses were tested by comparing the decision rule p value of 0.05 with predictor variables p values. The decision rule states that if p<0.05 reject the null for non-significance and conclude that the independent variable is a significant predictor of the dependent variable. The study hypothesized no significant influence of competitive salary, financial incentive and group bonuses on quality of health care.

The test related to the influence of compensation management practices (competitive salary, financial incentives and group bonuses) on quality of health care at JOOTRH. The p-value of group bonuses in Table 4.12 (p=.210) is greater than the decision rule p-value (p =<0.05) hence the study accepted the third null hypothesis, Ho_3, that there is no statistically significant influence of group bonuses on quality of health care. This finding can be interpreted to mean that group bonus is a practice whose influence is not significant at the hospital. The finding on the negative influence of group bonuses on performance is not surprising and replicates studies in hospital environments. Authors in [39] in a study of Turkish government hospitals found concludes that poor performance was due to lack of interest by the managers in government hospitals to provide better conditions to hospital's staff and develop incentives system.

The study recommended the adoption of incentives system and rewards for staff and nurses who perform well. Further it recommended choosing a group each month as a role model for individuals working and to encourage other staff who have not been selected. Finally, the study found that adopting incentive system improved the performance of all individuals working in the hospital dramatically.

The finding relating that group bonus is not being a significant predictor of quality at JOOTRH is explained by recent unrests at public hospitals. Currently, compensation of public hospital staff is decided by the devolved and central government units with hospitals having no say in the design of packages. It may be argued that the hospitals are therefore not able to adopt innovative practices which could be motivating and focused on enhancing quality of health care.

6. Conclusions

The quantitative analysis of the demographics established that the percentage of females employed at the hospital was way above the constitutional gender threshold of a third of county employees being female. The majority of the clinicians and nurses were recruited after the hospital had been elevated to a teaching and referral hospital in 2012. Regarding experience in provision of health care services, nearly all clinicians and nurses had served for more than one year since their initial training. On the highest academic qualifications, data indicated that over half of the health care workers had attained university level of education. In terms of specialization those who were offering nursing services were slightly more than the clinical officers, medical officers and consultants put together. The personal evaluation of the quality of health care, by clinicians and nurses shows that to a large extent the hospital provided health care that leads to desired health outcomes and is consistent with current professional knowledge quality.

The study revealed that clinicians and nurses moderately agreed that the hospital staffs are willing or ready to provide services in a timely manner. It was also established that to a large extent that the physical service environment of the hospital was conducive to provision of quality health care. Likewise, they were of the opinion that to a large extent the hospital staffs were able to perform the promised service dependably and accurately. Finally, findings revealed that to a large extent that staff were courteous, knowledgeable, and able to inspire trust and confidence in patients, and were caring and able to provide individualized attention to the patients.

The descriptive statistics on the group bonuses was considered the least important in driving the delivery of quality health care with clinicians and nurses expressing the opinion that it had a a moderate influence on quality of health care. However, competitive salary and financial incentives were found to be the greatest drivers of quality healthcare in JOOTRH. Several recommendations for improving quality of health care at JOOTRH from the empirical results. The results of the quantitative phase of the study indicated that whereas the facility offered quality health care, its ability to recruit and remunerate clinicians and nurses was in doubt. Thus it may be recommended that the facility considers investigating how it can adopt a strategic approach to recruitment and compensation, within the devolved framework of managing HR for health in Kenya.

The results of the qualitative Phase of the study suggested that the management can ensure that its patients don't complain of the responsiveness and reliability of health service by engagement of more staff and adequately compensated them. In this way the facility would minimize the complaints relating to delays in registration, examinations and diagnosis. Further, the management can introduce the use of a ticketing system to reduce delays during registration, lab investigations and dispensing of prescriptions. In that way the overall service experience by the patients will be improved.

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