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DOI: https://doi.org/10.64388/IREV9I7-1713392

Effect of Healthcare Providers' Attitudes and Motivation on HMIS Performance in Public Health Facilities in Kakamega County, Kenya

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Abstract- ***An effective Health Management Information System (HMIS) is critical for informed decision-making, improved patient outcomes, enhanced healthcare efficiency, and evidence-based policy planning. However, its effectiveness among healthcare providers in public health facilities in Kakamega County, Kenya is not clear. This study aimed to analyze the behavioral determinants affecting HMIS performance among healthcare providers in public health facilities in Kakamega County. Specifically, the study examined the relationship between healthcare providers' attitudes and HMIS performance. A correlational research design was employed, targeting 1,050 healthcare workers across 15 Level IV health facilities in Kakamega County. A sample of 281 participants was selected using cluster, stratified, and simple random sampling techniques, comprising 15 Medical Superintendents and 266 healthcare workers. Regression findings indicated a positive and significant correlation attitudes & motivation ($B_2 = 0.117$, $p = 0.002$), and HMIS performance. These results highlight the crucial role of behavioral determinants in influencing HMIS effectiveness. The study's findings provide valuable insights for healthcare providers, facility administrators, policymakers, and researchers, contributing to improved HMIS implementation and overall healthcare service delivery. Based on these findings, the study recommends fostering positive attitudes and motivation with best practices in HMIS, ultimately improving healthcare information management and decision-making.***

Key Words: ***Health Management Information System, behavioral determinants, attitudes and HMIS performance***

I. INTRODUCTION

The performance of Health Management Information Systems (HMIS) is a critical pillar of global healthcare reforms, aligning with the Sustainable Development Goals (SDGs) and universal health coverage initiatives (Uddin, Zaman, & Fayaz, 2023). As the backbone of modern healthcare systems, HMIS enhances service delivery through data-driven decision-making, evidence-based clinical practices, and strategic healthcare planning (WHO, 2024). While high-income countries have largely optimized HMIS for improved healthcare service delivery, low- and middle-income countries, including Kenya, continue to face significant challenges in data management and utilization, limiting the system's effectiveness (Addise & Tessema, 2023).

HMIS performance is measured by key indicators such as data accuracy, timeliness, completeness, error rate, and utilization, all of which contribute to enhanced healthcare efficiency, improved patient care, and informed policy decisions (Dekita & Ramukumba, 2024; Masunzu & Mazana, 2024). However, despite investments in HMIS infrastructure, system performance remains suboptimal due to behavioral factors affecting healthcare providers' interaction with HMIS tools (Njeru, Mathai, & Kerochi, 2024). IBM suggests that even when healthcare providers intend to use HMIS, their attitude and motivation may not guarantee success. Attitudes and motivation therefore shape the willingness of healthcare providers to adopt HMIS, their confidence in its benefits for patient care, and their commitment to data accuracy (Rasouli & Khoonsari, 2023).

To date, advanced health systems, such as the United Kingdom's National Health Service (NHS), have faced challenges in fully leveraging HMIS despite extensive digital health investments (Sheikh et al., 2021). Similarly, behavioral barriers have hindered HMIS adoption in hospitals across Pakistan (Luo et al., 2024). In sub-Saharan Africa, despite improvements in Routine Health Information Systems

(RHIS), data utilization remains inadequate due to behavioral constraints (Muhoza et al., 2022). For instance, in Tanzania, the implementation of the District Healthcare Information System (DHCIS) has been significantly impeded by behavioral challenges (Neelima et al., 2024).

In Kenya, the Ministry of Health (MoH) has made substantial strides in strengthening HMIS in line with Vision 2030 and the SDGs (Vision 2030, 2020; MoH, 2020; Manya et al., 2023). In Kakamega County, HMIS, including Electronic Medical Records (EMR)plays a vital role in healthcare planning and service delivery. However, behavioral factors continue to limit its effectiveness, particularly in public health facilities (County Government of Kakamega, 2023; Nandikove, 2020). Addressing these behavioral constraints is essential for optimizing HMIS performance and achieving better healthcare outcomes in the region.

