

Role of Top Management Support in Health Workforce Performance: A Cross-Sectional Survey in ISO 9001:2008 Certified Kenyan Public Health Hospitals

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Abstract

This study sought to establish the role of Top Management Support in health workforce performance in the Kenyan public health sector among the ISO 9001:2008 certified hospitals. Poor performance of health workers poses a major challenge for improving service delivery in developing countries like Kenya and leads to inaccessibility of care and inappropriate care, which thus contributes to reduction in health outcomes as people are not using services or are mistreated due to harmful practices. Few studies have investigated the effect of Top Management Support in ISO 9001:2008 certified hospitals on outcomes such as health workforce performance especially in Kenya. The research design adopted for this study was cross-sectional survey. Survey questionnaires were used to collect quantitative data. Data obtained was analyzed qualitatively through factor analysis, descriptive analysis, correlation analysis and regression analysis. The study found that top management support was a significant predictor of health workforce performance. The general conclusion that was drawn from the study findings is that Top Management Support in ISO 9001:2008 certified hospitals plays a significant role in health workforce performance. The study recommends that the Kenyan Government should consider facilitating other public hospitals to be ISO 9001:2008 certified because the study showed that Top Management Support in ISO 9001:2008 certified hospitals has led to better health workforce performance.

Keywords: Top Management Support, ISO 9001:2008 Quality Management System, Health Workforce performance

1. Introduction

Within many health care systems worldwide, increased attention is being focused on human resources management. Specifically, human resources are one of three principle health system inputs, with the other two major inputs being physical capital and consumables. Human resources, when pertaining to health care, can be defined as the different kinds of clinical and non-clinical staff responsible for public and individual health intervention. Arguably, the most important of the health system inputs, the performance and the benefits the system can deliver depend largely upon the knowledge, skills and motivation of those individuals responsible for delivering health services (Buchan, 2004). The dimensions of the human resources crisis in health have been reported in stark terms in publications and studies by the Joint Learning Initiative (JLI, 2005) and the World Health Organization (WHO, 2006a) amongst other studies and reports.

Human resource professionals face many obstacles in their attempt to deliver high-quality health care to citizens. Some of these constraints include budgets, lack of congruence between different stakeholders' values, absenteeism rates, high rates of turnover and low morale of health personnel (Zurn, Dal Poz, Stilwell & Adams, 2004). Public health systems require effective HRM for quality health system performance. How well providers deliver services to patients depends on the processes that define, deploy and organize the workforce (Buchan, 2004). This therefore calls for sound and effective top management support. According to Chen et al. (2004), the major challenges to building an effective health-care workforce in developing countries include; low absolute numbers of trained health workers, difficulties in recruiting, retaining, and managing health workers, the impact

of HIV on the health workforce and poor health-worker performance. African countries have a very low density health workforce compounded by poor skill mix and inadequate investment and trained healthcare staff continue to migrate from Africa to more developed countries (Chen et al., 2004).

Despite the Kenyan Government aspiration that the health sector should provide quality services to the public, there is no health policy to provide a framework on how organizations should manage quality (International Finance Corporation, 2011). This therefore calls for exploration of other frameworks such as ISO 9001:2008 quality management system certification that can provide quality services. According to Chankova et al. (2006), the Kenyan public sector owns 60 percent of all health care facilities in the country. The current public health care delivery system consists of three levels of care: primary, secondary, and tertiary. The tertiary level comprises national referral and teaching hospitals, of which are the two ISO 9001:2008 certified hospitals in the entire country. The secondary level consists of seven provincial general hospitals and 144 district hospitals. The primary level consists of 489 health centers and 1,540 dispensaries, which are crucial points of preventive and limited curative services.

Although ISO 9001 has been implemented in many organizations for years, most research in the literature has focused on the applicability and effectiveness of ISO 9001:1994/2000 in private-sector settings (Park, Kim, Kang, & Jung, 2007). There is a dearth of literature reporting this important aspect, its applicability and effectiveness in the public sector (To, Lee, & Yu, 2011). Similarly in the Kenyan service sector and especially the public health sector, there is hardly any empirical study and literature on the role of Top Management Support, as an important factor in ISO 9001:2008 quality management system certification, on health workforce performance. More studies in Kenya on ISO 9001:2008 and service delivery need to be carried out (Aluvi, 2009).

2. Literature Review

This section reviews literature making contributions to the current study.

2.1 Top Management Support

ISO 9001:2008 requirements should be aligned with organizational goals and strategies, and it should change many aspects such as culture and employee ways of thinking. In this stage, top management leadership is very important. Top management plays a crucial role in integrating the standard with organizational goals and strategies, allocating sufficient resources, and monitoring organizational efforts. Using the support of top management, project team members provide employees with quality-centered training that is helpful to understand the mechanisms of ISO 9000 and its techniques (Balzarova, Bamber, McCambridge, & Sharp, 2004). When employees have a better understanding of the standard, it could be easy for them to be motivated and involved in the organizational efforts (Park et al., 2007). Organizations also provide various communication channels to encourage employee communication and knowledge sharing (Balzarova et al., 2004).

