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Research Paper

Nurses' and midwives' participation and utilization of health-related research in Kenya: Implications for evidence-based practice

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ABSTRACT

Objective: To assess the level of participation of nurses and midwives in health-related research, determine the status of utilization of research to inform nursing and midwifery practice in Kenya, and explore perspectives of nurses and midwives about strategies to empower nurses/midwives to engage in health research in Kenya.

Methods: Data were extracted from online survey responses of 156 nurse and midwife educators, practitioners, and managers/administrators. SPSS version 26 was used to analyze quantitative data; qualitative data were analyzed using Excel to organize data into categories.

Results: Over one-third of participants reported ever publishing research (37.2%, 58/156). Participants reported using knowledge gained in nursing school to guide practice most frequently ($n = 148$). Utilization of research findings to guide practice was reported by 80.3% (110/137) of participants. Strategies to enhance participation in the research included research training, research forums, policy reforms, and emphasis on research in curricula.

Conclusions: There is need to intensify and prioritize proposed strategies to empower nurses/midwives to engage in health research.

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What is known?

- Despite accounting for 50% of the global healthcare workforce and providing up to 90% of primary care, nurses and midwives have low rates of participation in research challenging their use of evidence-based practice.
- Previously identified barriers resulting in low nursing research output in Kenya include staff shortages, overrepresentation of training at the diploma level, and limited opportunities for research participation.
- Engaging practice experts in nursing/midwifery research provides rich opportunities for ensuring the translation of research

into practice to improve patient and community health outcomes.

What is new?

- Just a small part of participants identified as nursing and midwifery experts in Kenya report experience participating in research. However, the majority of participants reported using information learned during training to guide their practice. This identified gap between research and practice underscores the importance of building capacity for nursing research and evidence-based practice in Kenya.
- Suggestions to increase nursing/midwifery research participation in research in Kenya included research training, research forums, policy reforms, and emphasis on curricula.

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1. Introduction

Nurses and midwives constitute over 50% of the healthcare workforce globally and provide up to 90% of primary health care services in rural facilities in low-income countries. As such, nurses and midwives are well positioned to make a significant contribution to improving patient outcomes and achieving the global Sustainable Development Goals (SDGs), notably ensuring healthy lives and promoting well-being for all ages [1–7]. The International Council of Nurses (ICN) and World Health Organization (WHO) call on nurses and midwives to generate and use evidence for best nursing and midwifery practice recognizing the contribution of nursing and midwifery research in the delivery of quality healthcare, particularly in resource-constrained settings [3,6–9]. Because of nurses' and midwives' deep understanding of patient and community health needs, they should take the lead in identifying research priorities, conducting research, and utilizing the findings to guide nursing education, management, and practice to improve population health outcomes [10–16].

In Kenya, national research output by nurses and midwives remains low with limited understanding of how nurses and midwives participate in health-related research. Historically, health research has been led by physicians with minimal participation of nurses and midwives, primarily limited to data collection [17]. Often, nurses and midwives are excluded from interpretation, publication, and dissemination of research findings limiting the ability to translate research into evidence-informed practice, especially in low-income countries.

Nurses' and midwives' participation in research is also dependent on context. Globally, the nursing shortage has been a significant challenge with African countries disproportionately impacted. Staffing shortages create high workloads for nurses and midwives in practice settings and limit time for participation in research. In addition, nursing and midwifery education has been traditionally offered in most African nations at the diploma level as the highest qualification contributing to the low level of nursing and midwifery research in Kenya. However, there has been a recent increase in higher levels of education for nursing and midwifery requiring that graduates must now not only demonstrate the ability to collect, present, interpret, and publish research data, but also translate findings into practice [18].

Over the last decade, there has been significant momentum to translate research into practice to improve patient and community health outcomes. To ensure effective translation of research into practice, requires investment in research by nurses and midwives in practice settings, including leading research that impacts their scope of practice. Two decades of research demonstrate a shift of focus research being conducted by nurses primarily for academic purposes to emphasis on integration of research into practice [18,19].

