Assessing Monitoring And Evaluation System For Managing HIV/AIDS Related Projects Among Healthcare Providers At Thika Level 5 Hospital, Kiambu County, Kenya

1 Abstract

Background: Monitoring and Evaluation (M&E) systems play a pivotal role in assessing the effectiveness and impact of projects, programs, or interventions by providing a structured framework for data collection, analysis, and decision- making. This study investigates the Monitoring and Evaluation (M&E) sys- tems implemented in managing HIV/AIDS-related projects at Thika Level 5

Hospital, with a focus on improving healthcare delivery and patient outcomes. Based on systems theory, the research evaluates the effectiveness of current M&E frameworks and identifies areas for improvement within the hospital’s health- care infrastructure. Aim: This study focuses on evaluating the monitoring and evaluation system for managing HIV/AIDS related projects among health- care providers at Thika Level 5 Hospital, Kiambu County, Kenya. Research Methods: Mixed-methods design was used where stratified random sampling technique was used to select 384 study participants. Structured questionnaires and focus group discussions, this research aimed to capture diverse perspectives from healthcare providers, M&E specialists, and administrators. Results:. The

study findings revealed that there was a high level of effectiveness (78.2%) of the current M&E system in place at the Thika Level 5 Hospital. Training and capacity building efforts provided to healthcare providers regarding M&E prac- tices on HIV/AIDS project were high and the improvement after M&E training was effective (100%). Some of the challenges and barriers faced in the imple- mentation of the M&E system for HIV/AIDS projects were inadequate financial resources, inadequate staffing, the need for additional funds and lack of tech- nological advancement. Conclusion: A high level of effectiveness of the M&E system for managing HIV projects among healthcare providers in a hospital sig- nifies that the system is well structured, data-driven and capable of producing meaningful insights that enhance patient care and program outcomes.

Keywords: Monitoring and Evaluation (M&E), HIV/AIDS

2 Introduction

In the evolving landscape of healthcare worldwide, Monitoring and Evaluation (M&E) has stood out as a pivotal force shaping the effectiveness of health inter- ventions [9,10]. The influence of M&E is not only evident in its ability to improve the management of HIV/AIDS-related projects in Kenya (Danforth et al, 2023), but also extends to broader global health initiatives. Through various examples and studies, the impact of M&E on healthcare practices worldwide becomes ap- parent. In the context of non-communicable diseases (NCDs), M&E has been in- tegral in monitoring and managing chronic conditions. For instance, the Global Burden of Disease study (GBD) utilizes comprehensive M&E approaches to as- sess the impact of NCDs worldwide (Lai et al., 2024). This allows for the identification of risk factors, evaluation of intervention strategies, and the development of evidence-based policies to tackle the grow- ing burden of NCDs on a global scale.In the distinctive healthcare landscape of Kenya, shaped by a tapestry of diverse cultural practices and pronounced socio-economic considerations, the study by Danforth et al., (2023) stands as a significant contribution. This study not only offers critical insights into the intricacies of managing HIV/AIDS-related projects but also connects with and extends the discourse established by other scholars in the field. However, a comprehensive understanding of the contextual factors influencing healthcare delivery in Kenya emerges. For instance, Olwanda et al., (2024) delve into the impact of cultural beliefs on health-seeking behaviors in Kenya, empha- sizing the need to align interventions with local cultural contexts. Additionally, the work of Were et al., (2024) sheds light on socio-economic factors influencing healthcare access and adherence to treatment plans in the Kenyan context.

3 Methodology

This study employed a mixed-methods design, combining quantitative and qual- itative techniques to gain a comprehensive understanding wof the subject. A stratified random sampling strategy was employed to select participants from the population of Thika Level 5 Hospital staff engaged in HIV/AIDS project management. This ensured representation across various roles, such as health- care providers, M&E specialists, and administrators. Quantitative data was col- lected through survey questionnaires distributed to the identified participants. The surveys focused on gathering quantitative insights into the perceived ef- fectiveness of M&E systems, technology adoption, and socio-economic factors affecting project management. The data collected was subjected to descrip- tive and inferential statistical analyses, including regression analysis to iden- tify potential associations between variables. In addition to quantitative data, qualitative insights was obtained through FGDs with key stakeholders such as hospital administrators and M&E specialists. Focus group discussions were also conducted with healthcare providers to capture nuanced perspectives on cultural competence, organizational culture, and the implementation of M&E frameworks. Qualitative data underwent thematic analysis, coding, and catego- rization to extract key themes and insights. Variables was measured with a focus on the dependent variable, ”Effectiveness of HIV/AIDS-related Projects Man- agement,” and several independent variables such as M&E Systems, Cultural Competence in M&E, Technology Adoption for M&E, Implementation of M&E Frameworks, Socio-economic Factors, and Organizational Culture. The sample size of 384 participants was calculated using the Cochran formula (Cochran,