2.2 The Concept of Health Workforce Performance

WHO (2006) defines health workers as all people engaged in actions whose primary intent is to enhance health. A new more operational framework that has been recently proposed by Dal Poz, Gupta, Quain, & Soucat (2009) divides health workers into three categories. The first category being those with health education and training working in the health sector, second category being those with training in a non-health field (or with no formal training) working in the health sector and the third category being those with health training who are either working in a non-health-care-related industry, or who are currently unemployed or not active in the labour market. The sum of the three categories yields the total potential health workforce available in health care delivery.

Health workforce performance is critical because it has an immediate impact on health service delivery and ultimately on population health. A well-performing workforce is one that works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given available resources and circumstances. The performance of the health workforce plays a crucial role in the improvement of health outcomes due to its impact on accessibility to health services and appropriateness of care provided to service users (Dieleman & Harnmeijer, 2006). Performance is not only crucial for policy, but serves as a powerful tool for influencing the behaviour of health workers if linked to rewards and sanctions. It also interrelates with other key human resources for health strategies, such as recruitment and retention, which have limited impact without interventions to improve the performance of health workers (World Health Report, 2006). The report further

states that health workforce performance can be measured through indicators related to availability, competency, responsiveness and productivity. Therefore, Strategies to boost worker performance are critical for four reasons. First, they will be likely to show results sooner than strategies to increase numbers, secondly, the possibilities of increasing the supply of health workers will always be limited and fourthly, a motivated and productive workforce will encourage recruitment and retention (World Health Report, 2006).

2.3 The Concept of ISO 9001:2008 Quality Management System Certification

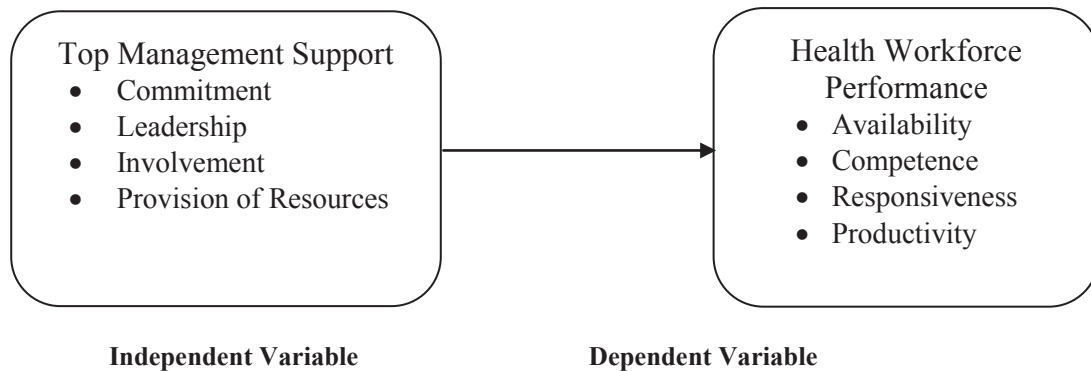
It is a world trend that government departments, statutory bodies and other public organizations have to undergo transformation in order to become more efficient, effective and accountable (Piana & Torres, 2003) and to provide consistent, good quality services (Saner, 2002). To achieve this end, an increasing number of companies are developing or adopting a quality management system (QMS) (Magd, 2008). In many instances, such a QMS is established in association with certification under ISO 9001:2000 which is the only standard in the ISO 9000 family against which companies can be evaluated and certified by an external agency. ISO 9001:2000 international quality standard was revised to ISO 9001:2008 standard which according to ISO, introduces no new requirements but does clarify the existing requirements of ISO 9001:2000 (International Organization for Standardization, 2008). This trend is confirmed by a survey of the International Organization for Standardization (ISO, 2010), that found at least 1,109,905 ISO 9001 certificates had been issued in 178 countries up to the end of December 2010, representing an increase of 45,120 (4%) over 2009 (ISO, 2009).

The purpose of the ISO 9001 standard is to assist companies of various sizes in any sector to implement and operate an effective QMS by enhancing the firm's ability to design, produce, and deliver quality products and services (Sroufe & Curkovic, 2008; Wahid & Corner, 2009). The standard provides guidelines on procedures, controls and documentation for a QMS to help a company identify mistakes, streamline its operations and maintain a consistent level of quality (Karthi, 2004). This standard requires a company to first document and to implement its systems for quality management and then to verify by means of an audit conducted by an independent accredited third party for compliance of those systems to the requirements of the standards. In Kenya, the accredited third party auditors include; Kenya Bureau of Standards (KEBS) – being the most popular; Société Générale de Surveillance (SGS); Bureau Veritas Quality international (BVQI) and Conformance Verification International (CVA) (Guchu & Mwanaongoro, 2012).