Although various studies have examined behavioral determinants affecting HMIS performance, many have focused on individual aspects rather than taking a holistic approach that integrates attitudes and motivation. Additionally, existing research has relied predominantly on quantitative methodologies, limiting the depth of behavioral insights that qualitative approaches could provide. To bridge this gap, this study employed a mixed-methods approach to comprehensively analyze the impact of healthcare providers attitude and motivation on HMIS performance among healthcare providers in Kakamega County.

Statement of the Problem

The main value of effective HMIS performance among healthcare providers is its crucial role in informed decision-making, improving patient outcomes, enhancing healthcare efficiency, and supporting policy planning (Modu, 2024). However, public health facilities worldwide continue to face challenges such as insufficient data utilization, poor patient outcomes, limited healthcare efficiency, and inadequate policy planning, which remain significant concerns to stakeholders.

Despite reforms aimed at enhancing HMIS to better meet diverse health needs and improve decision-making, challenges such as behavioral determinants still impede its overall effectiveness among healthcare providers in public health facilities in Kakamega County, Kenya (Nandikove, 2020; County Government of Kakamega, 2023). Addressing attitudes and motivation behavioral aspect is essential for improving HMIS performance (Njeru, Mathai, & Kerochi, 2024). While existing studies have acknowledged the importance of behavioral factors in HMIS performance, they have not sufficiently explored their collective impact on healthcare providers' effectiveness in utilizing the system (Mwaura-Tenambergen, 2024; Rasouli & Khoonsari, 2023). Therefore, this study seeks to bridge this gap by comprehensively analyzing the effect of healthcare workers attitudes and motivation on HMIS performance in public health facilities in Kakamega County, Kenya, to inform targeted interventions for improved healthcare data management and decision-making.

Specific Objectives

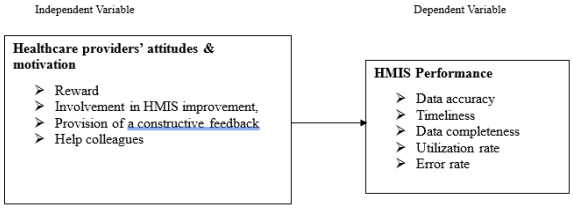
To evaluate the effect of healthcare providers' attitudes and motivation on HMIS performance in public health facilities in Kakamega County, Kenya.

Research Questions

The study was guided by the following research questions;

What is the effect of healthcare providers' attitudes and motivation on HMIS performance in public health facilities in Kakamega County, Kenya?

Conceptual Framework



Theoretical Review

The adoption of the Integrated Behavior Model (IBM) in this study provides a comprehensive framework for understanding the behavioral determinants that influence the performance of the Health Management

Information System (HMIS) among healthcare providers. IBM, as formulated by Fishbein and Ajzen (2010), builds upon the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB), integrating constructs from multiple behavioral theories to explain how individual intentions translate into actual behavior. This model is particularly relevant to the study as it emphasizes that behavioral intention is the strongest determinant of behavior, assuming that barriers such as poor attitudes do not hinder execution (Muhoza et al., 2022). In the context of HMIS, healthcare providers' ability to effectively use the system depends largely on their intention to adopt and integrate it into their daily routines, which is influenced by their attitudes.

Healthcare providers' attitudes toward HMIS play a crucial role in determining whether they will engage with the system. Positive attitudes, shaped by previous experiences and beliefs about the benefits of HMIS, enhance the likelihood of system adoption and utilization. For instance, if healthcare providers perceive that using HMIS improves patient outcomes and enhances efficiency in healthcare delivery, their instrumental attitudes toward the system will reinforce their intention to use it. On the other hand, negative experiences, skepticism, or resistance to technological change can weaken behavioral intention, thereby hindering HMIS performance. If the use of HMIS is widely endorsed and reinforced within healthcare facilities, providers are more likely to adopt it due to normative pressures. Conversely, a lack of institutional support or peer endorsement can lead to reluctance in HMIS adoption, affecting its overall effectiveness in healthcare facilities.

Attitudes and motivation therefore significantly influence HMIS performance, as providers who perceive the system as beneficial and feel incentivized to use it are more likely to develop strong behavioral intentions toward its adoption. The study findings suggest that rewarding healthcare providers for HMIS use enhances their motivation, reinforcing the importance of positive reinforcement mechanisms in shaping behavior. Additionally, active involvement in HMIS improvement initiatives and the ability to provide feedback further strengthen behavioral intention, as users feel a sense of ownership and responsibility toward the system’s success.

