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Original Article

Mapping Health Research Capacity Building Initiatives in Kenya: A Scoping Review

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ABSTRACT

Health research capacity building (HRCB) is fundamental to the development of resilient health systems, the production of locally relevant evidence, and the advancement of evidence-based policy in low- and middle-income countries such as Kenya. Despite notable progress, Kenya's HRCB landscape remains fragmented, donor-dependent, and heavily concentrated in urban academic institutions, with limited national coordination or systematic evaluation. This scoping review aimed to comprehensively map HRCB initiatives implemented in Kenya between 2010 and 2025, identifying key thematic areas, geographical coverage, and institutional actors. The review followed the Arksey and O'Malley methodological framework, augmented by the Joanna Briggs Institute (JBI) guidelines and the PRISMA 2020 checklist. Eligibility criteria were defined using the Population–Concept–Context (PCC) framework, focusing on individuals, institutions, and programs engaged in research training, mentorship, infrastructure development, policy engagement, and collaboration within the Kenyan context. A total of 110 records were identified through systematic searches of peer-reviewed databases (PubMed, Google Scholar, ResearchGate) and grey literature sources, including reports from government agencies, academic institutions, and development partners. After screening and full-text review, 31 studies were included in the final synthesis. Data were charted using thematic matrices and analysed narratively. Five key themes emerged: training and mentorship, institutional strengthening, research networks and collaborations, research-to-policy linkages, and equity considerations, including regional and gender disparities. While programs such as CARTA, Afya Bora, and KEMRI-led initiatives demonstrated impact, challenges included inadequate rural reach, persistent gender imbalances, limited sustainability, and weak national ownership. Findings reveal a lack of standardised monitoring indicators and minimal integration of HRCB into broader health and education systems. This review underscores the urgent need for a coordinated national HRCB framework that promotes inclusivity, local leadership, and long-term sustainability. Such efforts are essential to optimise Kenya's research ecosystem, bridge capacity gaps, and

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align research development with national health priorities and global goals.

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INTRODUCTION

Health research capacity building (HRCB) refers to the ongoing development of individual, organisational, and systemic competencies required to design, conduct, manage, disseminate, and utilise high-quality health research (IJsselmuiden, 2012; Amde et al., 2019). The World Health Organization (WHO) defines health research capacity as "the ability of individuals, organisations, and systems to perform and utilize health research effectively, efficiently, and sustainably to improve health outcome."(Minja et al. 2011). It is essential for advancing evidence-based policies, achieving health equity, and meeting global health targets such as the Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC)(Mullan et al., 2012).

Globally, LMICs account for over 90% of the global disease burden but receive less than 10% of global health research funding, a disparity that severely limits their ability to generate and apply relevant evidence (Razzouk et al., 2010). High-income countries dominate more than 80% of global scientific publications, while LMICs collectively produce fewer than 20%, despite housing the majority of the world's population (UNESCO, 2021). This imbalance perpetuates dependency on external expertise and reinforces inequities in health outcomes. As a response, global strategies including the Bamako Call to Action and programs like the Medical Education Partnership Initiative (MEPI) and Fogarty International Center have sought to bridge the capacity gap through investments in training, infrastructure, and mentorship (Mullan et al., 2012; Bennett et al., 2013).

At the continental level, Africa contributes less than 2% of the world's total scientific publications, with significant disparities across countries. Initiatives like the Consortium for Advanced Research Training in Africa (CARTA) have emerged to address this gap by supporting doctoral-level training and South-South collaboration (Ezeh et al., 2010). However, capacity across African institutions remains uneven, with recurring challenges such as limited research funding, insufficient infrastructure, and poor retention of skilled researchers (IJsselmuiden et al., 2012; Kasprowicz et al., 2020). Furthermore, African scholars continue to report inequities in international partnerships, with Northern institutions frequently controlling research agendas and resources, often relegating local partners to subordinate roles (Munung et al., 2017). Gender disparities are also prevalent; women constitute less than 30% of researchers in sub-Saharan Africa, and are underrepresented in

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leadership and authorship roles (Dhatt et al., 2017).