Although originally applied to industrial settings, the ISO 9000 series of standards are also being adopted by service organizations. At the end of 2008, the service sector accounted for 40 percent of all ISO 9001 certificates (ISO, 2009). As per ISO 2010 survey (2010), Africa and West Asia had a total of 63357 ISO 9001 certified organization as compared to 48327 ISO 9001 certified firms in 2005. The ISO does not perform certification to its standards, does not issue certificates and does not control certification performed independently of ISO by other organizations (Psomas & Fotopoulos, 2009). In Kenya, the same trend is evident by the steadily rising number of ISO certified firms. A total of 127 institutions in Kenya had been ISO 9001:2008 certified as at September, 2012. This represents an increase of 48 newly certified firms after September 2009. As at September 2012, a total of 41 service organizations had been ISO 9001:2008 certified. This represents an increase of 19 newly certified service organizations after September 2009. In the health sector, only five private and public hospitals have been ISO ISO 9001:2008 certified as at September 2012, two of which are from the public health sector – Moi Teaching & Referral Hospital and Kenyatta National Hospital (O. Caroline. personal communication, September 21, 2012).

3. Conceptual Framework and Hypothesis Development

A conceptual framework was developed based on the literature review. The framework consisted of four basic components as shown in the following figure.



Top management support refers to the commitment, involvement and resources that top management devote to their work (Lin & Jang, 2008). The resources and internal cooperation required generally come when top management provides appropriate leadership (Carlsson & Carlsson, 1996; Goetsch & Davis, 1995). Sandholm (2005) contends that worthwhile results can only be achieved when top management has a clear and explicit commitment and Juran and Gryna (2001) agree that active leadership by top management goes hand in glove with successfully achieving quality superiority. Rayner and Porter (1991) and Lamprecht (1991) put forth the view that commitment to ISO 9000 begins with top management who perceive ISO 9000 as something beyond just a matter of producing goods. Effective and successful ISO 9000 implementation, in their view, is dependent on the attitude of the chief executive. Vloeberghs and Bellens (1996) also argued that strong senior management commitment had a positive effect on ISO 9000 implementation. Top management support is integral to encouraging the practices and behaviors that lead to quality workforce performance throughout an organization and might even be considered the cornerstone.

This factor has been identified by several reports (Bevans-Gonzales & Nair, 2004; Thonhauser & Passmore, 2006) and is sometimes singled out as the most important success factor. However, some contrary findings have been found, for example Gamboa and Melão (2012) found that the quality team was the most cited success factor in the ISO 9001:2000 implementation followed by management commitment and support. Thus, the findings in the literature led to the following hypothesis:

H₀: There is no relationship between top management support and health workforce performance.

4. Methodology

4.1 Research design

The research design adopted for this study was cross-sectional survey which is used to investigate populations by selecting samples to analyze and discover occurrences. A survey is concerned with hypothesis formulation and testing the analysis of the relationship between non-manipulated variables. Survey method is also used to gather data from a relatively large number of cases at a particular time (Kothari, 2004). Cross-sectional survey was appropriate for this study because data was gathered from a large number of respondents just once over a period of four months in order to achieve research objectives (Sekaran & Bougie, 2010).

4.2 Population and Target Population

In this study, the population was from the public health sector hospitals. Target population was obtained from the ISO 9001:2008 certified public hospitals in Kenya and included the entire health workforce in these institutions as shown in table 1.

Table 1. Target Population of the Study

		KNH		MTRH		
	Level	Job Group	Number	Job Group	Number	Total
Management	Top Management	K3 and K4	67	M2 – M4	62	129
	Middle Management	K5 – K7	468	M5 – M7	293	761
Unionisable	Officers	K8 – K11	2502	M8 – M11	1759	4261
	Lower Cadre	K12 – K17	1384	M12 – M17	1007	2391
Total			4421		3121	7542

4.3 The Sample

To arrive at the sample size from the target population, the following relationship suitable for populations less than 10,000 as suggested by Mugenda and Mugenda (2003) was adopted.

$$n = \frac{n_0}{1 + n_0/N}$$

Where, n is the desired sample size for small populations.

n_0 is the desired sample size when population is big

N is the population size

On substitution,

$$n = \frac{384}{1 + 384/7542} = 365$$

The sample size was therefore 365.

To determine proportionate sample sizes of each of the two institutions, proportions were used. Similarly, to arrive at sample sizes of an individual subgroup, proportionate stratified random sampling (Sekaran & Bougie, 2010) was used. The respondents from every subgroup were selected for inclusion in the sample size using simple random sampling as summarized in table 2.