Empirical Literature Review

Maraj, Hossain, Islam, and Arif (2024) examined the dual facets of HIS: their innovative potential and the obstacles they pose. The study conducted a systematic assessment of the literature, illustrating how Health Information Systems (HIS) improves healthcare administration via faster data integration, enhanced diagnostic precision, and individualized treatment strategies. The study demonstrated that Health Information Systems possess transformative potential for reinventing health management, providing substantial advances that increase patient care, improve operational efficiency, and ensure superior health outcomes through data integration and analysis.

Dhadho, Muiruri, and Kawila (2024) examined the impact of technological elements on the deployment of Health Management Information Systems (HMIS) at public health institutions within Galole Sub-County, Tana River County, Kenya. The study employed a mixed-methods approach with a sample size of 145 from a population of 233 respondents. The study demonstrated that safeguarding the confidentiality, integrity, and availability of patient information is both a technical requirement and a legal and ethical obligation; failure to handle this appropriately can erode patient trust and adherence to healthcare providers.

Zerfu et al. (2024) elucidated the function of DHIS2 in improving data quality and accessibility inside primary healthcare facilities: Evidence from Ethiopia. The research utilized qualitative methodologies, namely Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs), to collect perspectives from stakeholders, including healthcare providers and administrators in Primary Healthcare Units (PHCUs) throughout Ethiopia. It indicated that implementing standard reporting practices and conducting regular audits will enhance data integrity and promote a culture of responsibility within the healthcare system.

Gupta, Sharma, and Jha (2024) performed a study titled "Overcoming Obstacles STEP By STEP: A Comprehensive Review of Challenges and Strategies in Implementing Hospital Management Information Systems in India." This study provides practical insights and ways to effectively overcome hurdles by analyzing case studies, current research, and the

distinctive Indian environment. The study indicated that potential solutions encompass compliance with emerging requirements such as the planned Digital Information Security in Healthcare Act (DISHA).

Methodology

The study was carried out in Kakamega County. The labor force in Kakamega County, Kenya, comprised a varied array of professionals, encompassing community health workers, physicians, surgeons, psychologists, pharmacists, nurses, laboratory technicians, and physiotherapists. The county boasts around 2,600 healthcare professionals spread throughout 352 health facilities (Kakamega County Integrated Development Plan, 2023). The Health Management Information System, encompassing the implementation of Electronic Medical Records, played a pivotal role in informing decision-making and strategic planning, as exemplified by KCRH. Nonetheless, in light of its importance, it faced obstacles, including behavioral determinants, that constrained its efficacy (Nandikove, 2020). Furthermore, Kakamega County was chosen for this study due to its varied urban and rural health facilities, offering a representative sample. The county, comprising 3.92% of Kenya's overall population, presents a compelling context for assessing the utilization and efficacy of HMIS, particularly in light of the recent implementation of the Kenya EMR system by USAID and PATH. This investigation employed a correlational research framework to explore the interrelationship or association among two or more variables. The population of interest consisted of 1,050 healthcare professionals, purposefully selected from 15 public health facilities throughout Kakamega County. A formula by Fisher (1963, as cited by Kothari, 2004) was employed to arrive at a sample of 281 respondents. This study employed cluster sampling technique to divide the county into ten groups named clusters (Sub Counties). Subsequently, stratified random sampling technique was employed to divide the clusters into strata, and then simple random sampling was used to select healthcare workers within each stratum for participation in the study. The researcher utilized questionnaires and an interview schedule as methods of data collection for the study. Data was analysed using linear regression model and the findings presented using tables.

Findings and Discussions

Healthcare providers' attitudes and motivation

The study conceptualized that healthcare providers' attitudes and motivation had effect on HMIS performance in public health facilities in Kakamega County, Kenya. It evaluated the healthcare providers' attitudes and motivation using five questionnaire items from the healthcare workers.