In Kenya, significant progress has been made through institutions like the Kenya Medical Research Institute (KEMRI), the University of Nairobi, and regional partnerships such as the KEMRI/CDC Health and Demographic Surveillance System (Odhiambo et al., 2012). Kenya is among the top five producers of health research output in sub-Saharan Africa and contributes to regional and global networks in HIV, malaria, and implementation science. The adoption of District Health Information Software (DHIS2) nationwide has enhanced real-time data collection and evidence use in health decision-making (Karuri et al., 2014; Manya et al., n.d.). Despite these achievements, research productivity in Kenyan universities remains limited. A recent review revealed that less than 20% of faculty are actively engaged in research, and the country's average output is below regional comparators (Uwizeye et al., n.d.).

Persistent challenges include inadequate mentorship, fragmented funding, lack of institutional incentives, and poor linkage between research and policymaking (Osanjo et al., 2016; *Topazian et al., n.d.)*. In rural counties, infrastructure and staffing shortages hinder local research development, exacerbating regional inequities. Although programs like the Afya Bora Consortium and the Knowledge for Change initiative have introduced promising models of leadership training and decolonised participatory research (Ousman et al., n.d.; Nyirenda et al., 2021). Many initiatives remain donor-dependent and disconnected from national coordination mechanisms.

In summary, while Kenya has made strides in health research development, systemic barriers continue to limit equitable and sustainable capacity building. A coherent mapping of existing efforts is urgently needed to guide investment, inform policy, and build a nationally coordinated research system capable of addressing current and future health challenges.

Problem Statement

Health research capacity-building initiatives have gained traction in Kenya, but there is no comprehensive, structured account of their scope, implementation, or impact across the country. Existing documentation is fragmented, often focusing on isolated institutions, donor-driven programs, or thematic areas, which makes it difficult to form a coherent national picture. There is also a methodological gap, as few studies have applied rigorous or systematic approaches, such as scoping reviews, to map and analyse the breadth of these efforts. As a result, opportunities for learning, coordination, and strategic planning remain underutilised.

Furthermore, most studies are geographically concentrated in urban or academic centres, leaving rural and underserved regions underrepresented. This creates a knowledge gap about the distribution of research capacity and the contextual factors that influence capacity-building outcomes across different parts of the country. Without a holistic understanding of where and how these initiatives operate, Kenya risks perpetuating inequities in research investment and missing opportunities to strengthen its health research system in a balanced and sustainable way.

This scoping review addresses these gaps by systematically mapping health research capacity-building initiatives across Kenya, analysing their geographic reach, thematic focus, and methodological characteristics to inform policy, practice, and future research.

Rationale

Health research capacity is critical for generating locally relevant evidence to inform public health policies, strengthen health systems, and improve health outcomes. In Kenya, a growing number of HRCB initiatives have emerged, including mentorship programs, research training, infrastructure development, and institutional collaborations (Osanjo et al., 2016; Bennett et al., 2013). However, these efforts are often fragmented, donor-driven, and poorly

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coordinated, leading to inefficiencies, duplication of efforts, and regional disparities. Despite Kenya's active role in regional health research through institutions like KEMRI and partnerships such as the KEMRI/CDC surveillance system (Odhiambo et al., 2012), there is no comprehensive synthesis of ongoing HRCB initiatives or their effectiveness. As a result, policymakers and research institutions lack the evidence base needed to strategically scale successful models or address persistent capacity gaps.

Globally, and across Africa, similar challenges have been observed. Although regional efforts like the CARTA and the MEPI have demonstrated success in building local capacity (Ezeh et al., 2010; Mullan et al., 2012), these programs still struggle with sustainability and alignment with national research agendas (Minja et al., 2014; Kasprowicz et al., 2020). Moreover, literature highlights persistent power asymmetries in international research collaborations, with African researchers often relegated to subordinate roles, limiting ownership and long-term impact (Munung et al. 2017; Dhatt *et al.,* 2017). Without a clear mapping of who is doing what, where, and how, Kenya may continue to invest in isolated, overlapping, or short-term initiatives, instead of developing a harmonised, sustainable national strategy for research capacity development.