Despite the growing attention to the importance of ensuring best practice outcomes, the nurses' and midwives' participation in research remains low, especially in developing countries such as Kenya. Additionally, the impact of translational research on the role and scope of nurses/midwives across contexts has not been examined. Previous studies have identified barriers to examining the participation of nurses/midwives in research including a lack of clearly defined concepts and assessment tools, low competence for research among nurses/midwives, and contextual understanding [19,20]. Previously identified strategies to empower nurses and midwives to participate in research include support such as mentorship and support from management, relevant academic preparation, access to research, time, and a positive attitude toward research [18]. Utilization of evidence-based practice first requires current understanding of the research involvement of nurses and

midwives to contribute to building an individual and organizational culture of translation of research into clinical practice. The aims of this research were to describe 1) nurses' and midwives' involvement in health-related research, 2) utilization of research to inform nursing and midwifery practice, and 3) strategies to empower nurses and midwives to engage in health-related research in Kenya.

2. Participants and methods

This secondary data analysis uses data from a cross-sectional Delphi study focused on the identification of nursing and midwifery research priorities for Kenya [21] guided by the Guidance on Conducting and REporting DELphi Studies (CREDES) conducting and reporting guidelines for Delphi Studies [22]. Rationale for choosing the Delphi method included: 1) lack of country-specific published guidance for nursing and midwifery research priorities, 2) an overwhelming number of nursing and midwifery research topics and needs requiring prioritization, 3) limited financial resources to conduct a study, 4) widely dispersed nurse and midwife experts throughout the geographic regions of Kenya, and 5) a desire for elimination of bias from any influential experts in positions of power who could control prioritization.

2.1. Participant recruitment

Study participants included nurse and midwife educators, practitioners, and managers/administrators identified through the Office of the Director of Nursing Services in the Kenya Ministry of Health and regional meetings throughout the country. This approach facilitated purposive sampling of qualified nursing and midwifery national experts locally. Nurse and midwifery experts were defined as those who met the following inclusion criteria: 1) a bachelor's degree or higher in nursing, 2) previous participation in conducting nursing/midwifery research, 3) residence in Kenya, 4) registered by the Nursing Council of Kenya with a valid practice license, and 5) identification by colleagues as an expert in nursing/midwifery research [15]. Recruitment of participants continued until there was representation across all regions and types of practice settings in Kenya.

2.2. Data collection

Data were collected using an anonymous online survey questionnaire between December 2020 and April 2021. The survey instrument had two sections. The first section collected data on participants' demographic characteristics, nurses' and midwives' involvement in health-related research, utilization of research to inform nursing and midwifery practice, and an open-ended question for nurses and midwives to suggest strategies to empower engagement in health-related research. Section two had one question where nurses and midwives listed a maximum of five priority topics, problems, concerns or issues that could be addressed through research. Data from the second section were used for the main Delphi study and results are reported elsewhere. The questionnaire was pretested with a sample of 25 participants to identify unclear terminology or questions and for quality improvement of the questionnaire. Data obtained from the pretest were not included in the final data analysis nor were the participants included in the main study.

Two hundred and ninety-nine nurse and midwife experts met the inclusion criteria and were invited to participate in the study. Identified experts were emailed a study invitation with a consent form that was completed prior to study participation. A total of 156 participants completed the informed consent and responded to the

anonymous online questionnaire in the first round of the Delphi survey resulting in a response rate of 52% consistent with the acceptable range of a $\geq 44\%$ response rate for online surveys [23].

For purposes of this research, participation in research was defined in accordance with the Scope of Practice by Nursing Council of Kenya, 2019, whereby different categories of nurses and midwives are expected to participate in research at different levels in the producer-consumer continuum of research. The international collaborative research team obtained ethics review approval in Kenya and the United States of America (USA) from the Kenyatta National Hospital/University of Nairobi Ethics and Research Committee, National Commission for Science, Technology, and Innovation in Kenya, and Montana State University in the USA.

2.3. Analysis of quantitative data

Descriptive statistics were used to describe the sample and summarize responses from the closed-ended questions. Crosstabulations and chi-square statistical tests were used to explore association between participants' socio-demographic characteristics and participation in research activities. Quantitative analysis was conducted using Statistical Package for Social Sciences (SPSS) Version 25.

2.4. Analysis of qualitative data

Data from open-ended questions were summarized to describe where participants obtained nursing and midwifery research information and suggestions for strategies to empower nurses and midwives to participate in health-related research. Individual responses were grouped into similarly themed categories and sub-categories using qualitative content analysis and inductive coding [24,25].

