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Determinants of Effective Monitoring and Evaluation in Health Service Delivery: A Case of Nairobi City County Health Facilities

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Abstract: **Research has it that developing countries face major challenges that are related to the provision of poor quality healthcare services which have been attributed to inadequate knowledge and skills compounded with low staff members. M&E in Kenya is weak with poor information and data sharing. Through HMIS, Kenya has streamlined its data collection whereby data flow channels have been defined and information sharing among stakeholders has been embraced. However, the existing M&E systems still have disjointed activities, numerous program-specific M&E structures and the existing M&E systems satisfying the reporting needs of donors. These challenges have created a weak culture of information use and demand. The objective of the study was to determine the effects of M&E human capacity on health service delivery. Descriptive research design was employed, a sample of 113 health facilities was sampled using LQAS sampling technique, primary data was collected using researcher designed questionnaires while secondary data was collected through review of relevant literature. Quantitative data was analysed using SPSS while qualitative data was analysed using qualitative content analysis and triangulated with quantitative data. The findings indicated that M&E human capacity could explain 84.4% of variability in health service delivery. The study recommended that capacities of existing M&E practitioners be developed and ensuring institutional memory where every trained M&E practitioner trains at least one other person. The researcher suggested areas for further research to include a similar study that compares the findings from public, private, NGO and FBO health facilities in both rural and urban areas.**

Keywords: **human capacity, effective, monitoring and evaluation, health service delivery, determinants.**

1. INTRODUCTION

Background of the Problem:

Monitoring and evaluation has been described as a set of components which are related to each other within a structure and serve a common purpose of tracking the implementation and results of a project (Abalang, 2016). Pasanen and Shaxson, (2016) also described monitoring and evaluation as a collection of indicators, tools, processes and people that are needed to measure whether a program has been implemented according to plan (monitoring) and is having the desired results (evaluation). The adoption of monitoring and evaluation in the health sector has been proven to foster prudent use of resources and best practices in addition to providing early checks and balances and helps to ensure that a program is being implemented efficiently and effectively and is reaching the intended target groups (WHO, 2008). Monitoring and evaluation in the health sector has been reported to facilitate the identification of core indicators along each link in the results chain, connect indicators to data sources and data collection methods, provide tools and guidance for analysis of

data from multiple sources and demonstrate how data can be communicated and used to inform decision-making at different levels in the health system hence addressing the M&E needs of different users and for multiple purposes (WHO, 2009). Different authors have reported on determinants of effective monitoring and evaluation to include elements that influence success in production of desired or intended results (Gaitimo, 2016; Shapiro, 2016).

Globally, the growth of monitoring and evaluation has been influenced by the American tradition of adopting and using monitoring and evaluation in the public and the private sectors (Basheka and Byamugisha, 2015). American authors have also been reported to dominate the theoretical and methodological approaches and models used in evaluations as well as the high number of global, regional and national M&E associations (Okello & Bongomin, 2014). As a result of this tradition, there came the American Evaluation Association (AEA) which is currently regarded as the mother of evaluations in the world with an approximate of 7300 associations in the United States as well as over 80 foreign countries ascribing to it (Basheka and Byamugisha, 2015). In Africa, the dominant M&E association is African Evaluation Association (AFREA) which was formed in 1999 in response to domestic and global forces emanating from the rapid growth of professional evaluation associations and the use of monitoring and evaluation systems worldwide (Basheka & Byamugisha, 2015). AFREA has over 30 national evaluation associations ascribing to it and Evaluation Society of Kenya (ESK) is one of them though it is still on course and yet to reach the acceptable levels of operation (Odhiambo et al, 2010).

In early 1990s, Sector-wide approaches (SWAPs) were introduced in the health sector of African countries to address the growing needs of improving healthcare service delivery. SWAPs were mandated to develop policy frameworks that could focus on priorities of the health sector. Years later, donors failed to adhere to the SWAPs principles to use recipients' M&E systems and instead used their own planning and M&E systems. This rendered many SWAPs countries' M&E systems weak. In 2010, agencies that were working in global health committed themselves to reengineer M&E through funding and supporting the development of coherent M&E plans (Chan, Kazatchkine, & Lob-Levyt, 2010).

