

RESEARCH ARTICLE

Assessing health research institutions' knowledge transfer strategies from a developing country perspective: the case of Malawi [version 1; peer review: awaiting peer review]

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V1 First published: 14 Sep 2022, 4:31
<https://doi.org/10.35241/emeraldopenres.14805.1>

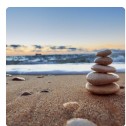
Latest published: 14 Sep 2022, 4:31
<https://doi.org/10.35241/emeraldopenres.14805.1>

Abstract

The current paper sought to assess health research institutions in transferring knowledge from health research findings into decision and policy making in Malawi. The study employed both a qualitative and a multi-case study approach. Data was gathered through interviews. The study's participants were purposefully chosen directors of research institutions, public universities, and the ministry of health. Few research institutions compile a list of organisations that might benefit from their health research findings, and even fewer libraries have databanks or repositories. Policymakers rarely receive actionable messages from research institutions. Researchers are short on communication skills as well as time to transfer research findings into usable formats. Research centres including libraries should provide an opportunity for interacting and enhancing the use of research evidence. Individuals, research groups, institutions must all develop stakeholder interaction structures. Structures should define incentives and advancement opportunities for those working in health research institutions.

Keywords

knowledge transfer; health research evidence; health research institutions; assessment; capacity building



This article is included in the [Healthier Lives gateway](#).

Open Peer Review

Approval Status *AWAITING PEER REVIEW*

Any reports and responses or comments on the article can be found at the end of the article.

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Author roles: Mapulanga P: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Resources, Supervision, Validation, Writing – Original Draft Preparation, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

Grant information: The Kamuzu University of Health Sciences provided most of the funding for the studies in the form of a PhD scholarship at the University of Cape Town. The researcher wishes to express gratitude to the University of Cape Town's Incoming International Student Award for providing additional funding for data collection, presentation, analysis, and discussion.
The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

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How to cite this article: Mapulanga P. **Assessing health research institutions' knowledge transfer strategies from a developing country perspective: the case of Malawi [version 1; peer review: awaiting peer review]** Emerald Open Research 2022, 4:31 <https://doi.org/10.35241/emeraldopenres.14805.1>

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Introduction

The use of health research for decision-making and policymaking is widening the gap between research and policymaking and has become a priority for research organisations (Jacobson *et al.*, 2004). Over the years, various frameworks have emerged to investigate the gap between the generation of health research and its application in decision and policymaking at the individual, group, organisational, and national levels (Estabrooks *et al.*, 2006). Few frameworks and tools for assessing the performance of health research institutions have been developed (Gholami *et al.*, 2011).

Building capacity to demand and use research evidence includes efforts to strengthen organisational and research institution capabilities (Potter & Brough, 2004). Capacity at the institutional level refers to approaches that have a long-term impact on organisations and include governance and incentives in addition to technical issues such as establishing repositories and databanks (Kislov *et al.*, 2014). To foster interaction among researchers, decision-makers, and stakeholders, institutionalised structures are required (Varallyay, 2017). Local infrastructures in hospitals and health institution libraries, such as databases and repositories, are also required to house existing health research evidence. It is also necessary to have mechanisms in place for synthesising and communicating research evidence.

The task is to identify and document strategies for improving institutional mechanisms and structures for incorporating health research evidence into policy and decision making. In addition, efforts are being made to develop frameworks for improving the capacity to use health research evidence. The effectiveness of the strategies, however, is contingent on the development of institutionalised capacity.

Conceptual framework

This study is based on the Self-Assessment Tool for Research Institutes tool developed by the Tehran University of Medical Sciences (Gholami *et al.*, 2011; Maleki *et al.*, 2014).

The question of health research. The research question in the Self-Assessment Tool for Research Institutes (SATORI) tool is concerned with resources and strategies, as well as connections with policymakers, decision-makers, and policy stakeholders (Gholami *et al.*, 2011). According to the tool, research institutions should have a list of organisations that can use the centre's research, as well as a research databank or repository where research is stored (Gholami *et al.*, 2011). They should have a website or databank where they can notify other organisations about their research priorities (Mohaghegh *et al.*, 2017). External funding for research is required (McLean *et al.*, 2018). In research institutions, internal strategies for holding regular meetings to identify research areas to be studied are required (Maleki *et al.*, 2014). Institutions of higher learning should assess research capacity and utilisation, as well as provide incentives for obtaining external funding (McLean *et al.*, 2018).

