Assessment of Public Health Organization Capacity to Use Research Evidence in Decision Making Processes in Kenya

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Summary

INTRODUCTION

There is need for the governments to apply research evidence to improve decisions making that requires access and capacity for use. For evidence in informed decision making (EIDM) capacity initiatives is important to assess local capacity needs associated with local decision-making or policy making. The objective of the survey was to evaluate public health institutions capacity to demand and use research evidence in decision making processes in selected counties in Kenya.

MATERIALS AND METHODS

The study adopted mixed method (parallel convergence) design where both qualitative and quantitative data was obtained. Phenomenology involved exploration of causation (events, decisions, periods and policies) to understanding the EIDM. The study population was from service departments of Bungoma, Isiolo, Kitui, Makueni, Nyandarua and Taita Taveta public health facilities in six counties. County Directors of health, CHMT and Heads of departments in level 4 and 5 public hospitals were selected for the survey/ IDIs. 6 to 11 departments' heads were recruited from each health facility. Permission for participants and audio recordings was obtained from study participants prior to interviews. IDIs data was transcribed and thematic analysis done. The final themes in analysis were: challenges in decision making for research evidence, sharing findings with staff, documents supporting research engagements, budget allocation for capacity building and lack of computer software for data analysis. Scientific and ethical approval was sought and obtained from KEMRI.

RESULTS

A total of 79 respondents participated in the survey. County health management teams and health facilities departmental heads accounted for 48.0% and 52% respectively. Of these, 57 (76%) of the respondents had previously research exposure. CMHT reported that County Assembly (MCAs) health committee usually requested for research evidence to support budget proposal and allocation of health program funding. The requests included routine data summaries (37.3%), monthly reports (37.3%) and national government documents (15.3%). Some of the key research partners who assist counties in research generation include NGOs/ FBO (20.5%), national government (21.8%) and regional partners (21.8%).

Respondents were aware of supportive infrastructures or research evidence access which included stable internet (16.7%), information technology (IT) (26.7%), electricity connection (29.3%) and community engagement (16.0%).

CONCLUSION

The survey findings suggest there exists limited capacity among public health organizations to adopt and adapt research evidence to inform decision making processes in Kenya. This calls for enhancing institutionalized platforms and structures that promote research engagement. This can be done through motivating staff; provision of highly summarized evidence policy briefs through proper identification of knowledge brokers to support research synthesis; and creation of awareness of locally accessible infrastructure, support tools and equipment.

RECOMMENDATIONS

Build sustainable relationships and trust among public healthcare workers and at organizational level through customized interventions for each county in Kenya.

Keywords: *Organizational Capacity, EIDM, Evidence Informed Decision Making*

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Introduction

There is government concern of using research evidence to improve their decisions, which requires access and capacity to use evidence. One of the most widely mentioned recommendations pertaining any evidence informed decision making (EIDM) processes is capacity needs and development associated with decision or policy making processes (1,2,3).

The current survey adopted operational definition of capacity for research use as the strategies and interventions that "enhance" it, are understood to be those that in some way facilitate or promote research use at the institutional level. 'Capacity' at the institutional level are processes that changes individual staff, or structures that 'institutionalize' these processes across a wide range of decision-making stakeholders (4,5).

Ministry of Health (MOH) financial, leadership and human resources support evidence use strategies that models evidence use in decision-making (6,7); governance structures in decision-making (e.g. legislation, regulatory frameworks, systems foster accountability (8,9). Institutionalized mechanisms incentivize research use in decision-making processes (e.g. policies, staff performance appraisal requirements).

Communication improvement of research findings for decision-making include push/pull models between research producers and users. There is inability how governments incorporate research in decision-making, considering the organizational and systemic factors.

At the institutional level, the key enabling conditions include financial and human resources allocated by MOH to support evidence use strategies; a supportive leadership that promotes and models evidence use in decision-making (6,7); governance structures that are favorable to evidence use in the decision-making such as legislation, regulatory frameworks, and accountability systems (8); and institutionalized mechanisms that incentivize or mandate research use in policies, staff performance and appraisal requirements (9).

There is large body of empirical evidence to improve communication of research findings to decision-makers, including models describing the push/pull efforts between producers and research users. Tools developed to assist in the various steps

of the EIDM process are reported to strengthen individual capacity in EIDM (10).

There is limited information about how governments incorporate research in their decision-making, especially taking into account the influence of organizational and systemic factors. The main objective of the survey was to evaluate public health organizations capacity to research evidence in decision making processes in selected counties in Kenya**.**

Materials and Methods

Study design

The study design used in this study was a mixed method (parallel convergence) study design whereby both qualitative and quantitative data was collected. Phenomenology involved exploration of causation (events, decisions, periods and policies) which were discussed with a view to understanding the EIDM principles at a contextual level.

Study sites

The study was carried out in 6 survey sites that served as learning counties. The six counties were Bungoma, Isiolo, Kitui, Makueni, Nyandarua and Taita Taveta.

Study population

All the health service departments within county referral hospital and the sub-county public health facilities in six counties of Bungoma, Isiolo, Kitui, Makueni, Nyandarua and Taita Taveta counties were targeted for the survey. In addition, staff that constitute the county health management teams (CHMTs) were also identified as respondents to this survey.