3. Results

3.1. Participants

Most participants were female (75.8%, 116/153), aged 38–57 years (39.6%, 55/139), and had over 20 years of professional experience in nursing/midwifery (46.0%, 69/150). Two-thirds of the participants had less than a master's degree (67.8%, 101/149), including participants with a basic diploma (28.2%, 42/149), post-basic diploma (8.7%, 13/149) and baccalaureate degree (30.9%, 46/149). Twenty-one percent of participants held a master's degree (31/149) and 11.4%, (17/149) either had a doctoral degree or were currently doctoral candidates. Half (50.3%, 74/147) of the participants were employed in a government (28.6%, 42/147) or county (21.8%, 32/147) hospital. Nurse managers and nurses were among the most highly represented participant groups (39.7%, 60/151 and 22.5%, 34/151, respectively) (see Table 1).

3.2. Participation in and utilization of health-related research

Most participants reported using research findings in their current practice (80.3%, 110/137) though more than half (52.3%, 79/151) reported rarely or never reading nursing/midwifery research despite indicating that research papers were easily accessible (72.8%, 110/151). Most participants (62.8%, 98/156) had never published peer-reviewed research findings (see Table 1).

3.3. Research evidence for current nursing/midwifery practice

Participants most frequently reported using knowledge acquired from nursing/midwifery training and experience gained

over time as the evidence used to guide their practice ($n = 148$ and 145, respectively). Just over half of the participants reported using research journals to guide their practice ($n = 86$) (see Table 2).

3.4. Peer-reviewed research publication experience by demographics

Crosstabulations of experience with peer-reviewed research publications with demographic characteristics demonstrated variability. For example, more participants who were older had higher academic preparation, and those with more years of professional experience had significantly more experience with research publications (see Table 1). Current professional role and employer were also significantly associated with research publication experience.

3.5. Sources of nursing/midwifery research information

Participants reported a variety of sources for nursing/midwifery research information. University libraries were mentioned most frequently ($n = 154$), followed by unspecified online sources ($n = 148$) and medical websites/databases ($n = 87$). Local research organizations were least frequently mentioned ($n = 4$) (see Table 2).

3.6. Recommendations to increase nurse/midwife participation in research

Study participants identified four major categories to empower nurses and midwives to participate in health-related research: 1) nurse training and research forums, 2) advocacy in nursing research, 3) policy reforms, and 4) nursing curricula. Table 3 provides an overview of each category, sub-categories, and exemplar quotes for each.

4. Discussion

4.1. Nurses' and midwives' participation in health-related research

The WHO report, *State of the World's Nursing 2020* [5], refers to the wealth of research data and evidence currently available from the global nursing and midwifery workforce. In addition, limitations are mentioned within the data along with major gaps which need to be addressed. Limitations and gaps include: 1) information about the nursing/midwifery workforce, 2) evidence related to practice effectiveness, 3) evidence of team-based effectiveness in a variety of settings and different methodologies, 4) paucity of nurse-driven and funded research in low- and middle-income countries to increase quantity and quality of evidence, and 5) gaps in evidence related to policy-effectiveness, cost-effective, and evaluation of policies implemented to address the negative impact of nurse immigration [5]. However, the report does not include data describing current involvement of the nursing and midwifery workforce in health-related research. Findings from this study contribute to a deeper understanding of country-specific data that can be used to guide and prioritize health-related research in Kenya.

In this study, 38% (29% of females; 9% of males) of participants reported experience publishing in peer-reviewed journals. Not surprisingly, participants with master's, doctoral candidates and doctoral degrees had much higher percentages of publications in peer-reviewed journals. Likewise, publication experience increased with years of experience although not as dramatically. Hagan & Walden [26] in their USA study identified 63% of their 450 nurse respondents as having some type of research experience, similar to findings in this study. In a multisite Australian study of nurses and midwives by Lieschke et al. [18], almost 1/3 of the 816 respondents

Table 1
Participant demographics and research utilization and experience (*n* = 156).