There have been greater efforts to enhancing monitoring and evaluation in Kenya. In 2003, the Kenyan government adopted government-wide monitoring and evaluation system and created a Monitoring and Evaluation Department (MED) in the Ministry of Devolution and Planning. The MED was charged with the responsibility of operationalizing NIMES to ensure transparency and accountability of different stakeholders towards Economic Recovery Strategies (ERS). This came into place as a result of most sectors within the government having no central monitoring and evaluation (M&E) systems for their programs and projects (Odhiambo et al, 2010). The health sector has made a concerted effort to improve its approach to M&E which is supported by the provisions of the constitution of Kenya 2010 and subsequent devolution laws. The Kenyan constitution of 2010 establishes M&E as a key component in operationalizing activities to ensure transparency, integrity and access to information, and in promoting accountability principles at all levels of healthcare service delivery. The 2014 health sector M&E framework also identifies these as key reasons why health services need to be monitored and evaluated. Articles 10 and 201 of the constitution also emphasizes on the need for transparency, accountability and public participation.

Statement of the Problem:

Developing countries are facing major challenges in providing evidence-informed health care, the right interventions to the right people at the right time in routine settings. Some authors have attributed poor health service delivery to inadequate knowledge and skills compounded with systems failures and low staff members (Nzinga, Mbaabu, & English, 2013). Monitoring and evaluation in the health sector in Kenya is seen to be weak and the process of monitoring and evaluation is faced with poor information that is not shared. This has been attributed to the inability of most health facilities to hire and train skilled M&E specialists who are believed to understand the insights of monitoring and evaluation and their appropriate applications (Chesos, 2010).

The Kenyan health sector has made a concerted effort in adopting and embracing M&E in the proper management of its various programs in the health sector to improve on evidence informed healthcare decisions. According to Mwaniki and Mugambi, (2017), the introduction of Health Management Information Systems (HMIS), has streamlined data collection by defining data flow channels and information sharing among stakeholders. However, according to Kihuba et al, (2014) the existing monitoring and evaluation system is still facing a number of challenges that include disjointed activities with no coordination framework; numerous program-specific monitoring and evaluation structures operating separately which do not share data and information with each other; and the existing M&E systems satisfying the reporting needs of funding agencies and implementing partners. These challenges have created duplication of efforts, inefficiencies, lagging capacity in the analysis of health sector performance and in implementing comprehensive M&E plan and a weak culture

of data demand and use of information for decision making. Further, no such study has been done in Kenya to advice M&E policy making in the health sector. This study therefore intends to explore the determinants of effective monitoring and evaluation in health service delivery. The specific objective was to determine the effects of M&E human capacity on health service delivery in Nairobi City County health facilities. The study was significant it was expected to offer information to the government which will be used for strategic policy considerations towards scaling up M&E systems in health facilities countrywide and will also show how M&E can be used as a powerful management tool in improving the way health services are delivered. The study will contribute to the body of knowledge as the findings of the study will make valuable additions to the existing literature in monitoring and evaluation and will also be used as reference material by other researchers. The study will help to identify other determinants of M&E in health and health sectors that will require more research hence becoming a basis for further research. Finally, the study will also be valuable to enhancing the skills of healthcare workers and will also assure quality health services to the public.

2. LITERATURE REVIEW

Theoretical Framework:

Human capital theory was essential in this study and has been described as the aggregate stock of competence, knowledge, social and personal attributes embodied in the ability to create intrinsic and measurable economic value. It is reported to have its roots in the early 1960s where it was described to consist of knowledge, skills and abilities of the people employed in an organization to improve performance. Human capacity theory views humans and individuals in an organization as economic units acting as their own economy (Barron et al, 2007). This implies that individuals/employees in an organization who invest in education and training will increase their skills and will be more productive than those with less skill. The basic concept of human capacity theory is that investments in individuals can be measured based on what they contribute to the society. Education, job training and marketable talents have been outlined as some of the ways in which human resources can increase their ability to acquire knowledge and skills in an organization (Jones, Kalimi, & Kauhanen, 2012). In this study, human capital theory will be essential as it will guide on how to determine the way M&E personnel influence health service delivery.