This scoping review is therefore essential to map, categorise, and analyse health research capacity-building initiatives across Kenya. By systematically identifying key players, thematic focus areas, geographic coverage, and documented outcomes, the review will generate critical insights to guide investment, policy development, and program design. It will also contribute to the global discourse on equitable research partnerships and locally led capacity strengthening (Bowsher et al., 2019; Hawkes et al., 2016). Ultimately, the findings will support the optimisation of health research systems in Kenya, fostering stronger, more inclusive, and more sustainable research ecosystems capable of addressing both national and global health challenges**.**

Gaps in the Literature

Despite the increasing recognition of the importance of health research capacity building, there remains a lack of comprehensive and systematically organised evidence on the breadth and depth of such initiatives in Kenya. Existing studies tend to focus narrowly on specific institutions, programs, or thematic areas, without providing an overarching view of the national landscape. This leaves a critical gap in understanding how different HRCB initiatives align, overlap, or diverge across sectors and institutions.

Additionally, most available literature adopts descriptive or narrative approaches, with limited use of robust methodological frameworks that allow for comparison, synthesis, or trend analysis. There is a notable absence of scoping reviews or systematic mapping exercises that compile and evaluate the various capacity-building efforts in a structured manner. This limits the ability to identify best practices, scale effective models, or pinpoint persistent barriers to progress.

Regional disparities also emerge as an underexplored dimension in the existing literature. Much of the available evidence is concentrated in a few urban and academic hubs, leaving out health research capacity issues in rural, marginalised, or underserved counties. As a result, there is insufficient understanding of how geographic, institutional, or socio-economic contexts influence the design, implementation, and outcomes of capacity-building initiatives across Kenya. This review seeks to fill these gaps by offering a nationally scoped and methodologically rigorous mapping of HRCB efforts.

Objective of the Study

To map health research capacity-building initiatives in Kenya.

METHODOLOGY

Study Design

This scoping review was designed using the well-established methodological framework developed

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by Arksey and O'Malley (2005) with enhancements provided by the Joanna Briggs Institute (JBI) guidelines to ensure methodological rigour and clarity. To further strengthen the transparency and reproducibility of the review process, the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist was applied throughout the study. This helped guide the identification, screening, eligibility assessment, and inclusion of studies, and is visually supported by the PRISMA flow diagram included in the results section.

Eligibility Criteria

The eligibility criteria were structured using the PCC (Population–Concept–Context) model to ensure clarity, focus, and consistency throughout the review process. The target population included individuals, institutions, and organisations engaged in health research in Kenya, such as academic institutions, government agencies, NGOs, and research consortia. The core concept of interest was HRCB, which encompassed activities including research training, mentorship, infrastructure development, institutional strengthening, research funding, and policy or governance support aimed at improving research systems. The context was strictly limited to Kenya, covering both national and sub-national levels, including urban, peri-urban, and rural regions to account for regional variation in the implementation of HRCB efforts. To ensure the inclusion of relevant and recent evidence, the review considered both peer-reviewed journal articles and grey literature, including institutional reports, policy briefs, and program evaluations published between 2010 and 2025. Studies employing quantitative, qualitative, or mixed-methods designs were eligible, provided they specifically described or evaluated health research capacity-building interventions in Kenya. Exclusion criteria ruled out studies that lacked a capacity-building component, those not focused on the Kenyan context, purely descriptive epidemiological studies without an intervention or capacity-building focus, non-English publications, and studies conducted outside the 2010–2025 timeframe.

Information Sources and Search Strategy

Databases

To ensure a comprehensive overview of HRCB initiatives in Kenya, this review utilised both academic and grey literature sources. Peer-reviewed literature was sourced from major academic databases, including PubMed, Google Scholar, and ResearchGate, selected for their broad coverage of public health, biomedical research, and African scholarship. Grey literature was an essential component of the review and included official publications from the KEMRI, the Ministry of Health (Kenya), the University of Nairobi, and development partners engaged in HRCB work. Reports, strategic plans, and program documents from international organisations such as the World Health Organization (WHO), CARTA, and the Fogarty International Center were also reviewed. Institutional websites, NGO repositories, and government databases were searched to retrieve policy documents, capacity development reports, and program evaluations relevant to the Kenyan context.