Table 2. Sample Sizes

Level		KNH			MTRH			Total	
		Job Group	Population	Sample size	Job Group	Population	Sample size	Population	Sample size
Management	Top Management	K3 and K4	67	3	M2 – M4	62	3	129	6
	Middle Management	K5 – K7	468	23	M5 – M7	293	14	761	37
Unionisable	Officers	K8 – K11	2502	120	M8 – M11	1759	85	4261	205
	Lower Cadre	K12 – K17	1384	67	M12 - M17	1007	49	2391	117
Total			4421	213		3121	152	7542	365

Data was collected using self administered survey questionnaires. Self administered questionnaires befit large enquiries and are free of bias since they are respondent-only based and they increase the rate of response (Kothari, 2004) and help the researcher accumulate and summarize responses easily (Trochim, 2006). They are used to collect information about people's attitudes, opinions and habits (Orodho & Kombo, 2002).

A modified five point Likert scale was used to measure interval data where 'one point' score meant that the respondent strongly disagrees with the question statement and a five point score meant that the respondent strongly agrees with the question statements (Kothari, 2004).

4.4 Measurement of Variables / Operationalization of Variables

The variables were operationalized as discussed hereafter.

4.4.1 Independent Variable (Top Management Support)

Top management plays a crucial role in integrating the ISO standard with organizational goals and strategies, allocating sufficient resources, and monitoring organizational efforts (Fuentes, Benavent, Moreno, Cruz, & Val, 2000); Be'ne'zech, Lambert, Lanoux, Lerch, & Loos-Baroin, 2001). Using the support of top management, employees are provided with quality-centered training that is helpful to understand the mechanisms of ISO 9000 and its techniques (Balzarova et al., 2004). When employees have a better understanding of the standard, it could be easy for them to be motivated and involved in the organizational efforts (Park et al., 2007). In this survey, top management support was operationalized into top management commitment, top management leadership, top management involvement and top management provision of resources. A five-point likert scale was used to measure each of the sub-variables.

4.4.2 Dependent Variable (Health Workforce Performance)

The independent variable - health workforce performance, is critical because it has an immediate impact on health service delivery and ultimately on population health. A well-performing workforce is one that works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given available resources and circumstances. The performance of the health workforce plays a crucial role in the improvement of health outcomes, due to its impact on accessibility to health services and appropriateness of care provided to service users (Dieleman & Harnmeijer, 2006). In this survey, health workforce performance was measured through indicators related to availability, competency, responsiveness and productivity as suggested by World Health Report of 2006. A five-point likert scale was used to measure each of the indicators which were made to be sub-variables of the independent variable.

5 Data Analysis and Presentation

Data analysis is extracting significant variables and detecting anomalies and testing any assumptions (Kombo & Tromp, 2006). It is a way of transforming data into knowledge through proper interpretation and ascribing meaning to it. In this study data analysis was guided by the hypothesis of the study. Leedy and Ormond (2001) posit that qualitative research is used to come up with a rich and meaningful picture of a multifaceted, complex situation. This allows exploration and better understanding of the complexity of the phenomenon under study.

The collected data was entered into the Statistical Package for Social Sciences (SPSS) for windows version 17 because of its ability to analyze data easily and accurately. Quantitative data was first presented descriptively using percentages in tables. Analysis of qualitative data varies from simple descriptive analysis to elaborate reduction; varies with purpose, complexity of research design and extent to which conclusions can be reached easily (Orodho & Kombo, 2002).

The objective of Regression analysis is to make a prediction about the dependent variable based on its covariance with all the concerned independent variables (Kothari, 2004). The coefficient of determination, R^2 , provides information about the goodness of fit of the regression model. It is a statistical measure of how well the regression line approximates the real data points. R^2 is the percentage of variance in the dependent variable that is explained by the variation in the independent variable. If R^2 is near to 1, most of the variation in the dependent variable can be explained by the regression model. In other words, the regression model fits the data well. On the other hand, if R^2 is near 0, most of the data variation cannot be explained by the regression model. In this case, the regression model fits the data poorly (Sekaran & Bougie, 2010). Forced entry regression model was used for this study which is a method in which all predictors are forced into the model simultaneously. This method relies on good theoretical reasons for including the chosen predictors and the researcher makes no decision about the order in which variables are entered (Field, 2009). Some researchers believe that this method is the only

appropriate method for theory testing because stepwise techniques are influenced by random variation in the data and so seldom give replicable results if the model is retested (Studenmund & Cassidy, 1987).

The following reduced linear regression model was used to model the data:

$$Y = \beta_0 + \beta_1 X_1$$

Where, Y is Health Workforce Performance, X_1 is Top Management Support, ϵ is the error component, β_0 is the y-intercept (constant) whose influence on the model is insignificant, β_1 is the Top Management Support model coefficient.

6 Results and Discussions

6.1 Response Rate

Data was collected from the two ISO certified public hospitals in Kenya while targeting a sample of 365 from both institutions. A total of 353 out of 365 self administered questionnaires were filled and returned yielding a response rate of 96.7%. A response rate of this size is quite reasonable compared with other studies in the field of total quality management (Dissanayaka, Kumaraswamy, Karim, & Marosszeky, 2001).