Conceptual Framework:

This study sought to establish how M&E human capacity affect health service delivery. The framework also indicates the indicators that will be used to measure the variables.

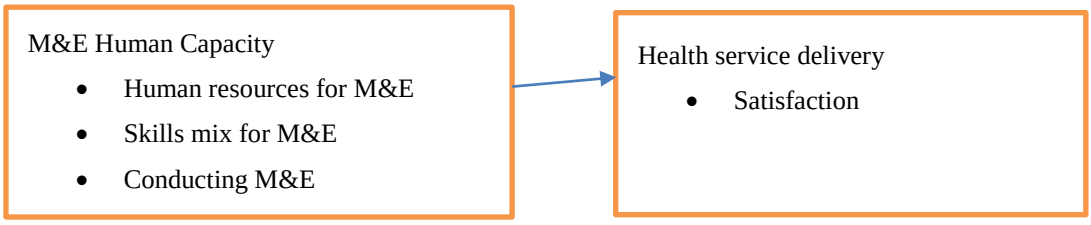

Figure 2.1: Conceptual Framework

Empirical Review:

A study in Uganda by Okello and Bongomin, (2014) identified human capacity to be key determinant in the effectiveness of monitoring and evaluation in improving health service delivery with a 70% positive relationship. The study further revealed that 58.3% of health sector projects in Uganda were in need of specialized human capacity in monitoring and evaluation. This however shows that human capacity is an important as well as a scarce resource in the health sector and they always determine the end results of any health project.

Nzinga, Mbaabu and English, (2013) in their study also reported that health organizations worldwide do not have sufficient number and mix of M&E knowledge, skills and experience (Nzinga, Mbaabu, & English, 2013). Okello et al in their study in Uganda further indicated that 51.5% of the practicing human capacity in M&E do not have any formal training in monitoring and evaluation (Okello et al, 2014) while a study in Kenya by Mwangi et al (2015) concluded that the level of training possessed by M&E human capacity have an effect on M&E to a large extent. This however shows that despite the need for specialized human capacity in M&E, majority of the existing lots do not possess formal training in monitoring and evaluation.

Despite a study in Kenya by Mbiti and Kiruja, (2015) reporting on dedication of M&E employees in public organizations to their functions, majority of human capacity in monitoring and evaluation are reported of not practicing their M&E responsibilities regularly. Reporting on the same indicator, Okello and Mugambi, (2015) found that 58% of those employed as human capacity in M&E are not regularly involved in conducting monitoring and evaluation in their respective organizations. However, Hunter. (2009) in his report advocated on the need for human capacity in M&E to have access to numerous monitoring and evaluation training manuals, handbooks, guidebooks and toolkits which he believes to provide them with potential tools, knowledge and skills that can enhance monitoring and evaluation, new innovations, methodologies, and practical guidance in M&E.

Research Gap:

Monitoring and evaluation is a new concept in Kenya and so is M&E in the health sector. Despite the growing demand for M&E and its gradual growth in the health sector, there still exists a challenge of it achieving results that are comparable with other countries with well-developed M&E systems. The profession is still new and only few people have trained as M&E specialists. This therefore forms a wide gap in the market for monitoring and evaluation specialists. Further, the health sector is a data intensive field that deals with routine data on health related indicators which have been termed inaccurate, incomplete and untimely (Asangansi, Macleod, & Meremikwu, 2013). These inefficiencies have been attributed to weak and ineffective monitoring and evaluation systems in the health sector that are being used to collect, analyse and report on health indicators. The weak M&E system hinders the quality of reports generated hence not reflecting the reality of the status of health sector. Despite numerous studies having been done on the effectiveness of monitoring and evaluation in different organizations, only few scholarly articles on effectiveness of M&E in the health sector have been published in Kenya and none have been conducted in reference to health service delivery in Nairobi City County.