Table 1 Descriptive Statistics for healthcare providers' attitude and motivation

Statements on *healthcare providers' attitude and motivation*	N	SD	D	N	A	SA	M	STD
I have positive attitude towards HMIS	F	10	16	12	144	66	4.00	.92
	%	4.0	6.5	4.8	58.1	26.6		
Healthcare workers are rewarded to increase their morale for using HMIS	F	34	10	16	126	62	3.29	1.23
	%	13.7	4.0	6.5	50.8	25.0		
I am involved in HMIS improvement	F	31	11	10	87	109	3.70	1.21
	%	12.5	4.4	4.0	35.1	44.0		
I provide constructive feedback or suggestions to enhance the system	F	12	14	16	96	110	3.98	.98
	%	4.8	5.6	6.5	38.7	44.4		
I help colleagues learn and adopt HMIS	F	0	0	41	180	27	3.94	.96
	%	0	0	16.5	72.6	10.9		

Table 1 indicate that 10 (4.0%) of the respondents were in a strong disagreement that they had positive attitude towards HMIS use, 16 (6.5%) disagreed, 12 (4.8%) had neutral opinion, 144 (58.1%) agreed and 66 (26.6%) strongly agreed. The study findings suggested that most 144 (58.1%) of the healthcare workers had an agreement that they had positive attitude towards HMIS use. This implies that healthcare workers have positive attitude towards HMIS use. This is in line with the findings of Opara, Ogaji and Onyemachi (2023) that a higher number of respondents had positive attitudes towards HMIS. It further supports Dakika and Saronga (2024) that individual attitudes and behaviors to improve the use of data in health facility planning and decision-making.

Similarly, 34 (13.7%) of the respondents were in a strong disagreement that there were reward for HMIS users to increase their morale, 10 (4.0%) disagreed, 16 (6.5%) had neutral opinion, 126 (50.8%) agreed and 62 (25.0%) strongly agreed. The study findings revealed that most 126 (50.8%) of the healthcare workers had an agreement that there were reward for HMIS users to increase their morale. This implies that healthcare workers are rewarded to increase morale for using HMIS. This contradict the findings of Siddique et al., (2021) there is no reward for HMIS user officers to increase morale. Kosasih, Wiweka, Wulandari, and Putra (2023) further indicated that there is a strong positive relationship between aspects of system quality and aspects of real benefits.

Additionally, 31(12.5%) of the respondents were in a strong disagreement that they were involved in HMIS improvement, 11 (4.4%) disagreed, 10 (4.0%) had neutral opinion, 87 (35.1%) agreed and 109 (44.0%) strongly agreed. The study findings suggested that most 109 (44.0%) of the healthcare workers had a strong agreement that they were involved in HMIS improvement. The findings on means and standard deviations were also presented. The findings indicate that healthcare providers in Kakamega County generally have a positive attitude towards HMIS (M = 4.00, SD = 0.92), suggesting a strong inclination toward using and engaging with the system. The standard deviation of 0.92 suggests some variability in responses, which may indicate differing levels of enthusiasm or understanding of HMIS benefits.

However, the lowest mean score (M = 3.29, SD = 1.23) was observed in the perception that healthcare workers are rewarded for using HMIS, implying that many respondents feel that incentives for HMIS use are inadequate. The high standard deviation (1.23) suggests significant differences in perceptions, likely due to disparities in institutional policies on HMIS-related rewards. Additionally, involvement in HMIS improvement (M = 3.70, SD = 1.21) and providing constructive feedback (M = 3.98, SD = 0.98) suggest that while healthcare workers are moderately engaged in system improvements, there is still room for greater participation.

Finally, helping colleagues learn and adopt HMIS had a relatively high mean score (M = 3.94, SD = 0.56), indicating strong peer support, with low variability suggesting a shared commitment to knowledge-sharing. Therefore, while healthcare workers generally have a favorable attitude toward HMIS, challenges remain in motivation and involvement in system improvement. Institutions should consider enhancing reward structures and training opportunities to strengthen engagement and system utilization.

Further analysis was carried out to establish the relationship between Healthcare Providers' Attitudes and Motivation on HMIS Performance using Spearman's rank correlation. The findings are presented as shown in the Table 2.