Search Strings

The search strategy utilised keywords and Boolean operators based on the PCC framework. Search terms included combinations of keywords such as "health research," "capacity building," "research training," "Kenya," and "research development." Boolean operators (AND, OR) were used to refine and expand the search results. Examples of the search strings used are: ("health research" OR "biomedical research") AND ("capacity building" OR "research training" OR "research development") AND ("Kenya"). These search strings were applied to identify relevant studies within the selected databases.

Date of Search

The initial search was conducted on 15th June 2025 to ensure the inclusion of the most up-to-date literature available.

Grey Literature Sources

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In addition to peer-reviewed articles, grey literature was an essential part of the review. Grey literature sources included reports and documents from the Kenya Medical Research Institute (KEMRI), the Ministry of Health, Kenya, the University of Nairobi, and international health organisations such as the WHO and AFIDEP. These sources were identified through institutional websites, NGO reports, and conference proceedings, ensuring a broad capture of relevant health research initiatives.

Selection of Sources

Screening Process

The screening process followed the PRISMA 2020 guidelines and was conducted in two main stages. First, a total of 110 records were identified through searches in academic databases and grey literature sources. After the removal of duplicates, 82 unique records remained and were subjected to title and abstract screening to assess their relevance based on the predefined eligibility criteria. Of these, 55 articles qualified for full-text review, during which each document was carefully assessed for its focus on HRCB initiatives within the Kenyan context. Following this in-depth review, 31 studies met all inclusion criteria and were included in the final synthesis.

Data Charting Process

Data from the included studies were systematically extracted and organised in a literature matrix created in Microsoft Excel. This matrix captured key details such as author(s), year of publication, study title, methodology, description of capacity-building initiatives, geographic focus, target population, and reported outcomes. This process facilitated a structured overview of the literature for further synthesis. A thematic matrix was also developed to categorise the data based on emerging themes such as institutional capacity development, workforce training, research infrastructure, policy support, and collaborations. This thematic organisation allowed for a detailed mapping of key areas of health research capacity building across the studies reviewed.

Synthesis of Results

The results were synthesised into key themes to explore common trends and differences across studies. Themes such as institutional strengthening, research training programs, funding mechanisms, policy frameworks, and academic collaborations emerged as focal points for capacity-building efforts in Kenya. These themes were used to structure the final synthesis of the results. The qualitative data were analysed through narrative synthesis, focusing on descriptions of health research capacity-building initiatives and their impacts. The synthesis aimed to identify insights into the effectiveness of these initiatives, challenges faced, and key lessons learned. For studies that included quantitative data, metrics such as the number of trained researchers, funding allocations, and the growth of research infrastructure were extracted and summarised. These quantitative findings provided a broader understanding of the scale of capacity-building efforts in Kenya. Microsoft Excel was the primary tool used for organising data, developing matrices, and conducting thematic analysis. The software allowed for effective management of large volumes of data and enabled the identification of patterns across studies. To ensure accurate and consistent citation throughout the review process, Mendeley referencing manager software was used to handle citations and create the reference list.

RESULTS

PRISMA Flow Diagram and Study Selection

The literature search and screening process yielded a total of 110 records through database searches and grey literature sources. After removing duplicates, 82 articles were screened by title and abstract. Of these, 55 full-text articles met the inclusion criteria, and 31 were included in the final scoping review. These studies were drawn from peer-reviewed journals, organisational reports, conference proceedings, and institutional publications. The screening process followed the PRISMA 2020 flow structure and is summarised below:

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Table 1: Prisma Flow Diagram

PRISMA Flow Diagram	Number
Records identified	110
Title and abstract screened	82
Full-text articles assessed	55
Studies included in the synthesis	31

Characteristics of Included Studies

The reviewed studies spanned from 2010 to 2025 and covered a diverse array of HRCB initiatives across Kenya. Studies originated from leading Kenyan research institutions such as the KEMRI**,** the University of Nairobi, and several international partnerships. The studies employed various methodologies, including qualitative case studies, program evaluations, cross-sectional surveys, and mixed-method designs.