3. RESEARCH METHODOLOGY

This study adopted descriptive research design which is a set of methods and procedures that describe variables and discover the relationship between variables (Warfa, 2016). This design involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data. The target population of interest in this study was 670 health facilities in Nairobi City County. The health facilities register from Nairobi City County was used as the sampling frame for this study. The study employed Lot Quality Assurance Sampling (LQAS) techniques to sample 113 health facilities for the study. The following LQAS sample size determination formula adopted from Hedt, Olives, Pigano and Valadez (2008) was used in this study to determine the number of Supervision Areas and to sample health facilities for the study.

$$\boldsymbol{n} = \boldsymbol{N}\frac{1+(\boldsymbol{m}-1)\hat{p}}{[(\frac{\boldsymbol{lmax.Ncen}}{1.96})\text{^}2(\frac{(\boldsymbol{m}-1)(1-\hat{p})}{\boldsymbol{N.M\text{^}2}})+\mathbf{m}\hat{p}]} \quad =10\frac{1+(19-1)0.028}{[(\frac{0.2*670}{1.96})\text{^}2(\frac{(19-1)(1-0.028)}{10*4820.6})+19*0.028]} \quad =6.7 =7$$

A sample of 19 health facilities in each of the 7 sampled Supervision Areas was sampled for the study giving a cumulative total of 113 health facilities representing 16.8% of all health facilities in Nairobi City County. The respondents were officials in the senior management, middle management, M&E specialization and patients. The study collected both primary using questionnaires and secondary data through review of relevant literature. Descriptive data in this study was presented using descriptive statistics which involved the use of tables and figures to aid the reader in understanding data distribution. Multiple Regression Model at 5% significance level and 95% confidence level was adopted to establish the strength and direction of relationship between independent variables and dependent variable.

4. RESEARCH FINDINGS AND DISCUSSION

Response Rate:

The study sought to determine the response rate and the findings are as presented in table 4.1 below.

Table 4.1: Analysis by Response Rate

Health Facilities	Frequency	Percentage %
Returned Questionnaires	87	77
Not Returned Questionnaires	26	23
Total	**113**	**100**

A sample of 113 health facilities were targeted in the study and only 87 health facilities filled and returned the questionnaires giving a response rate of 77%. This response rate implies that most health facilities participated in the study by filling and returning the questionnaires. The response rate was considered credible, sufficient and representative and conforms to Mugenda and Mugenda, (2008) with a stipulation that a response rate of 70% and over is excellent, 60% is good and 50% is adequate for analysis and reporting. The study's response rate was therefore considered excellent and enough to allow for generalization of findings to the target population besides arriving at the conclusion of the study.

Demographic Information of Respondents:

The study sought to determine the distribution of respondents based on the indicators in table 4.2 below.

Table 4.2: Demographic distribution of respondents

Particulars	Frequency	Percentage	Cumulative percentage
Type of Health Facility			
Public	36	41	41
Private	23	27	68
NGOs	12	14	82
FBOs	16	18	100
Age Distribution (in years)			
Under 20	5	2.9	2.9
20-29	20	11.5	14.4
30-39	97	55.7	70.1
40-49	31	17.8	87.9
50 and Above	21	12.1	100
Gender Distribution			
Male	91	52.3	52.3
Female	83	47.7	100
Level of Education			
Primary	16	9.2	9.2
Secondary	25	14.4	23.6
College	58	33.3	56.9
University	75	43.1	100
Areas of Responsibility			
Senior Management	27	15.5	15.5
Middle Management	53	30.5	46
M&E Specialists	6	3.4	49.4
Patients	87	50.0	99.4
Others	1	0.6	100
Length of Service (in years)			
Below 10	12	13.8	13.8
10-19	71	81.6	95.4
20 and Above	4	4.6	100
Services Sought by Patients			
Outpatient	55	63	63
Inpatient	32	37	100
Insurance Coverage			
Yes	54	62	62
No	33	38	100