Sampling of quantitative respondents

In order to give health facilities and workers equal chances of inclusion in the study, a list of all health facilities was obtained from the counties' Ministry of Health (MoH). Stratification of health facilities from county health referral hospital to the sub county health facilities was carried out. Some sub-counties hospitals had high workloads in various service departments and thus attract more staff.

All level 4 and 5 public health facilities were targeted. Majority of the public health facilities had between 6 and 11 departments depending on the level and workload (volume of patients). The departmental heads were identified and targeted as respondents for the quantitative questionnaire administration. All the CHMT staff members were also included in the quantitative interviews

Selection of qualitative respondents

Participants for In-depth interviews (IDIs) were purposively selected for the study. Participants were included the County's Directors of health services and the sub-counties hospitals medical superintendents In-depth Interviews were conducted in English and lasted 45-60minutes. Audio recording was done using a digital device and notes taken to capture important information. Permission to make audio recordings was obtained from study participants before commencing interviews.

IDIs data were transcribed and thematically arranged, combining the coded transcribed handwritten notes. Comparison across the collected data by source of information was made while collating similar and varied opinions of the themes per the objectives. The emerged key themes included in the analysis were: challenges in making research evidence decision; solutions to overcoming challenges; counties' mechanisms for research engagement, data analysis and sharing findings with staff; documents in the county/Hospital that support research engagements and budget allocation for capacity building.

Ethical approval

Scientific and ethical approval was sought and obtained from KEMR's national Scientific and Ethical Review Unit (SERU) reference number

KEMRI/SERU/CPHR/003/3680 prior to study implementation. Written permission was also obtained from the county directors of health. Consenting to participate in the IDIs was individualized.

Results

The team visited a total of 14 public health facilities spread in the 6 counties. This included the 6 county referral hospitals and 8 sub-county hospitals from the respective counties. A total of 75 participants responded to the survey consisting of county directors of health services, heads of clinical services, county health administrators, county health records & information officers, heads of health programs and medical superintendents from county referral hospitals. Whereas, at the sub-county hospitals, medical Superintendents and departmental heads.

Table 3.1: Distribution of Respondents by Counties and Health Facilities

Name of the County	No. of Respondents (n=75)	CHMT (n=39)	Sub-county health management (n=36)	No. of health facilities visited	
				Sub-county (n=9)	Referral Hospital (n=6)
Bungoma	11	6	5	2	1
Isiolo	10	7	3	1	1
Kitui	17	7	10	2	1
Makueni	13	4	9	1	1
Nyandarua	12	8	4	1	1
Taita Taveta	12	7	5	2	1

Table 3.2: Bivariate Analysis on MCAs Request for Evidence to Support Health Prioritization by Respondent Groupings

	Response	Total	Respondents Categorization		Bivariate Analysis
			CHMT (n=39)	Sub-county health management (n=39)	
Whether the Members of the County Assembly (MCAs) regularly request for evidence in matters relating to health to support health related agendas and prioritization	Yes	28	18 (54.5%)	10 (25.6%)	Chi-square= 6.543 d.f. = 2 p-value =0.038
	No	23	7 (21.2%)	16 (41.0%)	
	Not Sure	21	8 (24.2%)	13 (33.3%)	

Table 3.3: Bivariate Analysis on County Integrated Development Plan (CIDP) Commissioning Activities Informed by Research Evidence

Response	Total	Respondents Categorization		Bivariate Analysis
		Management (n=36)	Public hospital departments (n=39)	
Yes	15	8 (27.6%)	7 (20.6%)	Chi-square= 0.457 d.f. = 2 p=0.796
No	19	8 (27.6%)	11 (32.4%)	
Not Sure	29	13 (44.8%)	16 (47.1%)	

Institutional structures / platforms that promote research engagement

A total of 57 (76%) of the respondents reported they had previously been involved in research activities at before joining the county public service. In regard to institutional structures or platforms that promote research engagement, 23.5% (n=39) of the county health management and 43.6% (n=36) of service providers in various hospital departments reported existence of platforms that set county health research priorities.

Some of the existing platforms/structures include interaction with researchers and other stakeholders to address county health research needs, Collaboration with other research institutions (53.8%) with and MoUs/ MoAs with other government entities accounted for 35.9%, and contracts with consultants and institutions of higher learning accounted for 7.7%.

It was also reported Members of the County Assembly (MCAs) regularly requested for evidence to support health agendas and prioritization during parliamentary proceedings and subsequent publications of county health legislative bills. This was reported by bothcounty health management and service providers, 18 (54.5%) of and 10 (25.6%) respectively. This was found to be statistically significant at chi-square=6.45, d.f.=2, p-value=0.038) as profiled.