Knowledge to be produced. Take-home messages should be developed by research institutions based on some level of

research evidence (Gholami *et al.*, 2011). High-quality, dependable health research is required. Maintaining quality assurance and control is essential (Lea *et al.*, 2016). The time between the proposal's formulation and the completion of the research project should be reasonable. It is necessary to approve the duration of research projects (Gholami *et al.*, 2011). A dissemination strategy, as well as a budget, should be included in research projects (Wilson *et al.*, 2010).

Knowledge transfer in health: The tool assumes that research institutions should be familiar with knowledge translation activities (Gholami *et al.*, 2011). They should have good communication skills (Barwick *et al.*, 2014). Research institutions should make use of knowledge brokers (Barwick *et al.*, 2014; Dobbins *et al.*, 2004). Research institutions should have financial resources for preparing take-home messages for various policy stakeholders (Grimshaw *et al.*, 2012). They should have equipment for preparing content (Gholami *et al.*, 2011); appropriate infrastructure for strengthening knowledge transfer (Ellen *et al.*, 2014); frameworks for preparing actionable messages (Grimshaw *et al.*, 2012); knowledge on intellectual property rights (Bubela *et al.*, 2012); and develop evaluating skills on knowledge translation activities (Makkar *et al.*, 2016).

Promoting the use of health research evidence: Promoting the use of health research evidence can be effective with educational programmes (Gholami *et al.*, 2011); institutionalised priority for high-level research evidence use (Viergever *et al.*, 2010); involvement of research institutions in high-level technical committees in the decision and policy-making (Shroff *et al.*, 2015); and, appropriate reminders to enable research results generated and sent to potential users (Grimshaw *et al.*, 2012).

Methods

Ethical approval and consent to participate

The study participants provided written informed consent. The study participants were informed that the research study was part of a doctoral studies at the University of Cape Town (UCT) in South Africa. Ethics Clearance was therefore obtained from UCT under Reference Number UCTLIS2017 06-05 on 29 June 2017. The National Commission for Science and Technology in Malawi under Protocol P05/17/197 Ref No: NCST/RTT/2/6, and the Ministry of Health Malawi, Kamuzu University of Health Sciences (KUHeS) provided written ethical approvals for the study.

Approach

To collect and analyse data, the study took a qualitative approach, employing open-ended face-to-face self-assessment interview questions tool for research centres and institutions.

Design

The study employed a multi-case study design (Creswell, 2013). The design assisted the Principal Investigator (PI), a male doctoral student at the University of Cape Town, in understanding the concepts, opinions, or experiences of health

researchers regarding their research and how it influences decision and policymaking. The PI received training in qualitative and quantitative research methodologies at the University of Cape Town.

Sample recruitment strategy

Purposive sampling was used to identify study participants, and Malawian health research institutions were chosen. The PI approached heads of the institution as site gatekeepers to assist and identify potential participants who could ably and eloquently respond appropriate for the study after meeting the inclusion criteria and have the ability to complete an in-depth interview. The PI contacted the individual participants that were mentioned by the gate keepers for consent to complete an in-depth interview. As in [Table 1](#), the recruitment strategy entailed identifying directors of Malawian health research institutions and centres that were purposively sampled.

Inclusion criteria

Participants sought were active in health research transfer, implementation science, or knowledge translation initiatives. Participants were also expected to work at public or donor-funded institutions.

Exclusion criteria

Participants in administration, finance, and procurement were not eligible. Participants in private institutions were excluded.

Sample size

The study purposefully sampled 17 Directors from the Ministry of Health and various health research institutes in Malawi. The 17 were nominated by heads of the institutions as appropriate and potential participants who could ably and eloquently respond to the study needs. Only nine directors in health institutes and centres in Malawi granted the PI permission to conduct the interviews. Dignitas International, the National AIDS Commission, the National Commission for Science and Technology, and the Malawi Parliament, in addition to the KUHeS, agreed to participate in the research. The remaining nine directors refused to participate in the interviews and were therefore eliminated. More than half of the directors came from public health universities and institutes, with the rest coming from Malawi's donor partners in health research.

Data collection methods

Between November 2017 and January 2018, the male Principal Investigator, then a PhD candidate at the University of Cape Town, collected data through face-to-face individual interviews that lasted more than an hour each at the director's workplace. The updated and qualitative SATORI tool was used to create the interview schedule ([Gholami et al., 2011](#)). The first part of the tool asked for 'Yes' and 'No' response. The second part of the response requested for an explanation for every 'Yes' and 'No' response (see [Extended data, \(Mapulanga, 2022\)](#)). All respondents had master's or

Table 1. List of purposively selected Directors in various health and research institutions in Malawi.