The results of the distribution of respondent health facilities indicated that majority were public (41%) followed by private (27%), FBOs (18%) and NGOs (14%). Based on age distribution of the respondents, the study found that majority of the respondents (67.2%) were between ages 30 and 49 implying that the respondents in the study were adults and at their maturity ages during the study and therefore were able to make independent judgments and therefore a research process involving them was deemed valid. Based on gender, the study found that majority (52.3%) were male respondents while 47.7% were female respondents inferring that gender distribution was near equal and that male gender could be dominating in health facilities and this could be attributed to the strong male domineering culture in the Kenya. Based on the level of education of the respondents, the study found that majority (43.1%) of the respondents had university education as their highest level of education followed by college education (33.3%), secondary education (14.4%) as their

highest level of education and only 9.2% of respondents had primary level of education. The results imply that respondents were well educated and that they were in a position to respond to the research questions with ease.

Further, on the distribution of respondents based on areas of responsibility, the study found that 15.5% senior managers, 30.5% were middle level managers, 3.4% were M&E specialists, 50% were patients and 0.6% were others. The results infer that the respondents were in a position to provide the needed information related to their respective areas of responsibility. On length of service, the study found that a majority (81.6%) of the questionnaire respondents indicated to have been in their respective areas of responsibility for a period of between 10 and 19 years indicating that the respondents were experienced people who have invested more of their time and effort for success in their respective areas of responsibility. The findings were in agreement with Larsen, Marnburg and Gaard, (2012) observations that the longer employees stick with their organizations they tend to invest more time and effort to make sure their organizations succeed. Finally, on the distribution of patients seeking health services, 63% were seeking outpatient health services while 37% were seeking inpatient services inferring that most health facilities in Nairobi City County offer outpatient health services. On insurance coverage, 62% of respondent were covered while 38% were not covered indicating that majority of patients had no difficulties in paying for health services.

M&E Human Capacity:

This section presents findings on the effects of M&E human capacity on health service delivery. The effects of M&E human capacity were measured by knowledge, skills mix and experiences in performing M&E functions in health facilities.

The study asked respondents to indicate whether their health facilities had M&E practitioners. The results found are as summarized in table 4.3 below.

Table 4.3: Availability M&E practitioners

Response	Frequency	Percentage	Cumulative Percentage
YES	66	76	76
NO	21	24	100

The findings indicate that majority of respondents (76%) acknowledge that their health facilities had M&E practitioners while 24% of respondents acknowledged that their health facilities did not have M&E practitioners. It was important to question on the availability of M&E practitioners in health facilities so as to establish the value health facilities give to monitoring and evaluation. The findings of the study indicate that M&E was implemented in health facilities. The observation was in agreement with Nyakundi, (2014) who observed in his study that majority of projects in Kenya implement M&E activities.

On establishing the exact number of M&E practitioners among health facilities with M&E practitioners, the study found that on average, health facilities had 1.18 M&E practitioners. The findings imply that every health facility had M&E practitioners and that the need for M&E practitioners in the health sector had been adopted positively and that M&E practitioners are important resources in shaping the performance of health facilities.

The study sought to find out whether M&E practitioners in health facilities had formal training in M&E. The findings were as presented in table 4.4 below.

Table 4.4: Formal Training in M&E

Response	Frequency	Percentage	Cumulative Percentage
YES	50	57	57
NO	37	43	100

The study found that majority of respondents (57%) indicated that M&E practitioners had formal training in M&E while 43% indicated that M&E practitioners had no formal training in M&E. The findings infer that M&E practitioners with formal training in M&E were near equal with M&E practitioners with no formal training in M&E indicating that despite the presence of M&E practitioners in health facilities, a significant portion of M&E practitioners in health facilities do not have formal trainings in M&E. The findings are contrary to observations by Okello et al (2014) who postulated that majority of M&E practitioners do not have any formal training in M&E. The differences in observations could be attributed to policy changes in the health sector that calls for health sector to have well-established M&E units to facilitate data sharing and demand.