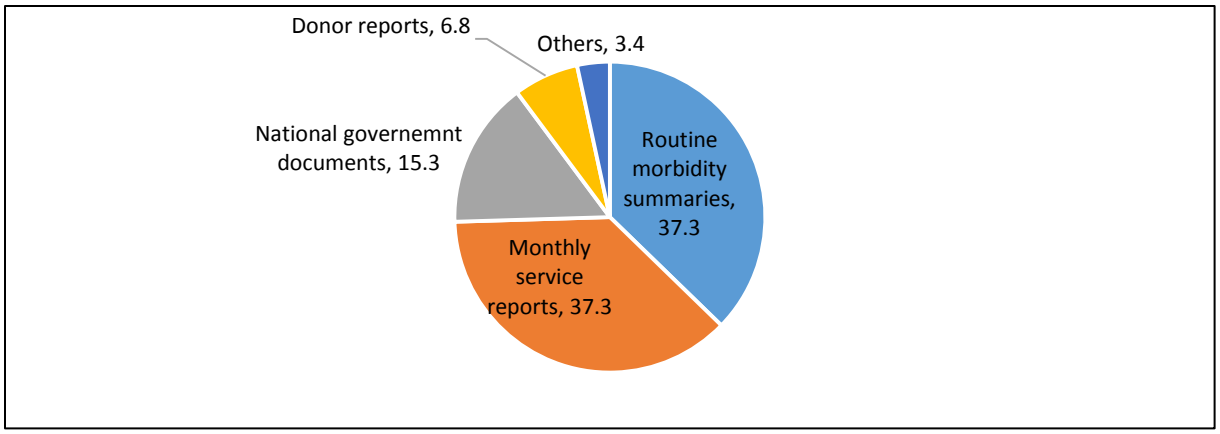

Figure 3.1: Profiles the Range Documents / Research Evidence that MCAs Requests for.

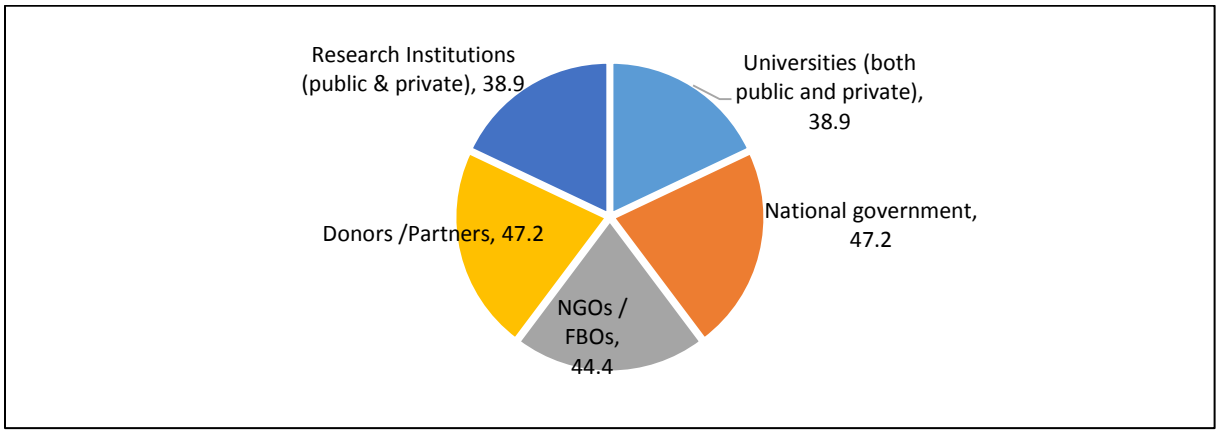

Figure 3.2 Categories of Key Research Partners at the Selected Counties

The type of evidence that MCAs requests include routine data summaries (37.3%), monthly reports (37.3%) and national government documents (15.3%).

As part of long term planning, counties governments usually generate documents referred to as the County Integrated Development Plan (CIDP). These are economic blue prints that guide development of various social and productive sectors in each county. In terms of whether the most current county integrated plan CIDP has commissioned any activities that was informed by research evidence, 8 (27.6%) of management carders and 7 (20.6%) of the frontline workers reported awareness to CIDP commissioning activities (chi-square= 0.457, d.f. = 2, p=0.796) as profiled in **Table 3.3**.

Table 3.4 Strengthening Mechanisms for Staff Relationships with Researchers

	Total (n=75)	Respondents Categorization		Bivariate Analysis
		Management (n=36)	Public hospital departments (n=39)	
i. Regular attendance at conferences	41	19 (46.3%)	22 (52.4%)	Chi-square= 1.935 d.f. = 3 p=0.586
ii. Involvement of researchers in advisory committees	9	5 (12.2%)	4 (9.5%)	
iii. Contractual and informal relationship with external research organizations	14	9 (22.0%)	5 (11.9%)	
iv. None	19	8 (19.5%	11 (26.2%)	

*Note: ** - allow for multiple responses*

Table 3.5 Bivariate Analysis of Institutional Structures that Promote Research Engagement