6.2 Analyses of Dependent Variable (Health Workforce Performance)

In this survey, health workforce performance was operationalized into; availability, competency, responsiveness and productivity. A five-point likert scale was used to measure each of the sub-variables and the results were presented in tables.

6.2.1 Health Workforce Availability

i) Factor Analysis

Factor analysis using Principal Component Analysis was conducted to determine if all factors / questionnaire items had significant factor loadings. According to Hair, Anderson, Tatham, and Black, (1995), items / questions which have loadings above 0.5 are considered to be significant. Results of factor analysis showed that all the items had factor loadings greater than 0.5.

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.620 shows questionable internal consistency (George & Mallery, 2003). According to Aamidi (2002), the acceptable value ranges from 0.7 to 0.9. As such the item with a factor loading of 0.511 was expunged as much as it had a factor loading greater than 0.5. This gave a Cronbach's alpha result of 0.881 after the item was expunged of which shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

From descriptive results, 75.2% agreed with the opinion that health workforce availability leads to better health workforce performance in the varied ways as shown above, 16.5% were neutral and 8.4% disagreed.

The SERVQUAL model by Parasuraman, Zeithaml, & Berry (1988) provides an instrument for measuring service quality. One of the five dimensions of service quality that are applicable in general to a service-providing organization like a hospital institution is tangibility which includes physical facilities, equipment and appearance of personnel in the institution to serve customers. This means that availability of health workforce (appearance of personnel) at service delivery points measures service quality (performance) of the health workforce. This therefore explains the majority of employees who agreed that health workforce availability leads to better health workforce performance.

A study by Singh, Feng, and Smith (2006) found that the benefits such as increased quality of customer service, improved documentation and fewer mistakes and defects were of higher value for service companies. This means health worker availability to at respective work stations plays a key role in ensuring the stated ends are achieved in health care institutions as an example of service organizations.

6.2.2 Health Workforce Competency

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.891 shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

Descriptive results showed that 76.8% agreed with opinion that health workforce competency in ISO QMS certification has led to better health workforce performance, 15.5% were neutral and 7.8% disagreed.

Another dimension of service quality in the SERVQUAL model by Parasuraman et al. (1988) is reliability which is the ability to perform the promised service reliably and accurately. This means that competence of health workforce (ability to perform the promised service reliably and accurately) at service delivery points measures service quality (performance) of the health workforce. This therefore explains the high majority of respondents who agreed that health workforce competency in ISO QMS certification has led to better health workforce performance.

Magd (2008) found that the vital benefits derived from implementing the standard were the improved documentation and efficiency of the quality system. Gotzamani, Tsiotras, Nicolaou, Nicolaidis, & Hadjiadamou (2007) found that the greatest improvements from ISO 9001 certification were the following: establishment of a formal process management system, systematic recording of process performance data, systematic monitoring of internal indicators related to customer satisfaction and demand for quality proofs from partners. These findings corroborate findings in the current study by showing that ISO certification has created a culture of competence that is required for the pursuance of organizational goals.

6.2.3 Health Workforce Responsiveness

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.904 shows excellent internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

Descriptively, 74.7% agreed that health workforce responsiveness leads to better health workforce performance as measured by different aspects above, 16% were neutral and 9.3% disagreed.

Another dimension of service quality in the SERVQUAL model by Parasuraman et al. (1988) is responsiveness which is the willingness to help customers and provide prompt service. This means that responsiveness of health workforce (willingness to help customers and provide prompt service) at service delivery points measures service quality (performance) of the health workforce hence the majority of employees agreeing that health workforce responsiveness leads to better health workforce performance

A study by Butt and Run (2010) on private healthcare quality: applying a SERVQUAL model used a seven-point Likert-scale from 1 (strongly disagree) to 7 (strongly agree) to measure service quality and responsiveness as one of the measures scored 5.6 (80%). As compared to the findings of the current study, 74.7% of the respondents were of the opinion that health workforce responsiveness leads to better health workforce performance. These findings are can be said to be consistent.

6.2.4 Health Workforce Productivity

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.895 shows excellent internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

On average, 75% agreed with the opinion that health workforce productivity in ISO quality management system certification has led to better health workforce performance, 15.5% were neutral and 9.5% disagreed.

One of the three stages in the Performance Realization Framework formulated by Kim, Kumar, and Kumar (2011) is the enhancement stage. The purpose of this stage is to make the standard-oriented practices routine across organizations and improve operational performance (workforce performance). In this stage, requirements

of the ISO standard are incorporated into the ways that organizations produce products or service. Main outputs are associated with ISO 9000 outputs, such as reduced cost, enhanced flexibility, and improved productivity. This framework therefore explains the majority of employees having the opinion that health workforce productivity in ISO quality management system certification has led to better health workforce performance.