No.	Organisation	Personnel	No.
1.	KUHeS (Blantyre campus)(Formerly College of Medicine)	Dean of Postgraduate Studies and Research	1
		Director of Centre for Reproductive Health	1
		Director of Wellcome Trust Research Centre	1
		Director Malaria Alert Centre	1
		Director of Research Support Centre	1
2.	KUHeS (Lilongwe campus)(Formerly Kamuzu College of Nursing)	Dean of Postgraduate Studies and Research	1
		Dean of Research	1
3.	Ministry of Health Headquarters	Director of Reproductive Health	1
		Director of Clinical Services	1
		Director of Preventive Health Services	1
4.	Baylor College of Medicine	Director	1
5.	National AIDS Commission	Director	1
6.	Dignitas International	Director	1
7.	Lighthouse Trust	Director	1
8.	Parliament	Research Directorate	1
9.	University of North Carolina Malawi Project	Director	1
10.	National Commission for Science and Technology	Director	1
	Total		17

doctorate degrees and had at least 5 years of experience as directors, deputy directors, deans or researchers. Two were female participants while 7 were male participants.

Except for those at public colleges, all of the participants were unknown to the researcher at the start of the study. There were no other parties present throughout the interviews except the PI and the interviewees. The PI collected data via voice recordings. There were field notes collected. Interviewees were not re-interviewed because the interviewees demonstrated a thorough understanding of the PI's questions. Saturation had been achieved by the end of the nine interviews.

Analytical strategy

The data were manually analysed using content analysis and NVivo version 11 (Hsieh & Shannon, 2005). The study adopted an interpretative, qualitative approach that seldom uses inter-rater reliability and two people, the PI and study supervisor coded the data. The content analysis focused on already identified themes (Patton, 2002) and patterns (Morse & Field, 1995) identified by the SATORI tool and was piloted and pretested with 8 health researchers at KUHeS.

Results

The SATORI tool focuses on four main areas: health research questions, knowledge generation, knowledge translation, and encouraging the use of health research findings to guide policy and practice. The article focuses on important topics of health research in Malawi.

The question of health research in Malawi

The research question addresses issues such as, "Do researchers and institutions detect decision makers' research demands and transform them into research questions?" Why? Why not? The paper reports on critical areas of health research in Malawi. Research institutions should keep a list of organisations that benefit from research on file. According to the current study's findings, partners working in health systems use the research that is generated.

Interviewees were asked whether their organisations had a list of organisations that benefit from their research. Four of the nine participating organisations claimed that they do not have a list of organisations that profit from their research, while five answered that they do. According to the explanation provided, partners working in health systems utilise the research produced. Here are a few excerpts from the interviews: "Ministry of Health, nursing schools, national and international health organisations use the generated research results" (Researcher # 1) "Partners involved in health system strengthening and policy formulation" (Researcher # 2) "We have a list of stakeholders who are involved in the definition of our research, its implementation, and dissemination of its findings" (Director of Research #1).

Databanks and research data repositories are extremely valuable resources. Some libraries house databanks and

repositories. The interviewees were asked whether their organisations had a list of organisations that might benefit from their study. Four of the nine participating organisations said they do not have a list of organisations that profit from their research, while five said they do. The study is used by partners working in health systems, according to the explanation given. Here are a few interview snippets:

"We have a structured method for keeping our database in both soft and hard copies" (Research Centre Manager # 2). "At the moment, the research centre does not have a repository, but it does have a library." (Research Director # 2) "Researchers rely on databanks and platforms developed by universities" (Research Center Manager # 1).

Only one institution said that it does not have regular meetings for the identification and sharing of research priorities, while the other eight stated that they do. Some of the regular meetings are organised by the Ministry of Health via technical working groups, with the research institutions serving as secretariat. Regular meetings to identify and exchange research priorities are an important tool for disseminating research information to users. Through its technical working groups, the Ministry of Health organises notable regular meetings. The following are some of the interviewees' quotes:

"Through policy dialogues held twice a year, "says Researcher # 3. "We have technical working groups as well as annual research dissemination conferences" (Research Centre Manager # 1).