Parameters	Responses	Total	Respondents Categorization		Bivariate Analysis
			Management (n=36)	Public hospital departments (n=39)	
i. Research funds factored in health budget	Yes	16	22.9%	21.6%	Chi-square = 0.024 d.f. = 2 p-value= 0.988
	No	37	51.4%	51.4%	
	Not Sure	19	25.7%	27.0%	
ii. Policy documents guidance health research	Yes	8	8.6%	13.2%	Chi-square = 0.865 d.f. = 2 p-value= 0.649
	No	42	62.9%	52.6%	
	Not Sure	23	28.6%	34.2%	
iii. Collaborative health research to address health needs	Yes	20	28.6%	26.3%	Chi-square =0.188 d.f. = 2 p-value= 0.910
	No	39	54.3%	52.6%	
	Not Sure	14	17.1%	21.1%	
iv. Health research committee with roles and responsibilities	Yes	7	11.4%	8.1%	Chi-square = 0.270 d.f. = 2 p-value=0.874
	No	56	77.1%	78.4%	
	Not Sure	9	11.4%	13.5%	
v. County platform for research interaction	Yes	11	20.0%	10.5%	Chi-square = 5.650 d.f. = 2 p-value=0.059
	No	40	62.9%	47.4%	
	Not Sure	22	17.1%	42.1%	
vi. Exchange programmes with collaborators to enhance research capacity	Yes	12	14.7%	19.4%	Chi-square = 0.653 d.f. = 2 p-value= 0.721
	No	44	67.6%	58.3%	
	Not Sure	14	17.6%	22.2%	

The key research partners who assist research generation at the counties include NGOs/ FBO (20.5%), national government (21.8%) and donors / regional partners (21.8%). **Figure 3.2** profiles the categories of key research partners who undertake research related activities in the various counties. The range of mechanisms that strengthen staff and external researcher relationships include regular attendance at scientific conferences (46.3%) and 52.4% frontline workers; engagement in several contractual and informal relationship with external research organizations had 9 (22.0%) management and 5 (11.9%) of public hospital departments.

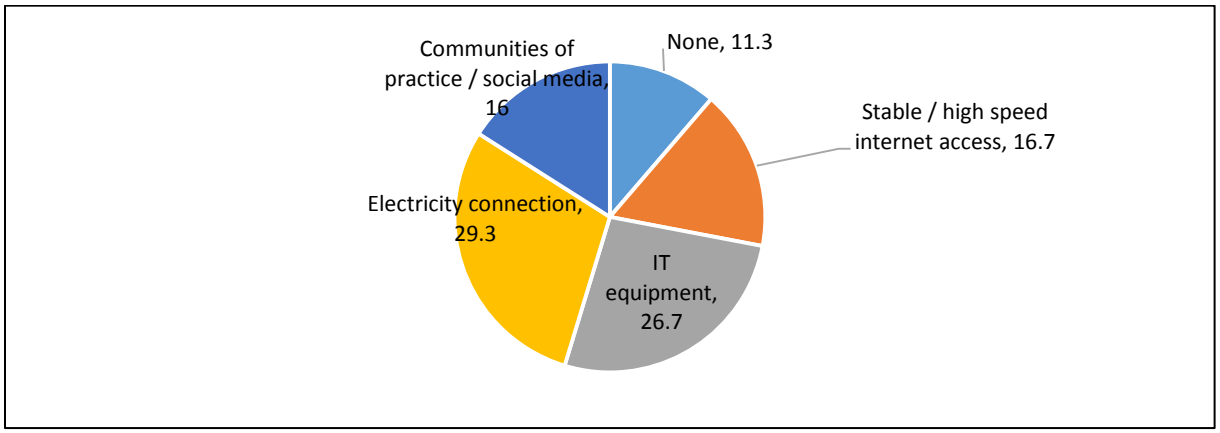

Figure 3.3: Supportive Infrastructures for Online Access and Exchange of Research Evidence

Table 3.6(a): Awareness of Channels Used at County / Hospital to Acquire Research Evidence

Responses	Total (n=75)	Respondents Categorization			Bivariate Analysis
		Management (n=36)	Public departments (n=39)	hospital	
Yes	29	15 (41.7%)	14 (36.9%)		Chi-square= 0.269
No	9	4 (11.1%)	5 (12.8%)		d.f. = 2
Not Sure	37	17 (47.2%)	20 (51.3%)		p-value= 0.874

Table 3.6(b): Mean Ranking of Channels that the Counties' Uses to Acquire Research Evidence

Research evidence Channels	Management (n=36)			Public hospital departments (n=39)		
	Mean Rank	±SD	No.	Mean Rank	±SD	No.
a. Scientific journals	3.63	1.408	8	4.63	1.506	8
b. Web sites	3.75	1.753	8	2.89	2.028	9
c. Non-scientific journals / reports	3.57	2.299	7	3.43	2.070	7
d. Opportunities to work with researchers	2.38	2.134	8	3.36	1.963	11
e. Databases such as DHSI2/ NBS	2.17	1.850	12	1.58	1.165	12
f. Learning from networks / professionals	3.42	1.676	12	2.50	1.512	8
g. Social media	4.36	1.629	11	1.70	1.567	10
h. Online registry e.g Cochrane	5.33	3.055	3	3.14	2.410	7
Note: ±SD = standard deviation						

Availability of accessible infrastructure to house existing research evidence

A number of respondents had online supportive infrastructures for access and exchange of research evidence. They include stable internet access (16.7%), information technology (IT) equipment (26.7%), access to reliable electricity connection (29.3%), and engagement to communities-of-practice (16.0%). **Figure 3.3** profiles the infrastructure available as reported by respondents.