The study sought to determine the level of trainings among M&E practitioners with formal training in M&E. Figure 4.1 below shows the findings

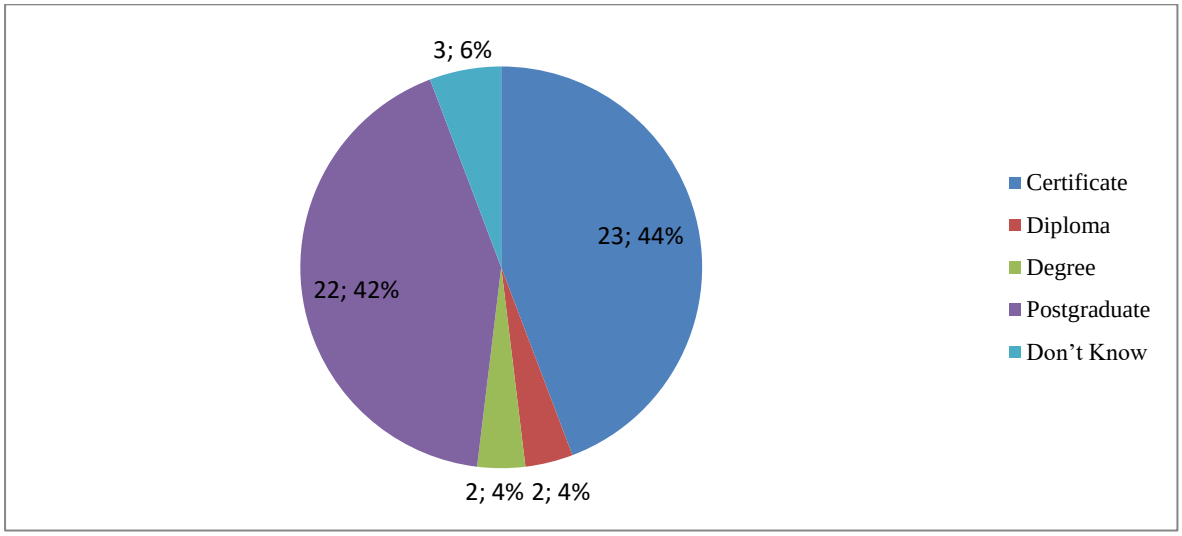

Figure 4.1: Level of qualification for trained M&E practitioners

The study found that 44% of M&E practitioners with formal trainings in M&E in health facilities had certificate qualifications in M&E followed by 42% of M&E practitioners with formal trainings in M&E having postgraduate qualifications in M&E. The findings imply that health facilities had M&E practitioners with the needed knowledge and skills in monitoring and evaluation.

The study further sought to establish the length of practice of the existing M&E practitioners and it was established that, on average, the length of practice for those with formal training in M&E was 2.9 years. The findings imply that majority of M&E practitioners in health facilities had the required knowledge, skills and experiences needed of them to practice monitoring and evaluation. The findings were contrary to the observations of Nzinga, Mbaabu and English, (2013) who postulated that health organizations worldwide do not have sufficient number and mix of experiences in monitoring and evaluation. The difference in findings could be attributed to the currency of the study and the changes in M&E policies over time.

The research asked respondents to indicate whether their health facilities had schedules for conducting M&E. The results found were as presented in figure 4.2 below