Variable	<i>n</i> (%)	Ever published peer-reviewed research, <i>n</i> (%)		χ^2	<i>P</i>
		Yes	No		
Gender				0.04	0.95
Male	37 (24.2)	14 (24.5)	23 (25.0)		
Female	116 (75.8)	43 (75.4)	69 (75.0)		
Age (years)				20.50	0.001
18–27	11 (7.4)	0 (0)	11 (12.1)		
28–37	30 (20.1)	6 (10.3)	24 (26.4)		
38–47	55 (36.9)	30 (51.7)	25 (27.5)		
48–57	42 (28.2)	20 (34.5)	22 (24.2)		
58–67	11 (7.4)	2 (3.4)	9 (9.9)		
Highest professional education attained				54.86	0.001
Basic Diploma	42 (28.2)	6 (10.7)	36 (38.7)		
Post-Basic Diploma	13 (8.7)	1 (1.8)	12 (12.9)		
Bachelors	46 (30.9)	11 (19.6)	35 (37.6)		
Master	31 (20.8)	23 (41.1)	8 (8.6)		
PhD student – Candidate	3 (2.0)	3 (5.4)	0 (0)		
PhD – Nursing	14 (9.4)	12 (21.4)	2 (2.2)		
Years of professional experience				10.56	0.005
1–10	41 (27.3)	7 (12.2)	34 (36.6)		
11–20	40 (26.7)	19 (33.3)	21 (22.6)		
Over 20	69 (46.0)	31 (54.4)	38 (40.9)		
Current employer				37.93	0.001
Government hospital	42 (28.5)	14 (24.6)	28 (31.1)		
Government university	15 (10.2)	13 (22.8)	2 (2.2)		
Government mid-level college	4 (2.7)	3 (5.3)	1 (1.1)		
County hospital	32 (21.8)	11 (19.3)	21 (23.3)		
Private hospital	23 (15.6)	5 (8.8)	18 (20.0)		
Private university	4 (2.7)	4 (7.0)	0 (0)		
Private mid-level college	1 (0.7)	1 (1.9)	0 (0)		
Faith-based hospital	18 (12.2)	2 (3.5)	16 (17.8)		
Faith-based university	2 (1.7)	1 (1.9)	1 (1.1)		
Faith-based mid-level college	1 (0.7)	0 (0)	1 (1.1)		
State parastatal	1 (0.7)	0 (0)	1 (1.1)		
Development partners	3 (2.0)	2 (3.5)	1 (1.1)		
Research institution	1 (0.7)	1 (1.9)	0 (0)		
Current professional role				27.14	0.001
Nurse	34 (22.5)	7 (12.1)	27 (29)		
Midwife	8 (5.3)	2 (3.4)	6 (6.5)		
Clinical Nurse Specialist (Master's)	4 (2.6)	3 (5.2)	1 (1.1)		
Nurse-midwifery faculty	25 (16.6)	19 (32.8)	6 (6.5)		
Nursing-midwifery association	3 (2.0)	0 (0)	3 (3.2)		
Nurse manager/administrator	60 (39.7)	20 (34.5)	40 (43)		
County public health nurse	15 (10.0)	6 (10.3)	9 (9.7)		
Medical superintendent	1 (0.6)	0 (0)	1 (1.1)		
Researcher	1 (0.6)	1 (1.7)	0 (0)		
Do you use research findings in practice?				3.24	0.070
Yes	110 (80.3)	45 (88.2)	65 (75.6)		
No	27 (19.7)	6 (11.8)	21 (24.4)		
How Frequently do you read nursing/midwifery research?				19.80	0.001
Monthly	49 (32.5)	28 (48.2)	21 (22.6)		
Less than a month	23 (15.2)	12 (20.7)	11 (11.8)		
Rarely	76 (50.3)	16 (27.6)	60 (64.5)		
Never	3 (2.0)	2 (3.4)	1 (1.1)		
How easy is it to access nursing/midwifery research?				24.78	0.001
Extremely easy	26 (17.2)	19 (32.8)	7 (7.5)		
Somewhat easy	81 (53.6)	31 (53.4)	50 (53.8)		
Exceeding easy	3 (2.0)	1 (1.7)	2 (2.2)		
Exceeding difficulty	32 (21.2)	3 (5.2)	29 (31.2)		
Extremely difficulty	9 (6.0)	4 (7.0)	5 (5.4)		

Note: Due to missing data, totals do not sum to sample size.

(29%) indicated they were either currently or previously involved in research studies. Other studies conducted in Ethiopia and Saudi Arabia similarly reported a significant association between years of experience and increased participation in research activities including evidence-based practice utilization [27,28]. This contrasts with findings from Malaysia among faculty in dental schools where there was no significant association between research publication and number of years in academia. However, there was a strong and

positive correlation with publication of research in peer-reviewed journals and reading research articles [29].

Low- and middle-income countries have historically lagged behind high-income countries in the development and number of baccalaureate and higher university-based nursing and midwifery programs, one of the reasons the WHO disseminated the 2009 Global Standards for the Initial Education of Professional Nurses and Midwives [30]. These standards encourage all nations of the world to

Table 2
Evidence for nursing/midwifery practice and sources of nursing/midwifery research information.