Among the management group, 15 (41.7%) of the respondents and 14 (36.9%) of the public hospital departments were aware of channels used at county / hospital to acquire research evidence. There was no statistical association between the 2 groups as profiled in **Table 3.6.**

Table 3.7: Counties MOH and Public Hospitals Knowledge Exchange and Adaptation, Synthesis and Communication of the Available Evidence

Responses	Total (n=75)	Respondents Categorization		Bivariate Analysis
		Management (n=36)	Public hospital departments (n=39)	
(i) Awareness on mechanisms to synthesize and disseminate research evidence				
Yes	33	15 (41.7%)	18 (46.2%)	Chi-square= 1.088
No	27	12 (33.3%)	15 (38.5%)	d.f. = 2
Not Sure	15	9 (25.0%)	6 (15.4%)	p-value= 0.580
(ii) Research synthesis, completeness, appropriateness, timeliness and adapt				
i. Unable to synthesis research evidence	16 (21.9%)	6 (17.6%)	10 (27.8%)	Chi-square= 4.805 d.f. = 4
ii. Research synthesis with some difficulties and inability to adapt	12 (16.4%)	5 (14.7%)	7 (19.4%)	p-value= 0.308
iii. Synthesis the research evidence and not adapt	11 (15.1%)	7 (20.6%)	4 (11.1%)	
iv. Synthesis the research and know how to adapt	28 (38.4%)	14 (41.2%)	14 (38.9%)	
v. Request external partners to synthesis research evidence	6 (8.2%)	5 (14.7%)	1 (2.8%)	

Table 3.8: Counties MoH and Public Hospitals Priority to Use of Research Evidence

Response	Total (n=75)	Respondents Categorization		Bivariate Analysis
		Management (n=36)	Public hospital departments (n=39)	
High priority	19	11 (30.6%)	8 (20.5%)	Chi-square= 5.606
Same priority	14	9 (25.0%)	5 (12.8%)	d.f. = 3
Lower priority	32	14 (38.9%)	18 (46.2%)	p-value= 0.132
Not sure / do not know	10	2 (5.6%)	8 (20.5%)	

Institutional strategies that promote use of research evidence

The use of research evidence at counties MoH and public hospitals had 11 (30.6%) of the management carder and 8 (20.5%) of the public hospital departments report had high priority in their daily activities. There is no statistical association between the two groups (chi-square=5.606, d.f.=3, p-value=0.132) as profiled in Table 3.8.

In terms of mechanisms and tools to facilitate the use of research evidence into the work of healthcare workers, 22 (29.3%) have mechanisms and tools while 26 (34.7%) were unsure and 27 (36.0%) never had. Database access (28.2%), internal dissemination forums (28.2%) and request for expert supports (15.4%) were the most frequently mentioned support and tools county management avail to help staff access and apply research findings (as profiled in **Figure 3.4**).

A total of 9(25%) of the management carders and 9(23.1%) of the public hospital departments were aware of mentorship programs to promote research evidence generation and use at counties and public hospitals. In regards to budget allocations for research and related training, 5 (13.9%) of the management carders and 7 (17.9%) of the public hospital departments were aware of the funds availability as profiled in T**able 3.9** actions that promote research evidence generation and use at the counties.

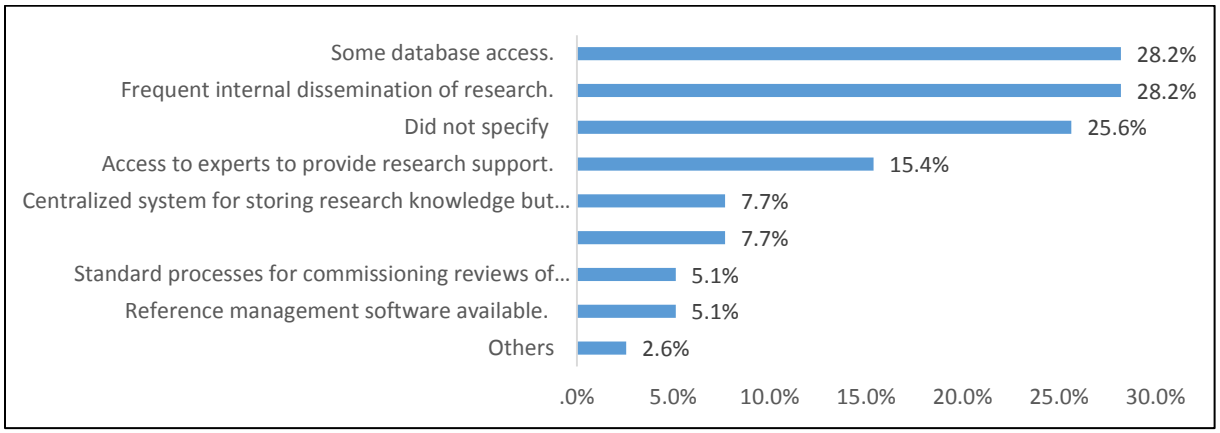

Figure 3.4: Support and tools to staff for access and application of research findings

Table 3.9: Distribution of Actions That Promote Research Evidence Generation and Use