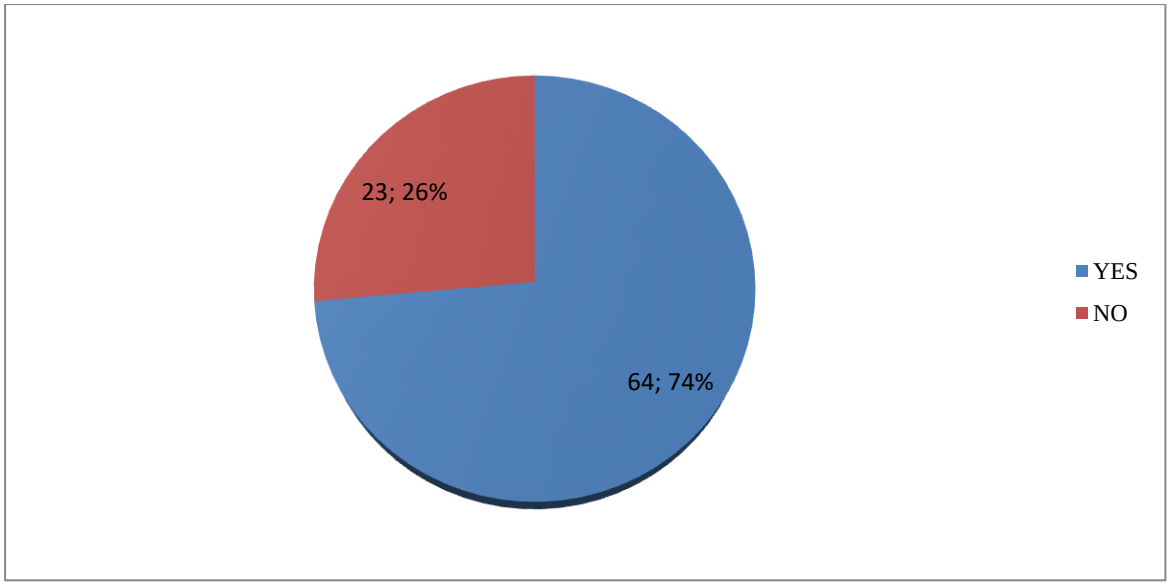

Figure 4.2: Schedule for conducting M&E

The study found that 74% of respondent health facilities had schedules for conducting M&E while 26% did not have schedules for conducting M&E. The findings imply that majority of health facilities had schedules for conducting M&E as a basic requirement for any health project and as a requirement in any project planning process. The findings were in agreement with the observations of Abalang, (2016) who indicated that M&E schedules are designed during the planning processes of a program.

On enquiring whether M&E in health facilities was conducted regularly as was scheduled, the study established that 39% of health facilities were conducting M&E as was scheduled while 61% of health facilities were not conducting M&E as was scheduled (as shown in figure 4.3 below). The findings implies that M&E in most of health facilities was not conducted as was scheduled. The findings were found to be in agreement with the observations of Okello and Mugambi, (2015) who observed that majority (58%) of M&E practitioners were not regularly involved in conducting M&E in their respective organizations.

On further enquiry on why most of health facilities were not conducting M&E as was scheduled, majority of the respondents based their arguments on; lack of schedules for conducting M&E in some health facilities, lack of M&E resources such as M&E frameworks/tools, lack of M&E personnel and lack of budgetary allocations for monitoring and evaluation in most of health facilities.

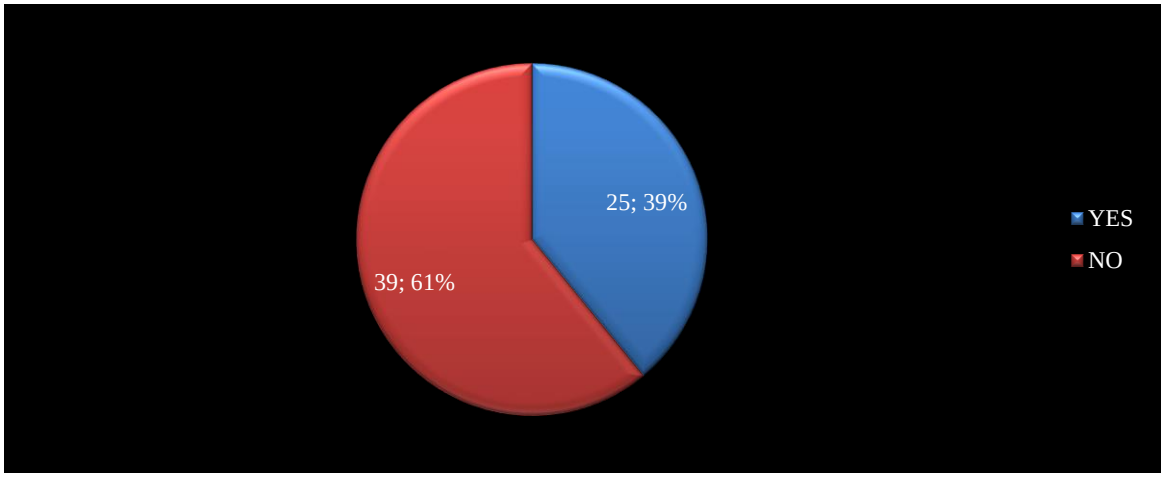

Figure 4.3: Conducting M&E as scheduled

The respondents were asked to indicate whether they were satisfied with the way M&E was conducted in their health facilities and the findings were as shown in table 4.5 below.