Most studies focused on national-level initiatives based in Nairobi and academic centres; however, some extended into regional and county-level health systems. Common target populations included health professionals, researchers, graduate students, academic faculty, and institutional administrators. The scope of initiatives ranged from short-term workshops to long-term institutional strengthening and multi-country partnerships.

Synthesis of Results

A thematic synthesis of the included studies revealed five major themes central to the landscape of HRCB in Kenya:

- **Training and Mentorship Programs**

Training and mentorship were consistently identified as foundational pillars of HRCB initiatives across Kenya. Numerous programs focused on improving individual competencies in research design, data analysis, scientific writing, grant application, and leadership. Notably, the Fogarty International Center programs supported structured mentorship across Kenyan universities, linking early-career researchers with experienced global mentors (Bennett et al. n.d.). Similarly, the Afya Bora Fellowship Program offered interprofessional training for mid-level health professionals in leadership, implementation science, and HIV care across Kenya and sub-Saharan Africa (Ousman et al., n.d.).

At the institutional level, the University of Nairobi's implementation science training program emphasised practical research applications and was successful in integrating mentorship within postgraduate training (Osanjo *et al.,* 2016). In addition, CARTA promoted doctoral-level mentorship and research leadership by providing long-term support to African scholars *(Ezeh et al., 2010)*.

Despite these efforts, several studies noted barriers to sustainable mentorship, such as limited availability of senior researchers, unclear mentorship structures, and inadequate institutional support (Bates et al., 2011; Manzi et al., 2017). In some cases, mentorship was limited to externally funded short-term projects, with no lasting institutional mechanisms for continuity once funding ended (Cancedda et al., 2015; Munung et al., 2017).

- **Institutional Strengthening**

A recurring theme was the need to build institutional capacity to support and sustain health research. Key components of institutional strengthening included laboratory infrastructure, research management systems, institutional review boards (IRBs), research administration units, and physical and digital infrastructure.

The KEMRI/CDC health and demographic surveillance system in western Kenya was widely cited as a model of integrated institutional capacity, contributing to public health monitoring and research excellence (Odhiambo et al., 2012). Efforts to enhance data systems, such as the national rollout of DHIS2, were also significant in strengthening evidence-based decision-making

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within health institutions (Manya et al., 2012; Karuri et al., 2014).

Institutional development was also supported through programs such as WHO/TDR, which invested in laboratory systems and biosafety infrastructure (Alemnji et al., 2014; Davies et al., n.d.). However, studies pointed out that many institutions, especially in rural areas or non-academic counties, lacked basic resources to conduct research, including internet access, skilled personnel, and administrative support (Amde et al., 2019); (Uwizeye et al., n.d.). Weak procurement systems, irregular funding, and bureaucratic delays were also cited as significant obstacles.

- **Research Networks and Collaborations**

Collaborative networks were seen as critical for sharing resources, building partnerships, and enhancing the regional and international visibility of Kenyan research. The CARTA model facilitated joint doctoral training and south-south collaborations across African institutions (Ezeh et al., 2010). Similarly, the Knowledge for Change Consortium promoted decolonised and participatory approaches to research through equitable collaborations and community engagement (Nyirenda et al., 2021).

Other successful networks included the Afya Bora Consortium, which linked universities and ministries of health across Africa and the U.S., and PHEIC (Population Health Implementation and Training partnerships) that offered cross-country implementation science learning platforms (Manzi et al., 2018). These networks helped overcome local isolation, introduced new methodologies, and provided career progression opportunities for early-career researchers.

However, power asymmetries in international partnerships remained a concern. African researchers expressed concerns over limited authorship recognition, donor-led agendas, and insufficient control over project direction (Munung et al., 2017; Bowsher et al., 2019). There was a call for more equitable governance structures, shared leadership, and prioritisation of locally defined research agendas (Kasprowicz et al., 2020).