Counties MoH and public hospitals actions	Response	Total (n=75)	Respondents Categorization		Bivariate Analysis
			Management (n=36)	Hospitals (n=39)	
Mentorship programs for research evidence generation and use	Yes	18	9 (25.0%)	9 (23.1%)	Chi-square= 2.353 d.f. = 2 p-value= 0.308
	No	41	22 (61.1%)	19 (48.7%)	
	Not Sure	16	5 (13.9%)	11 (28.2%)	
Research & training budgetary allocations	Yes	12	5 (13.9%)	7 (17.9%)	Chi-square= 1.162 d.f. = 2 p-value= 0.559
	No	41	22 (61.1%)	19 (48.7%)	
	Not Sure	22	9 (25.0%)	13 (33.3%)	

Table 3.10: Research monitoring indicators, evaluation and organization matrix

Response	Total (n=75)	Respondents Categorization		Bivariate Analysis
		Management (n=36)	Hospitals (n=39)	
No indicators	28	12 (30.8%)	16 (37.2%)	Chi-square= 4.123 d.f. = 3 p-value= 0.248
Partly mentioned	16	11 (28.2%)	5 (11.6%)	
Availability of indicators	12	4 (10.3%)	8 (18.6%)	
Others (including using partners' research related indicators)	26	12 (30.8%)	14 (32.6%)	

Standardized monitoring indicators for research engagement among the respondents

Approximately (30.8%) of the management carders and 16 (37.2%) of the public hospital departments were aware of research related indicators as part of monitoring, evaluation and organization learning matrix. There was no statistical association between the various groups as profiled in **Table 3.10.**

Challenges experienced when making health decisions in relation to research evidence

A total of 10 IDIs were conducted with selected participants representing the management and public hospital departments. Majority respondents identified database related issues as a major cause of using evidence. More specifically, issues related to data incompleteness, timeliness and lack of data documentation as illustrated by the quotes below:

"Our biggest challenges has been our database, I would like to see some trends in the past five, ten years for may be HIV. Its scanty, our database is not complete and on documentation too..." (IDI, CHMT, Taita Taveta County)

"There are some gaps definitely with DHIS, there is timeline for reporting. Some of the time we miss some cases because of the deadline. We could have a facility and department that takes care of the reporting so we don't miss out the number of the affected kids." (IDI, FI, Nyandarua).

Evaluation of research publications was mentioned as another challenge. Synthesis of the publications results to contradiction and as such, decision makers are not able to use the presented evidence. One participants mentioned:-

"Evaluating the various research findings, to see what is significant and what is not. Sometimes research findings contradict each other, sometimes you are not really in a position to be able to evaluate whether the findings are correct, there are things you need to follow, whether there was bias or not". (IDI, CHMT, Kitui County).

Political interference especially in the budget approval processes results to limited funds allocated to research related activities as illustrated by participant's view:

"Funding that makes decision making difficult. Sometimes political interference is also a major issue." (IDI, Frontline healthcare worker, Makueni).

Lack of a full time person dedicated to review databases and manage the research desk was mentioned as challenge as illustrated below:

"In terms of personnel we are always short charged so sometimes dedicating full time personnel and energy to research has been a challenge." (IDI, CHMT., Taita Taveta County)

Suggested solutions to overcoming research evidence challenges

Data management and validation training was suggested as possible avenue of strengthening update of evidence. Explore possible of conducting capacity building among technical level on the need to have complete, timely and quality data sets as mentioned by respondents as emphasized:

"Enlighten the juniors at the technical level on the importance of data collection for example we never used collect our referrals out of the hospital at outpatient level we would fill one form that the patient goes with and as from. … We started to collect data by filling the form in duplicates which informed us to open well baby clinic… emphasis to inform even at the lower cadres on the importance of data collection and documentation." (IDI, Frontline healthcare worker, Nyandarua).

Communication of research findings is vital in the EIDM process. Strengthening internal communication processes was suggested by respondents as indicated below.

"…what we should do is encourage basically soft copy or even easier communication between HRIO and in-charge of the facility such that you can always send the information prior to even coming with the hard copy…. (IDI, Frontline healthcare worker, Nyandarua).

Having a centralized database that could house all the relevant information was also suggested as a solution to lack of the evidence availability.

"We need to work on documentation, storage, in other words have a database, we need a full time kind of research unit at least some place you can trust to get this information best." (IDI, Management, Taita Taveta County).

"…If we could have a database where we don't have all these scattered research information across and whereby there is some evaluation by peer review mechanism". (IDI, Management, Kitui County).

Lobbying of politicians and other decision makers through formation of research committee in the counties was mentioned.

"We need a vibrant committee that can drive funding activities in the county". (IDI, Frontline healthcare worker, Makueni).

"We also need to lobby our leadership, advise our cabinets ,the executive to take recommendation that are coming from the evidence that we have ,so that we are not just guessing we are able to attach our action plans to the data that we need ,… we need to improve on documentation, database ,lobbying our leadership through our executive because sometimes there is a disconnect between when you are trying to employ a certain program that you have from a certain information and the executive quite don't understand what to do". (IDI, Management, Taita Taveta County).