Category	n
Evidence for practice	
Knowledge gained from nursing school	148
Knowledge gained over time	145
Knowledge gained from research findings	115
Knowledge gained from reading books	114
Knowledge gained from reading journals	86
Other	31
Sources of research information	
University libraries, repositories, labs	154
Unspecified online sources	148
Medical websites and databases	87
General websites and search engines	46
Kenya nursing association	42
Ministerial updates	32
Other miscellaneous sources	21
Hospital oriented sources	17
Media	19
Continued nursing education	14
Local research organizations	4

Note: Participants could select all options that apply.

develop a reasonable timeline within each country for the achievement of initial entry-level programs for professional nurses and midwives at the baccalaureate level. The WHO Global Standards [30] sought not only to encourage this trend globally, but also to standardize curriculum content based on established competencies and grounded in the most current, reliable evidence. Introduction of the steps involved in generating research evidence to guide education, practice and leadership within the nursing and midwifery professions is introduced at the baccalaureate level and can then be built upon at the masters' and then doctoral levels. Therefore, as low- and middle-income countries continue to grow their number of baccalaureate, masters, and doctoral level nursing and midwifery programs, a commensurate proportion of peer-reviewed research may follow, as supported by associations between level of education and research participation found in this study. Identification of nursing and midwifery research priorities coupled with building strong capacities for nursing and midwifery research is imperative to improving evidence-based practice in Kenya.

4.2. Utilization of research to inform nursing and midwifery practice in Kenya

While most participants reported using research findings to guide their practice, participants in this study were identified as nurse and midwife experts within Kenya. Therefore, research findings may be available and incorporated into practice more readily by this group of professional experts. Lieschke et al. [18] noted that nurses in a large health district in Australia working in specialty areas such as medical, critical care and palliative care had the highest use of research in practice compared to other specialty areas, especially medical and critical care specialties that were significantly higher than midwifery. A recent study among nurses and midwives working in public hospitals in the Amhara region of Ethiopia reported nurses/midwives primarily used guidelines and hospital protocols from their place of employment to guide their practice and reported low use of research, instead relying on shared ideas from team members. Further, they reported limited access to research articles [18].

4.3. Recommendations to increase nurses' and midwives' participation in health-related research

Similar to previous studies, recommendations for increasing nurses' and midwives' participation in health-related research focused on empowerment and motivation for participation [18,26]. Participants described the need for a shift in culture that values and prioritizes the integration of research into education and practice settings. Recommendations to empower participation in nursing/midwifery research included improved research training and research training forums, advocacy for participation in research, professional policy reforms, and revisions to nursing/midwifery education curricula. Participants emphasized both a need to provide initial research training during nursing/midwifery education and opportunities for continuing education about research and evidence-based practice. Advocacy approaches to increase nursing/midwifery participation in research included advocating and funding for research led by nurses/midwives, ensuring nurses/midwives are included on multidisciplinary teams, having clear priority areas to guide their research, and increasing motivation and awareness of research. Professional policy reforms to support nursing/midwifery research focused on providing adequate infrastructure for research participation and use such as release time, evidence-based practice protocols, and clinically based nursing/midwifery research units.

Barriers of participation in research described in this study included poor staffing resulting in high workloads and lack of time for participation in research similar to previous studies [1,18,31,32]. Strategies to overcome these barriers in previous research include strategic planning and operational development to support nurses and midwives to develop their practice based on research evidence and become involved in research, especially through multidisciplinary collaborations between practice sites and universities [33]. Other motivators include the desire to learn and problem-solve, positive collaboration experiences, social engagement, and incentives for research participation [34].

4.4. Limitations

Although participants in this study were recruited from all counties within the country of Kenya, overrepresentation from more populated counties may limit the generalizability of findings. Similarly, although experts were recruited from multiple practice settings, most of the participants were nurses and nurse managers thereby limiting generalizability to midwives and other practice settings. Another limitation may be lack of clear definitions for the research participation. Without a clear definition, participants may have underreported their research participation if they did not consider quality improvement as a form of research. Finally, several factors may have contributed to a low response rate related to the COVID-19 pandemic that was occurring during data collection including stress and limited time of healthcare workers, shift to online learning among nursing/midwifery faculty, and other COVID disruptions.

5. Conclusions

Participation in research and utilization of research evidence in practice is imperative if nursing and midwifery science and art are going to advance and achieve the outcomes our professions, patients, and communities of the 21st century need and deserve. To succeed, collaborative, inter- and intradisciplinary team approaches will be essential with participation at local, national, and global levels.