- **Policy Linkages and Knowledge Translation**

Several studies emphasised the need to improve research-to-policy linkages. Despite the generation of vast research evidence, much of it failed to influence policy due to disconnects between researchers and decision-makers. Programs such as those evaluated by Hawkes et al. (2016) and Jao et al. (2015) sought to enhance policymakers' capacity to understand and apply research, often through stakeholder dialogues, policy briefs, and participatory workshops.

At the national level, the Ministry of Health and institutions such as AFIDEP initiated efforts to institutionalise knowledge translation by embedding research advisors within ministries. However, the uptake of evidence in policy was inconsistent and hindered by political interference, poor communication channels, and the lack of dedicated funding for knowledge translation activities (Lang et al., 2010; Topazian et al., 2016).

In addition, researchers often lacked training in policy engagement or incentives to translate findings into practical recommendations. This led to missed opportunities to integrate evidence into strategic planning or service delivery models, particularly at the county level, where health service devolution required context-specific data.

- **Equity, Regional Inclusion, and Gender Balance**

Equity-related gaps in the distribution of HRCB initiatives emerged as a cross-cutting theme. While institutions in Nairobi and major cities like Kisumu and Eldoret were consistently represented, rural counties had minimal visibility in research programs or partnerships. This urban bias resulted in missed opportunities to strengthen decentralised research systems and adapt interventions to local needs. Inequity was also noted as a persistent issue. Women remained underrepresented in senior research positions,

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editorial boards, and grant leadership roles, despite participating in training programs (Dhatt *et al.,* 2017). Structural barriers such as caregiving responsibilities, institutional biases, and lack of targeted mentorship were cited as contributors to the gender gap.

Some efforts attempted to address these inequities by incorporating inclusive recruitment strategies and promoting affirmative action in fellowships and leadership tracks. Nonetheless, these efforts were not uniformly implemented or evaluated for impact, and studies called for stronger gender-sensitive policies in HRCB design (Bowsher et al., 2019; Minja et al., 2014).

Qualitative and Quantitative Findings

The qualitative synthesis revealed a shared emphasis on the importance of sustainability, local ownership, and contextual relevance. Many capacity-building efforts were described as donor-dependent or short-term, lacking long-term financing or institutional embedding (Cancedda et al., 2015; Minja et al., 2014). Commonly cited barriers included insufficient government investment, poor inter-agency coordination, and weak monitoring and evaluation frameworks.

Quantitatively, only a subset of studies reported numerical indicators. For instance, Osanjo et al. (2016) documented training of over 100 implementation science trainees at the University of Nairobi. Other studies reported the number of workshops conducted, grants won, and published outputs as proxies for capacity growth. However, consistent metrics for tracking progress across initiatives were largely missing.

Tools Used and Data Management

All data from included studies were managed using Microsoft Excel, with a literature matrix capturing bibliographic and descriptive data, and a thematic matrix organising qualitative findings. Mendeley reference manager software facilitated citation management, reference formatting, and duplicate removal throughout the review process.

DISCUSSION

Summary of Key Findings

This scoping review identified and synthesised 31 studies documenting HRCB initiatives in Kenya. Five major themes emerged: training and mentorship programs, institutional strengthening, research collaborations and networks, policy linkages and knowledge translation, and equity considerations (including regional inclusion and gender balance). Most initiatives were concentrated in urban academic centres, with a notable absence of structured, sustainable mechanisms in rural or underserved regions. A common challenge across studies was the donor-dependent and fragmented nature of programs, limiting long-term impact and coherence across the national research landscape.

Interpretation in the Context of Existing Knowledge

These findings align with global evidence that highlights the uneven development of health research systems in LMICs, particularly regarding institutional sustainability, equitable partnerships, and mentorship quality (Minja et al., 2014; Bowsher et al., 2019). For instance, the dominance of donor-driven initiatives echoes findings from (Cancedda et al., 2015), who cautioned that externally funded training often lacks sustainability without integration into national strategies. Similarly, concerns about power asymmetries in collaborations mirror the perspectives of Munung et al. (2017), who documented the marginalisation of African voices in agenda-setting and authorship roles.