In their survey on relationship of ISO 9001:2000 quality system certification with operational and business performance, Feng, Terziovski, & Samson, (2007) found that increased productivity as one of the items in their dependent variable – operational performance, had a factor loading of 0.792 meaning that productivity was a good measure of operational performance which is performance related to organisations' internal operation (Feng et al., 2007). Improved employee productivity was found to be one of the most important benefits occurring from implementing the ISO standard in a survey by Magd (2008) on ISO 9001:2000 in the Egyptian manufacturing sector. Studies by Highlands (1995) and Elmuti (1996) on business environments claimed that productivity, quality of product, and quality of work life improved due to ISO 9000 certification. In another study on the role of ISO 9001:2000 certification in competitive production in Kenya's sugar industry, Aluvi (2009) found that 176 (94.6%) of respondents rated high (increased) productivity after attaining ISO 9001:2000 certification. These findings corroborate the findings in the current study.

6.3 Analyses of Independent Variable (Top Management Support)

In this survey, top management support was operationalized into; top management commitment, top management leadership, top management involvement and top management provision of resources. A five-point likert scale was used to measure each of the sub-variables and the results were presented in tables.

6.3.1 Top Management Commitment

i) Factor Analysis

The results of factor analysis of top management commitment were presented showed that no item had a factor loading less than 0.5 hence none was expunged (Hair et al., 1995).

ii) Reliability Test

Since no factor was expunged, reliability test results before and factor analysis were the same. Cronbach's alpha result of 0.888 shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

Results of descriptive analysis showed that 78.6% agreed that top management commitment in ISO QMS has led to health workforce performance, while 12.7% were neutral and 8.5% disagreed.

According to the ISO relationship model by Feng et al. (2007), organizational commitment (management commitment) is related to operational performance (health workforce performance). This model could be used to explain the higher proportion of employees who agreed that top management commitment in ISO QMS has led to health workforce performance.

In their study on critical success factors and problems in ISO 9000 maintenance, Wahid and Corner (2009) report that 83.33 % of the respondents interviewed said that top management commitment and leadership and employee involvement are the most critical success factors for ISO maintenance. In practice, top management were committed to maintaining the ISO 9000 quality system and evidence of their commitment and support was seen in how they took part in related quality and improvement activities. In addition to carrying out their responsibilities in areas such as strategic planning, setting and reviewing of quality policy and objectives and planning of resources, top management of also participated in management review meetings and quality and improvement initiatives committees and initiate continuous improvement projects such as the initiative and creative circle teams. They also reported that there seems to be similarities in terms of top management commitment and employee involvement being the top two critical success factors for ISO 9000 maintenance in all the studies conducted. From another study carried out by Minjoon, Shaohan, and Hojung (2006) on companies between the Mexican and US borders implementing TQM, it showed that significant changes could be brought to an organization, company or institutions, based on the nature of management commitment. These findings corroborate the findings of the current research.

6.3.2 Top Management Leadership

i) Factor Analysis

Results of factor analysis of top management leadership items showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.873 shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

The results showed that on average, 77.05% agreed with the opinion that top management leadership affects health workforce performance in the varied ways measured above while 7.45% were neutral and 15.5% disagreed.

The results are supported by a model by Arumugam, Ooi, and Fong (2007) on the relationship between TQM practice (leadership) and quality performance. Majority of respondents agreed with the opinion that top management leadership in ISO QMS (TQM practice) affects health workforce performance (quality performance). In his survey of total quality management in Iran on barriers to successful implementation in health care organizations, Rad (2005) measured success of the implementation of TQM principle: leadership and management using a five-point Likert scale as very low, low, medium, high and very highly successful respectively and obtained the following results, very low - 3.6%, low - 7.3%, medium - 23.6%, high - 54.6% and very highly successful - 10.9%. From these results, it can be argued that the TQM principle of leadership and management was 65.5% successful in implementation and thus facilitates the implementation of process-management practices which when implemented, support customer satisfaction and organizational survival through sustained employee fulfillment and continuous improvement of processes, products and services. This therefore means implementation of top management leadership can affect health workforce performance in processes, products and services.

6.3.3 Top Management Involvement

i) Factor Analysis

Results of factor analysis of top management involvement items showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.877 shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

From the descriptive results, 73.8% of the respondents agreed with the opinion that top management involvement leads to better health workforce performance in varied ways as found above while 23.1% were neutral and 8.7% disagreed.

Majority of the respondents having agreed that top management involvement leads to better health workforce performance is affirmed by one of the principles of quality management in the Process-Based Quality Management System Model (KEBS, 2010) which is involvement of people at all levels in the organization in continuous improvement and customer satisfaction. This includes involvement of top management in activities within their scope especially in resource management. This involvement yields continuous improvement and customer satisfaction through proper management of human resources and thus health workforce performance in case of a hospital set up.