Table 3
Recommendations to empower nurses and midwives to participate in health-related research.

Category/subcategories	Exemplar quotes
Nursing training and research forums	
Organize nurse training and research symposia seminars and conferences.	- Organize forums for nurses to present in their local counties. - Provide support and motivation, regular summits for dissemination. - Encourage health-related research training, hold more nursing scientific conferences, opening more opportunities for health-related research activities.
Cultivate a culture of reading research journals and create journals and websites to disseminate nurse research findings.	- Establish a digital platform for nurses and midwives to access some of the research work done so as to motivate those who have done the research and encourage others as well. - Open WhatsApp forums for nurses to access recent research articles.
Nurse mentors/mentorship programs.	- Research day, whereby nurses meet and do research. - Ensure nursing is considered a core research area in health. - Mentorship and funding opportunities to undertake research. - Mentorship should be started as early as possible in our profession, and also identify champions in the research who will act as role models.
Refresher training in research and research process.	- They should be encouraged to go back to college and upgrade their studies, i.e., specialize; this will encourage them to do more research in those areas of specialty. - Increased staffing and frequent training in research. - Frequent job training.
Increase the variety of training platforms.	- Opportunities for training and symposia to motivate them to participate in research as they share ideas. - Revival or establishment of research committees in the institutions.
Offer higher education to nurses/midwives.	- Provision of sponsorship. - Promotions and leave to study.
Advocacy in nursing research	
Advocacy for nurse involvement in decision-making/policy.	Have nurses at the policy table and in political seats to influence the nursing agenda.
Nurses to lead their own research.	- Let them take the lead—take control of their research so that they can own it. This will make it easy for implementation. - Need to show them that the data they collect as patient reports can be converted into real research to improve patient outcomes.
Nurses made part of research teams/collaborations.	- Participation in collaborative research with senior peers, participation in multi-disciplinary research, participation in clinical audits. - Let nurses be part of presenters, team leaders.
Identify nursing research thematic areas.	Diversifying thematic areas for research.
Increase nurses' motivation and awareness of research.	- Active involvement of nurses in research, and sensitization of nurses, especially in the rural areas (a forgotten lot). - Sensitizing them and highlighting the various openings that research can offer in their profession.
Nursing profession policy reforms	
Time off to do research/study.	- Allocation of time for research. - Allow them time to read articles.
Employ more nurses/midwives.	- Employ more nurses guided by the nurse-patient ratio. - Reduce overwhelming patient overload by reducing nurse-patient ratios and employing more nurses.
Recognize and reward nurses participating in research.	Those who participate rewarded with either certificates or points.
Establish nursing/midwifery research departments in hospitals.	- Creation of research departments. - Put in place an active nursing and midwifery research department and provide incentives to those who actively participate.
Encourage utilization of research data.	- Research part of objectives to achieve in the clinical areas and encouraging evidence-based practice in health institutions. - Frequent updates and facility-based interventions.
Increase administrative/regulatory support.	- Organize and support studies done by nurses, organize forums for nurses to present in their local counties, and implore policy and decision-makers to fund nursing activities through nursing structures. - Strengthen the nursing research system. - Participate in policy drafting, encourage and support research at all levels by all nurses, allow research at all levels in the scope of practice.
Increase funding/budgetary allocation to nursing research.	- Budget for research. - Encouraging them by funding them. - Establishment of a foundation to support practical research activities.
Nursing curriculum	
Research made part of CPE/CME education.	- Regular CME, support from the Ministry of Health for current updates in nursing/midwifery. - Having talks and CME on the importance of participation in health-related research.
Emphasize research as a course.	- Specialize research nursing as a course. - Improve teaching of research in nursing colleges.

Note: CPE = continuing professional education. CME = continuing medical education.

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CRediT authorship contribution statement

Daniel M. Nzengya: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing - original draft, Writing - review & editing, Project administration. **Albanus K. Mutisya:** Conceptualization, Methodology, Validation, Formal analysis, Investigation, Writing - review & editing. **Miriam C. A. Wagoro:** Conceptualization, Methodology, Validation, Investigation, Resources, Writing - review & editing. **Molly Secor-Turner:**

Conceptualization, Methodology, Formal analysis, Supervision, Resources, Writing - review & editing. **Joan Edwards:** Conceptualization, Methodology, Formal analysis, Supervision, Resources, Writing - review & editing.

Data sharing statement

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

Declaration of competing interest

The authors have declared no conflicts of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijnss.2023.02.001>.

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