Counties initiated mechanisms for engaging in research and sharing findings with staff

Some counties have initiated quality improvement initiatives headed by heads of departments. In addition, data sharing are used to support quality improvement processes as indicated below.

"We do it as heads of departments combined through quality improvement initiative, this is done through our hospital quality improvement team and our heads of department. We analyze the service and the data." (IDI, Management, Taita Taveta County).

"We have monthly meetings where we look at data and various information that we get. Its part of sharing any research finding that has been found. We also share performance in the previous month both in the hospital and the sub County, I believe that it is also part of sharing because it helps us in the way forward". (IDI, Management, Kitui County).

Documents in the county/Hospital that support research engagements

Documents that support research engagement at the counties include national guidelines, routine data from DHIS and consultancy reports (between county health departments and consultants who have signed MoUs for such undertaking) as mentioned in the responses below.

"National guidelines that come from the ministry of Health." (IDI, Management, Taita Taveta County).

"*From the routine data that we collect from DHIS and from our patients we were able to see that some of these policies including formation of that diabetic comprehensive clinic was actually driven by research…*" (IDI, Frontline healthcare worker, Nyandarua).

"*There are MOUs that are mainly found at the county levels.*" (IDI, Management, Kitui County).

Budget allocation for capacity building

A number of respondents (7/9), reported that counties do have budgets allocated for research and training. However, all the funds are allocated to training aspects without mention of research monies as emphasized by participants:

"…one of the biggest challenge is funding!" (IDI, Management, Kitui County).

"With research, there should be good allocation of funds so that we can fill the gaps where there is need." (IDI, Frontline healthcare worker, Makueni).

"Yes, most of it was allocated for trainings, to a few of our own, because we engaged students from Taita Taveta University who are statisticians. The idea being to have an our own statistician, trained on the basic research methods and we decided all the trainings to be on the quantitative data and consolidated to wait for their feedback. " (IDI, Management, Taita Taveta County).

"*We have budgetary constraints, in every quarterly budget as we always allocate some money for trainings and I believe there are some interested party through formal application and can benefit from that…"* (IDI, Frontline healthcare worker, Nyandarua).

"…our budgeting is done at the county level, us we do the small budgets but if there was such allocation we would be interested in carrying out learning and training". " (IDI, Management, Isiolo County).

Suggestion(s) that you wish to highlight when it comes to health research and decision making in this county/hospital

Allocation of more staff to be engaged in EIDM processes was mentioned by 6/9 respondents. Moreso, effort to build capacity of the staff as to move from knowledge about research evidence use to actual application (skills mix) is was mentioned as the missing link as indicated in the responses below:

"*The county government to allocate more workers particularly health research officers and records workers. We are good at reporting and we need to be ahead, to do analysis both progressively and retrogressively in terms of data. "* (IDI, Management, Taita Taveta County).

"We need more people in research, and also this interaction has opened some doors and I will do as I can to do more in my facility for evidence informed decision making." (IDI, Frontline healthcare worker, Nyandarua).

"most of us health workers we learned research methods and statistics in college but it is just basic and I think it is good for a staff to be considered to go and study for more research because it is not anything that everyone can do, so we need to change our attitude and our main problem is human resource because they only do on some

studies and the knowledge they have is just basics…" (IDI, Management, Isiolo County).

Capacity building in data analytics and relating the same to issues raised during decision making was mentioned by respondents as indicated in the quote below:

"Another thing if there is a way of formalizing using data for decision making because as a hospital sometimes might want to use them but you find that it will not be well recognized because of the various rules and regulations and the way people have been doing things. So if there is a way of making sure that there is a formal process of using that data for decision making. And again the issue of operational research in the institution…. This could in feed into the system, if we could have a database whereby people could have small studies and that could become a major study where people could use this on operational research" (IDI, Management, Kitui County).

In addition, through such data evaluation, it could help identify operational research issues that counties could undertake.

Discussion

Institutionalized platforms that promote research engagement

There was no statistical differences between response agreements expressed by management carders and those by various heads of various public hospital departments regarding institutional structures that promote research engagement in the counties. There is need to build interactive activities and build relationships between research producers and users (11). The counties lack research funding. The government is 'reinventing' itself towards more cost efficiency, performance monitoring and evaluation systems (12). Also, they lack committees and policies to guide research due to limited collaboration to address health needs. The research goal is to increase evidence use in policy making and implementation (13, 14, 15). The key research partners who assist research generation include NGOs/ FBO (20.5%), national government (21.8%) and regional partners (21.8%). The NGO and MOH have a viable model for EIDM bringing together a wide range of stakeholders in communities of practice focused on supporting evidence-informed national health policy (16).

The managers (54.5%) reported that once in a while, MCAs requested for evidence to support health agendas. It implies there is a need to increase the use of evidence in policy making and implementation (13,14,15). The differences in the responses between the two groups was found to be statistically significant at chi-square=6.45, def.=2, p-value=0.038. The policy-making is shaped by politics, individual and institutional systems (15,17). MCAs were mainly interested in highly summarized evidence as opposed to operational data generated by various service departments. The research evidence do not inform or guide county integrated development plan (CIDP) action matrices. The policy-making process is shaped by politics, individual and institutional belief systems, formal and informal systems (15,17).