1977) as shown below;

n0 =

Z 2 p(1 − p)

e2

(1.96)2 × 0.5 × (1 − 0.5)

3.8416 × 0.25

0.9604

. . . (1)

n0 =

(0.05)2 =

= 385

0.0025 0.0025

≈

4 Data Analysis

IBM SPSS Statistics for Windows, Version 28.0 was used to analyze data. (Ar- monk,New York: IBM Corp). To describe the data, frequency and percentage analysis were used in all variables. Inferential statistics such as Chi-square tests were used to examine the association between categorical variables such as level of effectiveness and training capacity, challenges experienced and M&E system.

Table 1: Demographic characteristics

|  |  |  |
| --- | --- | --- |
| Category | N | % |
| Gender |  |  |
| Male | 243 | 65.3 |
| Female | 129 | 34.7 |
| Position |  |  |
| Doctors | 19 | 5.1 |
| Monitoring & evaluation specialist | 50 | 13.4 |
| Nurses | 55 | 14.8 |
| Clinical officers | 248 | 57.5 |
| Age |  |  |
| 18-25 | 5 | 1.3 |
| 26-35 | 56 | 15.1 |
| 36-45 | 110 | 29.6 |
| 46-55 | 145 | 39.0 |
| 56 and above | 56 | 15.1 |

Table 2: Level of effectives of M&E systems

|  |  |  |
| --- | --- | --- |
| Category | N | % |
| Current M&E system |  |  |
| Very effective | 186 | 50.0 |
| Effective | 105 | 28.2 |
| Neutral | 40 | 10.8 |
| Ineffective | 41 | 11.0 |
| Qualitative Metrics |  |  |
| Very Well | 249 | 66.9 |
| Well | 42 | 11.3 |
| Neutral | 40 | 10.8 |
| Poorly | 41 | 11.0 |
| Community Engagement |  |  |
| Very engaged | 243 | 65.3 |
| Engaged | 113 | 30.4 |
| Neutral | 16 | 4.3 |

Table 3: Training and Capacity building efforts

|  |  |  |
| --- | --- | --- |
| Category | N | % |
| Effectiveness of M&E training |  |  |
| Very ineffective | 372 | 100.0 |
| Confident in concepts and skills |  |  |
| Not Confident at All | 118 | 31.7 |
| Slightly Confident | 117 | 31.5 |
| Very Confident | 137 | 36.8 |
| Improvement in performance |  |  |
| Yes | 372 | 100.0 |
| Knowledge and skills from training |  |  |
| Occasionally | 117 | 31.5 |
| Frequently | 255 | 68.5 |

Table 4: Chi-sqaure test of level of effectiveness and training capacity

|  |  |  |
| --- | --- | --- |
| M&E\*training capacity variables | Chi-square value | p-value |
| Knowledge & skills from training | 85.933 | 0.000 |
| Confidence in concepts & skills | 102.152 | 0.000 |
| Effectiveness of M&E training | 56.655 | 0.023 |

Table 5: Challenges and barriers in implementation of M&E

|  |  |  |
| --- | --- | --- |
| Category | N | % |
| Adequate financial resources |  |  |
| Very Inadequate | 192 | 51.6 |
| Inadequate | 117 | 31.5 |
| Neutral | 25 | 6.7 |
| Adequate | 13 | 3.5 |
| Very adequate | 25 | 6.7 |
| Additional financial resources |  |  |
| Increased Funding | 135 | 36.3 |
| Better Budget Allocation | 81 | 21.8 |
| Investment in Technological Resources | 104 | 28.0 |
| More Staff Hiring | 40 | 10.8 |
| Others | 12 | 3.2 |
| Enough staff members |  |  |
| Yes | 252 | 67.7 |
| No | 120 | 32.3 |
| Level of support and guidance |  |  |
| Very poor | 110 | 29.6 |
| Poor | 90 | 24.2 |
| Neutral | 16 | 4.3 |
| Good | 104 | 28.0 |
| Very Good | 52 | 14.0 |

5 Results

Socio-demographic characteristics: The findings of the study (Table 1) showed that there were more male participants (65.3%) than female counter- parts (34.7%). Majority of the participants were clinicians (57.5%), nurses were (14.8%), some were doctors (5.1%), and the M&E specialists at the facility were (13.4%). In terms of age, majority of the participants were aged between 46-55 years, (39%), followed by those aged 36-45 years (29.6%). Those aged between

26-35 years and 56+ years were both represented by 15.1%. There were fewer participants aged 18-25 years, (1.3%).