Table 2 Relationship between HMIS Performance and Attitude and Motivation

Correlations		HMIS Performance	Attitudes and Motivation
HMIS Performance	Pearson Correlation	1	.621**
	Sig. (2-tailed)		.000
	N	248	248
Attitudes and Motivation	Pearson Correlation	.621**	1
	Sig. (2-tailed)	.000	
	N	248	248

**. Correlation is significant at the 0.01 level (2-tailed).

**Significance Level: ** $p < 0.01$

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DOI: https://doi.org/10.64388/IREV9I7-1713392

The Spearman's correlation coefficient ($\rho = 0.621$, $p < 0.01$) indicates a moderate positive and statistically significant relationship between healthcare providers' attitudes and motivation and HMIS performance. This implies that positive attitudes and motivation among healthcare workers contribute to better HMIS usage and overall system effectiveness. Ensuring proper incentives, a supportive working environment, and continuous feedback mechanisms could further improve HMIS adoption. The results highlight those attitudes and motivation significantly influence HMIS performance. Strategies to enhance healthcare workers' morale, such as providing incentives and recognizing their efforts, should be prioritized to improve system utilization. Moreover, Pearson product moment correlation was carried out to examine the relationship between each independent construct and performance indicators.

Based on the first objective, which examined the influence of healthcare providers' capacity on the performance of the HMIS in public health facilities in Kakamega County, the second objective shifts focus to evaluating the effect of healthcare providers' attitudes and motivation on HMIS performance. Attitudes and motivation are central to effective data management practices and overall HMIS success, influencing elements such as data accuracy, timeliness, completeness, utilization, and error rates. Table 4.6 presents Pearson correlation coefficients among various motivational and attitudinal factors namely reward, involvement in HMIS improvement, constructive feedback, and helping colleagues and their relationships with key HMIS performance indicators.

Table 3 Pearson correlation coefficients among various motivational and attitudinal factors.

Correlations

		Reward	Involvement in HMIS improvement,	Provision of constructive feedback	Help acolleagues.	Data accuracy	Timeliness	Data completeness	Utilization rate	Error rate
Reward	Pearson Correlation	1	.178**	.033	.121	.129*	.374**	.425**	.448**	.003
	Sig. (2-tailed)		.005	.601	.056	.043	.000	.000	.000	.959
	N	248	248	248	248	248	248	248	248	248
Involvement in HMIS improvement,	Pearson Correlation	.178**	1	-.047	.187**	.083	.419**	.358**	.318**	.129*
	Sig. (2-tailed)	.005		.464	.003	.193	.000	.000	.000	.042
	N	248	248	248	248	248	248	248	248	248
Provision of a constructive feedback	Pearson Correlation	.033	-.047	1	-.024	.241**	.198**	.169**	.157*	.245**
	Sig. (2-tailed)	.601	.464		.710	.000	.002	.008	.013	.000
	N	248	248	248	248	248	248	248	248	248
Help colleagues.	Pearson Correlation	.121	.187**	-.024	1	-.009	.375**	.300**	.366**	.075
	Sig. (2-tailed)	.056	.003	.710		.892	.000	.000	.000	.238

	N	248	248	248	248	248	248	248	248	248
Data accuracy	Pearson Correlation	.129*	.083	.241**	-.009	1	.417**	.513**	.258**	.561**
	Sig. (2-tailed)	.043	.193	.000	.892		.000	.000	.000	.000
	N	248	248	248	248	248	248	248	248	248
Timeliness	Pearson Correlation	.374**	.419**	.198**	.375**	.417**	1	.813**	.516**	.575**
	Sig. (2-tailed)	.000	.000	.002	.000	.000		.000	.000	.000
	N	248	248	248	248	248	248	248	248	248
Data completeness	Pearson Correlation	.425**	.358**	.169**	.300**	.513**	.813**	1	.640**	.527**
	Sig. (2-tailed)	.000	.000	.008	.000	.000	.000		.000	.000
	N	248	248	248	248	248	248	248	248	248
Utilization rate	Pearson Correlation	.448**	.318**	.157*	.366**	.258**	.516**	.640**	1	.089
	Sig. (2-tailed)	.000	.000	.013	.000	.000	.000	.000		.164
	N	248	248	248	248	248	248	248	248	248
Error rate	Pearson Correlation	.003	.129*	.245**	.075	.561**	.575**	.527**	.089	1
	Sig. (2-tailed)	.959	.042	.000	.238	.000	.000	.000	.164	
	N	248	248	248	248	248	248	248	248	248