Regardless of the scope of the research, research institutions should make sure that policymakers and decision-makers are aware of the work that is being done. When the directors of the research institutions and centres were asked whether policymakers are aware of the research being undertaken at their institutes and centres, all nine replied favourably. Some have speculated that they are operating arms of the Ministry of Health. The Malaria Alert Centre at KUHeS, for example, is an operational arm of the National Malaria Control Programme. Notable explanations also highlighted that, since the establishment of the National Health Research Agenda 2011–2016, many policymakers are aware of the research being conducted by health research organisations. The following were some of the snippets from the interviews:

"The National Commission for Science and Technology developed a research agenda, which is followed when developing research" (Research Director # 1). "The majority of the research we do is based on national priorities," says Research Director # 2. "We discussed the research strategy with a few partners, including decision-makers" (Researcher # 3).

To expand cooperation on knowledge sharing, research institutions should invite policymakers to institutional meetings. According to research institutions, policymakers are invited to workshops, community of practice activities, and policy dialogues. "Policymakers are invited to workshops to

discuss the findings of the research”(Researcher # 4). “Through policy dialogue and the formation of a community of practice”, (Research Center Manager # 1). “... the institution research in collaboration with public institutions, and because of this collaboration, knowledge sharing, and networking are enhanced” (Knowledge Translation Manager). This is done on the fly rather than in scheduled meetings” (Research Centre Manager # 1). The availability of up-to-date websites for increasing the visibility of research priorities is an example of research visibility efforts.

“Documents about the National Health Research Agenda are available for download online.” (Manager of the Research Center # 1) “As part of the website, which is currently being reviewed” (Director of Research). “We do have a website and a research directorate where we highlight all of the researchers’ work”. “We agreed that we would need documents in electronic form, which would be posted on the website”, (Research Center Manager # 1).

Policymakers’ meetings are supposed to determine research priorities. Some speculated that the research topics were chosen based on the national research agenda. When asked if research priorities are determined through meetings with policymakers, only two institutions stated that they do not, while seven stated that they do. Some speculated that the research topics were selected by the national research agenda. Academic research institutions often follow departmental or faculty research objectives. In terms of frequent updating of the research agenda and timely contact with policymakers, almost half (four) of these organisations said that they do not, while five stated that they do. Some mentioned the National Health Research Agenda, while others mentioned their institutional strategic plans, which are updated every five years. The following are some of the interview excerpts:

“The National Health Research Agenda is currently being revised” (Research Director # 4). “When we update our strategic plans, we update our research priorities at least every five years” (Research Director # 1). “This was made possible by the research strategy development process. Priorities for research have been communicated, but the process has yet to be sustained”, (Research Director # 2).

Updating the research agenda regularly and communicating with policymakers on time are critical steps in transferring research to policy or decision-makers. Four of the nine universities reported that their budgets require researchers to locate and apply for external financing, whereas five did not. Research centres at KUHeS are encouraged to mobilise resources both within and internationally. The Malaria Alert Centre, for example, said that they have journal clubs that encourage academics to submit for financial call-up notifications. Six research institutes responded that they do not provide incentives to researchers for obtaining external funding, whereas only three replied that they do. The former said that a little proportion of between 7–10% is used as

an incentive, while some of the latter stated that incentives are a decent alternative to investigate.

According to the information provided, few research institutions have budgets. The following are some of the excerpts from the interviewees:

“Mobilisation of internal and external resources is one of the requirements for university research staff” (Research Director # 1). “...one of the journal clubs’ goals is to mentor young researchers who are applying for grant opportunities.” (Research Director #2). “We have a unit that displays funding opportunities that are communicated to researchers” (Research Center Manager # 1).

External funding from research institutions should be rewarded for researchers. Some people believe that incentives are a viable option that should be researched further. “On projects, a 7–10% administration fee is charged, and a portion of that is used to motivate staff” (Research Director # 1). “When someone is successful, they are recognised, but there are no explicit incentives” (Research Director # 2). “We haven’t looked into that option yet” (Research Center Manager # 1).

Knowledge production in Malawi

The question of knowledge production: Do researchers and institutions provide meaningful evidence for decision making? Why? Why not? Four institutions said that their research investigations do not provide actionable messages with the level of research proof, while five stated that they do. The Malaria Alert Centre conducts systematic evaluations that are shared with policymakers. The Ministry of Health’s Knowledge Translation Platform claims to have produced several policy papers to assist the application of health research findings. Other replies, such as those from the National Commission for Science and Technology and the National AIDS Commission, argued that producing actionable messages was not within their purview.