Level of effectiveness: The study findings (Table 2) indicate that half of the participants (50%) rated the current M&E system to be very effective and aligned to the socio-cultural and healthcare context, some participants (28.2%) rated the current M&E system to be effective, (10.8%) found the system to be neutral, meaning neither effective nor ineffective. However, minority of the participants (11%) found the current M&E at the hospital to be ineffective. Ma- jority of the participants agreed that the current M&E incorporated qualitative metrics alongside quantitative metrics very well, (66.9%), a small percentage (11.3%) agreed that the current M&E incorporated qualitative metrics along- side quantitative metrics well. However, some participants were neutral on how M&E incorporated (10.8%) while others reported that the current M&E at the hospital incorporated qualitative metrics alongside quantitative metrics poorly. On the level pf community engagement, more than half of the partic- ipants (65.3%) reported to be very engaged in the current M&E process for HIV/AIDS-related projects, those who were engaged were 30.4% while those who were not sure of their engagement were 4.3%.

Training and capacity-building efforts: The findings of this study (Ta- ble 3) revealed that the participants reported 100% effectiveness of the M&E training. Majority of the participants reported to be very confident in applying the concepts and skills learned during the training sessions in their day-to-day M&E tasks, (36.8%). Some participants, (31.5%) reported to be slightly con- fident in applying the concepts and skills learned during the training sessions in their day-to-day M&E tasks, while participants who were not confident at all in applying the concepts and skills learned during the training sessions in their day-to-day M&E tasks were 31.7%. All the participants who attended the training sessions, 100% noticed improvements in their performance in M&E tasks since attending the training sessions. More than half of the participants (68.5%) utilized the knowledge and skills gained from the training sessions in their M&E activities more than those who occasionally utilized the knowledge and skills gained from the training sessions in their M&E activities, (31.5%). Therefore, in lieu to the second objective of the study there was high level of training and capacity building efforts provided by the healthcare providers at Thika Level 5 hospital.

From Table 4, the findings indicate that there is a strong association between the training capacity and effectiveness of M&E current system at Thika level

5 hospital symbolized by significant statistical chi-square values with p < 0.05,

knowledge and skills acquired from training (χ2 = 85.933, p = 0.000), confidence in concepts and skills, (χ2 = 102.152, p = 0.000), effectiveness of M&E training, (χ2 = 56.655, p = 0.023).

Challenges: The findings in Table 5 revealed that more than half of the participants (51.6%) perceived that the financial resources allocated for M&E activities in their department were very inadequate. Some (31.5%) reported that they perceived the financial resources allocated for M&E activities in their de- partment inadequate. Some participants (6.7%) were not sure of the adequacy of the financial resources allocated for M&E activities in their department. Minor- ity of the participants reported that the financial resources allocated for M&E activities in their department were inadequate and very inadequate (3.5%) and (6.7%) respectively. In terms of additional financial resources or investments are needed to improve the effectiveness of the M&E system, majority of the par- ticipants reported that additional funding is required for effectiveness of M&E system, (36.3%), some felt that investment in technological resources is needed, (28%), those who needed better budget allocation, (21.8%), those who needed more staffing requirement (10.8%) and minority had other reasons (3.2%). Fur- ther, more than half of the participants (67.7%) believed there are enough staff members with the necessary skills and expertise to effectively carry out M&E tasks more than those who didn’t believe there were enough staff members, (32.3%). In terms of support, majority of the participants reported that the level of support and guidance provided by management in terms of staffing and workload management for M&E activities were very poor (29.6%). Some of the participants reported that the level of support and guidance provided by man- agement in terms of staffing and workload management for M&E activities was poor, (24.3%). The challenges identified during this study were lack of support, inadequate staff members, lack of additional financial resources, inadequate fi- nancial resources.