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The table 3 findings show that reward is significantly and positively correlated with nearly all HMIS performance indicators. Notably, reward is moderately and positively associated with data completeness (r = .425, $p < .01$), utilization rate (r = .448, $p < .01$), and timeliness (r = .374, $p < .01$). Additionally, a weaker but still significant correlation is observed between reward and data accuracy (r = .129, $p < .05$). These results suggest that when healthcare workers perceive they are being rewarded—whether through financial incentives or recognition—they are more likely to submit timely, complete, and utilized HMIS data, indicating that intrinsic and extrinsic motivation may play a critical role in HMIS success.

The variable involvement in HMIS improvement also shows positive and significant correlations with HMIS outcomes. Specifically, it is significantly associated with timeliness (r = .419, $p < .01$), data completeness (r = .358, $p < .01$), and utilization rate (r = .318, $p < .01$). This implies that involving staff in decision-making and improvements around HMIS processes enhances their commitment and contribution to the system's performance. Interestingly, the correlation with data accuracy (r = .083, $p > .05$) was positive but not statistically significant, suggesting that while involvement may improve overall system performance, it does not directly translate into

accuracy unless perhaps combined with additional factors such as training or supervision.

Regarding provision of constructive feedback, the analysis reveals significant positive correlations with several HMIS indicators. The strongest association is with data accuracy ($r = .241$, $p < .01$), suggesting that when healthcare providers receive timely and useful feedback on data submitted, they are more likely to submit accurate data. This is followed by positive correlations with timeliness ($r = .198$, $p < .01$), data completeness ($r = .169$, $p < .01$), and utilization rate ($r = .157$, $p < .05$). These findings underscore the importance of feedback mechanisms in maintaining the integrity of HMIS data and support the idea that a continuous learning environment promotes data quality.

The variable helping colleagues shows a strong and positive association with timeliness ($r = .375$, $p < .01$), utilization rate ($r = .366$, $p < .01$), and data completeness ($r = .300$, $p < .01$). However, its correlation with data accuracy is negative but not significant ($r = –.009$, $p > .05$), and the relationship with error rate is also weak and non-significant ($r = .075$, $p > .05$). This suggests that while collaboration and peer support among healthcare providers contribute positively to the efficiency and application of HMIS data, they may not be sufficient to ensure accuracy unless combined with structured review or supervisory processes.

Lastly, a noteworthy finding is the strong, significant, and positive correlation between reward and error rate ($r = .003$, $p = .959$), which, although statistically non-significant, invites a deeper exploration. It suggests that despite efforts to reward good performance, without clarity on what constitutes quality data, rewards may not necessarily reduce data errors. Additionally, the provision of constructive feedback demonstrates a significant positive correlation with error reduction ($r = .245$, $p < .01$), indicating that continuous feedback can be a corrective mechanism in improving data integrity. Overall, the findings affirm that healthcare providers' attitudes and motivation when strategically nurtured can positively affect HMIS performance, although different factors exert different levels of influence across various performance indicators. This was supported by an interviewee who had the following to say;

> *... Healthcare workers regularly submitted recommendations for system improvements, such as streamlining the patient data entry process to reduce time spent on administrative tasks. This guaranteed the HMIS evolved to meet the practical needs of healthcare providers… Male Participant, 51 years, Medical Superintendents.*

This implies that healthcare workers are strongly involved in HMIS improvement.

On whether respondents provided constructive feedback or suggestions to enhance the system, 12 (4.8%) had a strong disagreement, 14 (5.6%) disagreed, 16 (6.5%) had neutral opinion, 96 (38.7%) agreed and 110 (44.4%) strongly agreed. The study findings revealed that most 110 (44.4%) of the healthcare workers had strong agreement that they provided constructive feedback or suggestions to enhance the system. This implies that healthcare workers strongly provide constructive feedback or suggestions to enhance the system. This is in line with the findings of Ayele, Abera, Ayele, Gudina and Firdisa (2024) that the use of routine health data was significantly associated with healthcare workers who had received regular feedback.