A survey by Chu, Huang and Wang (2001) collected feedback from 167 managers in 21 Taiwanese public organizations that were certified to ISO 9001:1994 and it was found that one of the critical factors affecting the implementation of ISO 9001:1994 was management capability and involvement. In their study on critical success factors and problems in ISO 9000 maintenance, Wahid and Corner (2009) selected 12 representative ISO 9000 registered companies to be interviewed to explore current practices in maintaining ISO 9000. From the interviews conducted with the quality directors and quality assurance managers of the companies, it was found that many reported failure cases in ISO 9000 maintenance are attributable to lack of constancy in management commitment and involvement. This seems to be in tandem with the reasons why companies failed the surveillance audits which are mostly due to lack of top management involvement and understanding of ISO 9000 requirements for the companies' quality systems (McCullough & Laurie, 1995). These previous findings therefore show that top management involvement is critical for the successful maintenance and thus for betterment of health workforce performance.

6.3.4 Top Management Provision of Resources

i) Factor Analysis

Results of factor analysis showed that all the items had factor loadings greater than 0.5 and as such, all the items were retained (Hair et al., 1995).

ii) Reliability Test

Since no item was expunged, Cronbach's alpha reliability test results were similar before and after factor analysis. Cronbach's alpha result of 0.893 shows good internal consistency (George & Mallery, 2003).

iii) Descriptive Analysis

From the results, 68.8% agreed with the overall opinion that top management provision of resources leads to betterment of health workforce performance while 18.9% were neutral and 12.3% disagreed.

Most respondents agreed that top management provision of resources leads to betterment of health workforce performance. These results are consistent with the intention that it is the management’s responsibility to ensure that resources are availed for the performance of human resources in execution of ISO QMS processes that lead to continuous improvement and customer satisfaction as represented in the Process-Based Quality Management System Model by KEBS (2010).

In his survey of total quality management in Iran on barriers to successful implementation in health care organizations, Rad (2005) measured success of the implementation of TQM principle: focus on material resources using a five-point likert scale as very low, low, medium, high and very highly successful respectively and obtained the following results, very low - 3.6%, low - 18.2%, medium - 36.4%, high - 32.7 % and very highly successful - 9.1%. From these results, it can be argued that the TQM principle of focus on material resources was 41.8% successful in implementation. This therefore means top management provision of resources can affect health workforce performance.

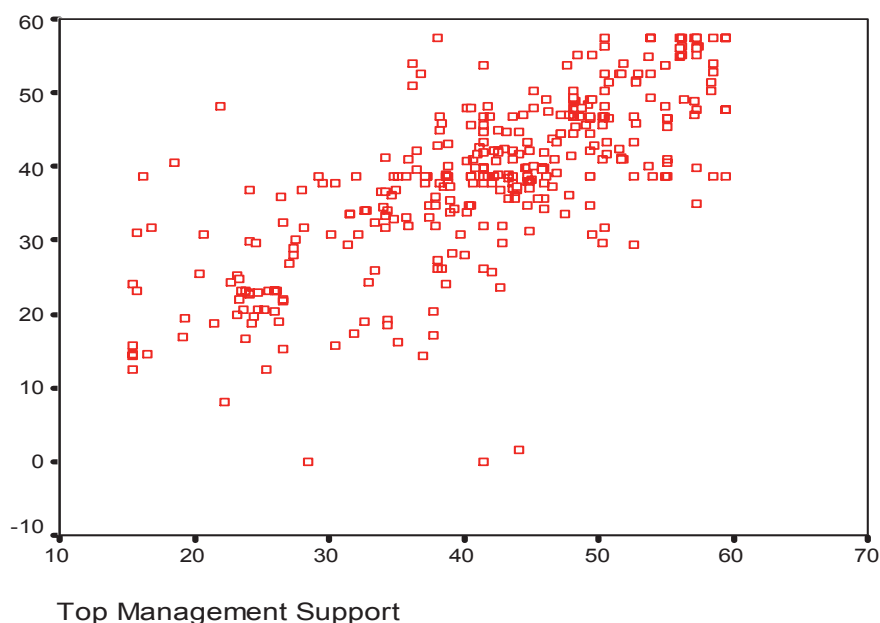
6.3.5 Correlation Analysis of Top Management Support and Health Workforce Performance

The result of correlation between top management support and health workforce performance was as presented in table 3 which shows a positive correlation of 0.713 that is highly significant. This is further supported by the scatter plot diagram in figure 1. Scatter plot is a type of mathematical diagram using Cartesian coordinates to display values for two variables for a set of data. The data are displayed as a collection of points on the horizontal and vertical axes (Jessica, 2005).

Table 3. Correlation of Top Management Support and Health Workforce Performance

		Top Management Support
Health Workforce Performance	Pearson Correlation	0.731
	Sig. (2-tailed)	0.000
	N	353

Figure 1. Scatter plot diagram of Top Management Support and Health Workforce Performance



6.3.6 Regression Analysis of Health Workforce Performance on Top Management Support

As shown in table 4, the R^2 value of 0.534 shows that 53.4% of the variation in health workforce performance is explained by the model: -

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \quad \text{equation (1)}$$

Where Y is Health Workforce Performance, β_0 is the Y intercept, β_1 is the gradient of the regression line, X_1 is Top Management Support and ε is the error term.