Availability of locally appropriate and easily accessible infrastructure to house existing research evidence

Approximately (27.6%) of management carders and (20.6%) of the frontline workers reported awareness to CIDP commissioning (chi-square= 0.457, d.f. = 2, p=0.796). Researchers and MOH decision-makers platforms (18), MOH/ WHO policy formulation initiatives (19), or NGO independent translation (3) have been used to integrate evidence into policy while stimulating knowledge sharing relationships among stakeholders (3,18,19).

There was limited awareness of locally appropriate and easily accessible infrastructure to

house existing research evidence. For research evidence in health care decision making, identify knowledge brokers for support (20). There was no significant association in responses between management and public hospital departments. The frequently mentioned infrastructure include access to reliable electricity connection (29.3%), IT equipment (26.7%), stable internet access (16.7%) and engagement to communities-of-practice (16.0%). It is also noted that the online platforms require organizations to have ready access to the appropriate technology which may be challenging (11). Knowledge exchange or integrated knowledge translation (21) is the means to bridge decision making in health research. These linkage mechanisms take a range of forms with varying degrees of formality (22).

Mechanisms to synthesize and disseminate research evidence

There was low awareness level on mechanisms to synthesize and disseminate research evidence (Chi-square= 1.088, d.f. = 2, p-value= 0.58). Activities for increasing evidence use focus on the capacity to conduct and disseminate policy-relevant research rather than on capacity to use evidence, driven from the research community (17,22;23). Secondly, it suggests that management and hospital departments had limited ability to synthesis research in terms of completeness, appropriateness, timeliness and adoption of the research evidence (Chi-square= 4.805, d.f. = 4, p-value= 0.308). Good facilitation, trusting relationships, clarity of purpose and a problem-based approach are essential for capacity-building (25).

Institutional strategies that promote use of research evidence

There was a mixed response among management carders and public hospital departments regarding priority on the use of research evidence in daily activities. Approximately (30.6%) of the management carder while (20.5%) of hospital departments prioritized research. The increased use of research evidence in decision making lead to desired goals and greater accountability (13). Some of the support tools availed to various staff to increase access and application of research findings include database access (28.2%), internal dissemination forums (28.2%) and request for expert supports (15.4%) Research specific tools are useful (26) embedding research synthesis in government structures (27). The processes involve institutionalized policy dialogues within routine governance processes for continuity (19).

There is need for increased emphasis on research to aid effectiveness (25; 28). Training requires to incorporate a range of approaches (28). Overall, 25% of the management carders and 23.1% of the hospital departments were aware of mentorship to promote research evidence generation. The mentorship, workshops, feedback, coaching, informal meetings and training of health care professionals for evidence-based practice need to focus on transformative learning to local contexts (29).

Standardized indicators to monitor research engagement functions

Research-related indicators were identified by management carders and health departments as integral in the monitoring, evaluation and organization learning (MEL) matrix. There was a mixed response to the composition of indicators as profiled. Institution platforms need to reinvent towards performance monitoring and evaluation systems (30)

Lessons learnt from the qualitative findings

Availability of centralized database and repositories that houses up-to-date information would go a great way towards demand and use of

research evidence that is relevant, timely and context-specific to the needs of the counties. Coupled with this, is the lack of documentation and data analytic skills among county teams. This calls for capacity building that focus on information triangulation methodologies between data analytics and the synthesized research evidence which would translate to increase evidence demand and use.

In most county budget allocation, research funds are tied with training funds and this hamper the value realization from research as a specific activity as opposed to training investment which usually has high cost-benefit value. Thus, the budgetary issues are associated with convincing politicians (who approve budget appropriation) and county MoH leadership (determinants of budget activities) that research has both short term and long term investment benefits. There is need for sustained targeted research evidence communication to politicians, top leadership and staff workers on adaptation and adoption for research evidence to promote and sustain EIDM processes at county level. Lobbying should preferably be carried-out by internal research staff / committees so that it is available at the time of request by decision makers. We also know that capacity building must be combined with opportunities and motivations (30).

Conclusion

In summary, the survey findings suggest there exists limited capacity among public health organizations to adopt and adapt research evidence to inform decision making processes in Kenya. This calls for enhancing institutionalized platforms and structures that promote research engagement. In addition, there need to increase evidence use and linkage mechanisms in policy making and implementation among public health organizations. This can be done through motivating staff; provision of highly summarized evidence policy briefs through proper identification of knowledge brokers to support research synthesis; and creation of awareness of locally accessible infrastructure, support tools and equipment.

Recommendations

Build sustainable relationships and trust among public healthcare workers and at organizational level. Establish rapid research review mechanism that will increase evidence use, synthesis, capacity to conduct and disseminate policy-relevant research. Roll-out transformative training and mentorship of healthcare professionals for evidence-based practice. There is need for integration of monitoring and evaluation systems among health professionals. Timely delivery of capacity-building activities among healthcare workers.

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Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

All the authors participated in the design, data analysis, and interpretation of results, manuscript writing and draft submission. All authors read the manuscript for approval.

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