Table 4.5: Satisfaction with the way M&E is conducted

Responses	Frequency	Percentage	Cumulative Percentage
YES	30	34.5	34.5
NO	57	65.5	100
Total	**87**	**100**	

The study found that majority (65.5%) of respondents were not satisfied with the way M&E was conducted in their health facilities while 34.5% were satisfied with the way M&E was conducted in their health facilities. The findings imply that majority of health facilities were dissatisfied with the way M&E was conducted. The dissatisfaction was attributed to lack of monitoring and evaluation resources, poor working relationships and lack of innovativeness in designing M&E tools and the fear of achieving the expected results.

The respondents were further asked to give their views on whether M&E specialists in health facilities affect health service delivery and the results were as presented in table 4.6 below.

Table 4.6: Effect of M&E specialists on health service delivery

Responses	Frequency	Percentage	Cumulative Percentage
YES	77	88	88
NO	10	12	100
Totals	**87**	**100**	

The study found that 88% of respondents agreed that having M&E specialists affect health service delivery while 12% of the respondents disagreed. The results infer that M&E specialists are key determinants of effective monitoring and evaluation in organizations and they contribute to production of quality data that could be used to advice evidence-based decisions in health facilities. The findings were in tandem with Okello and Bongomin, (2014) who observed that M&E human resources are key determinants in the effectiveness of monitoring and evaluation.

1) Linear Regression Model of M&E Human Capacity and Health Service Delivery

The study used coefficient of determination (R^2) to determine how far the regression model could explain the linear relationship between M&E human capacity and health service delivery. The results are shown in table 4.7 below

Table 4.7: Model Summary of M&E human capacity and health service delivery

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.919[a]	.844	.813	1.061	.844	27.000	1	5	.003
a. Predictors: (Constant), Human Capacity									

The linear regression model found the coefficient of determination (R^2) to be 0.844 implying that 84.4% of the variability in health service delivery is explained by M&E human capacity. This implies that a one unit increase in M&E human capacity increases health service delivery by 84.4% units. Further, the significance level of 0.003 is less than p-value of 0.05 (0.003<0.05) implying that there is significant regression between M&E human capacity and health service delivery and that M&E human capacity affects health service delivery.

5. CONCLUSION

This study found that health service delivery has a strong, positive and significant relationship with M&E human capacity implying that M&E human capacity is a crucial determinant of and affects health service delivery. This observation was attributed to availability of M&E practitioners in health facilities, existing M&E practitioners having trainings with good experience in M&E and health facilities having schedules for conducting M&E.

Recommendations of the study: The study recommends that the existing M&E policies in the health sector should be implemented to the later in order to ensure that M&E practice is adopted in all health facilities. The study also recommends that capacity of existing M&E practitioners should be developed through on-the-job trainings, short course trainings and seminars in order to conduct credible monitoring and evaluation in health facilities. To build institutional memory, the government should further develop policies that binds every trained M&E practitioner to train at least one other person in each health facility and ensure that all health facilities in Kenya use common M&E frameworks and tools in conducting monitoring and evaluation.

Recommendations for Further Research: Since very little has been done on the study topic, the researcher calls for a similar study to be carried out in other Counties in Kenya in order to obtain more holistic information on these determinants. The researcher also suggests a comparative study that compares the findings from public, private, NGO and FBO health facilities in both urban and rural areas. Finally, the researcher suggested the need to explore more on other determinants such as effects of ICT integration in M&E and effects of M&E policy on health service delivery.

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