Table 4. Variation of the Regression Model - Top Management Support

R Square	Adjusted R Square	Std. Error of the Estimate
0.534	0.533	7.6273785

Analysis of variance (ANOVA) tells whether the regression model results in significantly better prediction using the 'F' value. The value tells how much variability the model can explain relative to how much it cannot explain. It is the ratio of how good the model is compared to how bad it is (Field, 2009). As shown in table 5, the results of ANOVA gives a P-value of the above fitted model as 0.000 of which is less than 0.01. This implies a highly significant overall model at 0.000. Therefore, we can conclude that our regression model results in significantly better prediction of health workforce performance than if we used the mean value of health workforce performance.

Table 5. Significance of the Model in Prediction of Health Workforce Performance

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	23396.258	1	23396.258	402.157	0.000
	Residual	20420.093	351	58.177		
	Total	43816.351	352			

In equation 1, β_0 is the Y intercept and this value is the value B in table 6 for the constant. From table 6, β_0 is 6.722 units and this can be interpreted as meaning that when there is no top management support i.e. when $X_1 = 0$, the model predicts that health workforce performance will have 6.722 units.

Table 6. Regression Coefficient of Top Management Support

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig
1	(Constant)	6.722	1.631	4.122	0.000
	(1) Top Management Support	0.763	0.038	20.054	0.000

In equation 1, β_1 represents the gradient of the regression line. Although this value is the slope of the regression line, it is more useful to think of this value as representing the change in the outcome associated with a unit change in the predictor. The β -value tells us about the relationship between health workforce performance and top management support. If the value is positive, we can tell that there is a positive relationship between top management support and health workforce performance, whereas a negative coefficient represents a negative relationship. For these data, top management support had a positive β -value (0.763) indicating positive relationship and therefore, as top management support increases, health workforce performance improves. Additionally, the β -value also tells to what degree each predictor affects the outcome. $\beta_1 = 0.763$, indicates that as top management support increases by one unit, health workforce performance improves by 0.763 units. If we replace the β -values in equation 1, we can define the model as follows: -

$Y = 6.722 + 0.763$ (Top Management Support).

7 Hypothesis Testing

Hypothesis testing determines the validity of the assumption (technically described as null hypothesis) with a view to choose between two conflicting hypotheses about the value of a population parameter. Hypothesis testing helps to decide on the basis of a sample data, whether a hypothesis about the population is likely to be true or false (Kothari, 2004). Hypotheses of the study were tested, interpreted and discussed.

The first hypothesis of the study was as follows: -

H_{01} : There is no relationship between top management support and health workforce performance in Kenya's public health sector.

To test this hypothesis, linear regression was conducted to determine the level of significance of the relationship between top management support and health workforce performance in Kenya's public health sector. As shown in table 6, $\beta_1 = 0.763$, $p = 0.000$. Since p-value was less than 0.01, the null hypothesis was rejected and therefore there was a highly significant relationship between top management support and health workforce performance in Kenya's public health sector. To test whether the regression relationship was not positive, the β value was subjected to t-test. Calculated t-value was compared with the critical t-value. For top management support, $t_{calc}(348) = 20.054$ while $t_{0.95}(348) = 1.649$. The null hypothesis was rejected because the calculated t-value was found to be greater than the critical t-value and therefore there was a highly significant positive relationship between top management support and health workforce performance in Kenya's public health sector.

In their study on successful ISO 9000 implementation in Taiwan, Lin and Jang (2008) developed a conceptual framework that aimed at determining, among other hypotheses, if top management support is positively related to operational performance. They found that top management support was not significantly related to operational performance. However, most findings from other studies have consistently emphasized the significant role of top management support in ISO 9000 implementation (Rayner & Porter, 1991; Lamprecht, 1991; Vloeberghs & Bellens, 1996). Theoretical quality models, such as the Malcolm Baldrige National Quality Award (MBNQA) and European Quality Award (EQA) models, indicate that top management support drives the system that brings results (EFQM, 2006; NIST, 2006).

8 Conclusion

The central finding of this study is that Top Management Support has a positive and significant effect on health workforce performance. This finding is consistent with existing literature and therefore confirms that Top Management Support is also critical in the process of ensuring better health workforce performance in ISO 9001:2008 certified hospitals and also in the service sector at large.

Since this research was cross-sectional, the research was unable to comprehensively test and account for the difference in health workforce performance between the large and small institution. Therefore, in-depth studies are needed which detail the impact of Top Management Support over time in other institutions. This will help to enhance the question of "What works?" "Why it works?" and "How it works?" with respect to institutional size.

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