Finally, the study indicates that none of the respondents were in a strong disagreement and disagreement that they helped colleagues learn and adopt HMIS, 41 (16.5%) had neutral opinion, 180 (72.6%) agreed and 27 (10.9%) strongly agreed. The study findings suggested that most 180 (72.6%) of the healthcare workers had an agreement that they helped colleagues learn and adopt HMIS. This was supported by an interviewee who had the following to say;

> *… Experienced healthcare workers regularly assisted new employees in navigating the system, providing hands-on training and guidance on entering patient data and generating reports. This collaborative approach ensured that all team members were proficient in using the system… Female*

Participant, 49 years, Medical Superintendents.

This implies that healthcare workers help colleagues learn and adopt HMIS. This is in line with the findings of Senyonga, Mukuru and Kiwanuka (2023) that the use of HMIS data showed a significant association with employee motivation. Healthcare workers play a vital role in helping their colleagues learn and adopt HMIS, fostering a collaborative environment that enhances system efficiency. Experienced staff members often take on mentorship roles, guiding new employees through system functionalities, troubleshooting challenges, and ensuring that proper data entry procedures are followed. This hands-on support not only accelerates the learning process but also reduces resistance to new technologies, as employees feel more confident and capable in using the system. Additionally, providing constructive feedback and suggesting system improvements create a culture of continuous learning and adaptation. When healthcare workers actively engage in refining HMIS processes, they contribute to system usability and data accuracy, ultimately improving healthcare service delivery. The ability to share knowledge and best practices strengthens teamwork and communication, ensuring that all departments align with standardized data management practices. This aligns with previous studies indicating that employee motivation and engagement significantly influence HMIS utilization. A well-supported workforce that actively participates in system improvements is more likely to embrace technological advancements, leading to better decision-making, improved patient care, and a more responsive health management information system.

Summary, Conclusions and Recommendations

The study findings indicated that most healthcare workers agreed that they had a positive attitude toward the Health Management Information System (HMIS). Additionally, a majority of respondents agreed that they were rewarded to boost their morale in using HMIS. Similarly, most healthcare workers strongly agreed that they were actively involved in improving HMIS. Regarding whether they provided constructive feedback or suggestions to enhance the system, the findings revealed strong agreement among respondents. Lastly, most healthcare workers agreed that they played a role in helping colleagues learn and adopt HMIS. Despite these positive perceptions, statistical analysis using a t-test revealed that healthcare providers' attitudes and motivation had a statistically significant effect on HMIS performance ($p = .002$). The regression analysis results showed that the coefficient for healthcare providers' attitudes and motivation was $\beta = 0.278$, $t = 2.14$, $p = .002$, indicating a meaningful impact on HMIS performance. This finding suggests that a positive attitude and intrinsic motivation enhance system adoption, data entry consistency, and continuous system improvements. Notably, attitudes and motivation had the second greatest effect on HMIS performance, following healthcare providers' knowledge and skills, in public health facilities in Kakamega County, Kenya.

The findings revealed that healthcare providers' attitudes and motivation had a significant effect on HMIS performance. The study further highlights the significant role of healthcare providers' attitudes and motivation in determining HMIS performance, an aspect that IBM associates with experiential and instrumental attitudes toward a behavior. When healthcare workers have a positive perception of HMIS and feel valued through recognition, rewards, and involvement in system improvements, their behavioral intention to use the system effectively is strengthened. The model posits that individuals are more likely to engage in a behavior when they perceive it as beneficial and aligned with their personal or professional goals. Therefore, fostering a work environment that encourages participation, provides continuous support, and offers incentives can enhance HMIS adoption and utilization. Additionally, intrinsic motivation such as the belief in the system's value and the willingness to assist colleagues reinforces positive norms and improves data management practices. This connection between attitude, motivation, and behavior further supports IBM's assertion that positive experiential attitudes and social reinforcement significantly shape behavioral execution.

From the findings, it is therefore recommended that health institutions should ensure that healthcare workers' have positive attitude towards HMIS, are provided with reward to increase their morale for

using HMIS, involved in HMIS improvement, allowed to provide a constructive feedback or suggestions to enhance the system, and encourage them to help colleagues to learn and adopt HMIS.

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