Efforts like the CARTA model (Ezeh et al., 2010) and Afya Bora Consortium (Ousman et al., n.d.) support this review's observation that regionally led and contextually adapted programs are more likely to succeed in addressing local needs. Moreover, limitations in research-to-policy translation and underutilization of evidence have been repeatedly reported in LMICs (Hawkes et al., 2016; Lang et al., 2010), reinforcing the call for improved knowledge translation mechanisms in Kenya.

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Implications for Practice, Policy, and Future Research

The results have significant implications for policymakers, institutions, and funding bodies. First, there is an urgent need for a centralised national database or platform to track and coordinate HRCB initiatives. Such a system could help reduce duplication, improve resource allocation, and identify under-resourced regions or populations. Second, there is a clear need to embed mentorship and training structures within academic institutions, supported by local funding, to promote sustainability and institutional ownership. Strengthening local mentorship systems and reducing dependence on external partners may help address gaps identified by Bennett et al. (n.d.) and Pfund et al. (2015).

Policy frameworks should also prioritise inclusive capacity-building efforts by enforcing gender equity and regional distribution in grant-making and program implementation. The persistent urban and gender disparities revealed in this review suggest the need for more affirmative action policies and localised capacity development programs. Additionally, integrating health research into county health systems can improve evidence-based decision-making and service delivery at the local level (Topazian et al., n.d.; Osanjo et al., 2016).

Future research should focus on evaluating the effectiveness and long-term impact of HRCB initiatives, especially in decentralised and rural settings. Standardised metrics and longitudinal tracking systems are necessary to assess capacity growth and identify successful models for scaling up.

Strengths and Limitations of the Review

This review offers a significant contribution by systematically mapping HRCB initiatives in Kenya over 15 years, drawing from both academic and grey literature sources. It highlights the major actors, institutional efforts, and thematic focus areas shaping Kenya's research ecosystem, including training, mentorship, infrastructure, and policy linkages. One of its key strengths lies in revealing geographic and gender disparities, as well as the dominance of donor-driven models, which are rarely examined in a single synthesis. The integration of diverse data sources and alignment with recognised methodological frameworks such as the PCC model, PRISMA checklist, and JBI guidelines enhances the credibility and comprehensiveness of the findings.

Nonetheless, the review has limitations. While it maps the presence and characteristics of HRCB initiatives, it does not evaluate their effectiveness, sustainability, or long-term impact due to the descriptive nature of scoping reviews. Additionally, the variation in reporting quality and detail across sources made it challenging to uniformly extract data, particularly for indicators like funding, outcomes, or evaluation metrics. Despite these limitations, the review provides a strong foundation for informed policy-making, improved coordination of capacity-building efforts, and the design of future studies to evaluate the effectiveness and equity of research development programs in Kenya.

CONCLUSION

This scoping review mapped and synthesised qualities and identified five thematic areas through HRCB activities throughout Kenya from 2010 to 2025: training and mentorship, institutional strengthening, research collaborations, policy engagement, and equity considerations. Although Kenya has recorded significant reforms, especially with initiatives like CARTA, Afya Bora, and KEMRI-linked initiatives, the review has identified imminent risks such as regional inequalities, donor reliance, fragmented program implementation, and inability to sustain programs. Academic and Urban institutions still reign over the landscape at the expense of the underserved and rural areas. Likewise, there are still gender inequalities and power disparities in the international partnerships that result in a small scope in research capacity progression. Major efforts to construct a more coherent, context-sensitive, and equity-based HRCB ecosystem can be done despite these challenges. The attempted tempering of

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mentorships into institutions, the enhancement of regional representation, and the empowerment of local leadership in collaborations would make these efforts contribute significantly to the long-term effects of such moves.

Recommendations for Future Study

The issue regarding HRCB efforts needs longitudinal and outcome-based research in the future to evaluate whether they are sustainable and bring long-term effects. It is also necessary to have standardised indicators to compare progress among various programs so that there can be a better means to compare and be accountable. Also, research must be devoted to the neglected regions and the population, especially rural, to produce more participatory and implementable evidence by including citizens in counties, and women researchers. New studies need to be conducted into innovative forms of locally headed financing and governance that can increase governance in the country and develop national ownership as well as policy relevance.

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