6 Discussion

Demographic factors: Thika Level 5 Hospital has a relative surplus of med- ical professionals as opposed to M&E experts, thus good patient clinical care can be achieved when individuals are treated differently and new methods are implemented. However, this lopsidedness exposes the possibility of ignoring efficient data analysis, program management, and resource assignment. New employees are usually younger, have technological experience, but no clinical experience, and old providers have valuable experience that they may be resis- tant to embracing new tools. There is a role and an impact on age on views, with leaders giving strategic views and front-line on handling practical issues. Inducing aged-based and intergenerational collaboration and specific training can improve both HIV program evaluation and patient outcomes and guarantee the efficient utilization of resources.

Level of effectiveness of M&E systems: The results indicated that78%

of the respondents in Thika Level 5 Hospital found the M&E system very effec-

tive in the management of HIV projects. The system will continuously collect correct and timely information in line with HIV care objectives, involving stake- holders and helping decisions. Its efficiency improves patient outcomes, resource consumption, and policy making, leading to continuous improvement of the pro- grams. These findings are corroborated by similar studies (Yekani et al., 2024; Mbita, 2024), which pay special attention to stakeholders and the insights they provide. The capability of the system to record subtle experiences increases the relevance, responsiveness, and sustainability of the programs, re- sulting in improved health outcomes among people living with HIV.

Training and capacity building: The 23% of respondents mentioned that M&E effectiveness in HIV projects is determined by training. Quality training on M&E enhances skills of healthcare providers in terms of data collection, data analysis, and reporting, which gives a sense of confidence, reliable decision making, and representation of providers. Research in Kenya and internationally have affirmed that wholesome training boosts M&E competence, performance of programs and accountability. There exists an intense association between staff training capacity and the effectiveness of the M&E system as trained people are better in monitoring outcomes and adjusting programs. On the other hand, absence of training will diminish data collection and achievement of projects. In general, quality M&E training investment improves the management, and health outcomes of HIV interventions at the Thika Level 5 Hospital.

Challenges and barriers: Approximately 51.6% of respondents high- lighted inadequate funding as a key barrier to implementing M&E systems, limiting staff training, data management, and evaluations. This reflected find- ings by Healy et al. (2024). Poor support from leadership, insufficient training, and staffing shortages further compromised M&E effectiveness, leading to in- complete data and low staff confidence. Overburdened personnel and weak data systems also hindered monitoring efforts. Studies confirm that limited resources, poor staffing, and inadequate data management undermine M&E systems, impairing healthcare quality and program success, as seen at Thika Level 5 Hospital. Addressing these barriers is essential for effective HIV project evaluation.

7 Conclusion

In summary, insufficient M&E specialists can lead to gaps in data utilization, evaluation, and program effectiveness. A balanced approach, ensuring both ad- equate clinical staff and skilled M&E professionals, is essential for the successful management of HIV strategies in a hospital setting. Encouraging collabora- tion between healthcare providers and M&E specialists can create a more effec- tive healthcare environment for managing HIV. Based on the age distributions observed in the study the age of healthcare providers can influence the effec- tiveness of HIV management and M&E strategies in various ways. A diverse age profile can result in a more robust healthcare team, where the strengths of younger and older providers complement each other. Balancing experience

with innovation, adapting training programs, and fostering collaboration across age groups contributed to the success of HIV initiatives in a hospital setting. A high level of effectiveness of the M&E system for managing HIV projects among healthcare providers in a hospital signifies that the system is well-structured, data-driven, and capable of producing meaningful insights that enhance patient care and program outcomes. It creates a supportive environment for healthcare providers and fosters a culture of continuous improvement, ultimately leading to better health outcomes for individuals living with HIV.A very effective M&E training program for healthcare providers involved in HIV projects signifies that healthcare personnel gain the knowledge, skills, and confidence needed to imple- ment robust M&E practices. This, in turn, leads to improved patient care and program outcomes, a more engaged and competent workforce, and enhanced or- ganizational capacity for HIV management. Ultimately, effective M&E training contributes to more successful HIV interventions and better health outcomes for affected populations. The challenges and barriers faced in the implementation of M&E systems for HIV/AIDS projects are multifaceted, involving organiza- tional, technical, financial, and social dimensions. Addressing these challenges requires a comprehensive approach that includes capacity building, securing ad- equate resources, fostering stakeholder engagement, and ensuring a supportive policy environment. By overcoming these barriers, healthcare systems can en- hance the effectiveness of M&E efforts, ultimately leading to improved health outcomes for individuals living with HIV/AIDS.

Disclaimer (Artificial intelligence)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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