Only two institutions replied negatively to involvement in research co-production or co-design, while the majority of seven stated they do. Those that do, such as the Malaria Alert Centre, claim that research organisations were founded specifically for that reason. It was stated by the Ministry of Health that before any research is done, the Directorate under which it falls must first authorise it. Several foreign colleges and universities have reportedly assisted KUHeS faculty members in working in teams and co-producing and co-designing research.

Concerning the degree of trust that policymakers have in the quality of research conducted at research centres, two said that they were unsure if policymakers trusted their research or not, while six stated that they did. The Malaria Alert Centre, for example, reported that research highlighting the use of Artemisinin-based combination therapy and quick diagnostic tests for malaria treatment was conducted at the Centre. According to Dignitas International and the National

AIDS Commission, their findings are often mentioned in policies, initiatives, and other critical government papers.

Concerning quality assurance and whether it is required at research centres, specifically with regard to data collection methods and research training, two institutions responded that it is not required, while the majority of seven stated that it is. According to one of the KUHeS Directors, the organisation has quality assurance officials and internal working groups that authorise the conduct of any study after a comprehensive evaluation. According to the Malaria Alert Centre, the majority of the research is laboratory-based, and quality assurance is essential.

Three research institutes responded that they do not do quality control in terms of internal monitoring and external supervision by a different research group, while six answered that they do. In the case of the KUHeS, they are reviewed by the Research and Ethics Committee. Other institutions seek ethical approval through the National Health Research Committee, which is part of the National Commission for Science and Technology.

In terms of whether the period from the study proposal presentation stage to the start of the research is appropriate, two respondents said it is not, while seven said it is. According to the Research Support Centre at KUHeS, this is exactly their duty. According to one of the KUHeS directors, this is difficult to determine since most of the research is within the intellectual property realm. The remaining institutions responded that it is not their mission or that it does not apply to them since they do not do research.

Three research institute directors replied negatively to the question of a suitable gap between the completion of the investigation and the finalisation of the findings in report form, while six stated that they carefully adhere to schedules. They did admit, however, that despite agreed-upon work schedules, researchers occasionally delayed needlessly. On deadlines, the Research Support Centre collaborates with researchers. The directors of KUHeS agreed that the majority of their research adheres to academic deadlines.

Apart from publishing in peer-reviewed journals, only two universities replied negatively to money offered for other kinds of research dissemination (workshops, conferences, etc.), with the majority of seven indicating that grants for workshops and seminars are supplied. KUHeS acknowledged that they hold research dissemination conferences every year or financially support staff to present at local and international research dissemination workshops and seminars. Grants are made available for such efforts at the Malaria Alert Centre for each research study undertaken.

Knowledge translation in Malawi

Knowledge translation answers problems such as, “Do we have enough mechanisms for conveying the organization’s research findings to its target audiences?” Why? So why not? Three of the directors claimed that they do not have systems in place for transmitting research results to funders and

determining which findings should be conveyed to policymakers, while six stated that they do. Policy briefs are distributed to policymakers, according to the Knowledge Translation Platform. According to the National AIDS Commission, research papers are sent to policymakers. KUHeS relies on yearly research dissemination conferences, and the majority of the research is academic, concluding with student evaluation and grades. According to Dignitas International, they isolate advice and activities for certain target groups.

Four of the nine organisations said they peer-review all research papers before distributing them to policymakers, while the other four said they do not. Explanations varied from chosen peer reviewing, internal peer reviewing but no external reviewers, to just important ones that are peer-reviewed. When asked whether the institution’s researchers are acquainted with knowledge translation challenges, the majority of six responded they are not, while just three said they are. The latter emphasised the need for knowledge translation. Other replies indicated that knowledge translation is not used in Malawi and that it is a novel idea.

Only three directors said their researchers do not have a role in translating research results into practical recommendations for policymakers, while six said they do. One of the directors at the Ministry of Health said that they had used the Knowledge Translation Platform on multiple occasions to create capacity for knowledge translation. According to the Knowledge Translation Platform, they convert research into policy briefs. Concerning research communication abilities, five universities reported that researchers do not have enough communication skills, while four answered that they do. KUHeS does not translate research findings into practical messaging. According to research centres, some training in this field is required. Only two research centres claimed that they utilise personnel with information transfer abilities, such as knowledge brokers, while six stated that they do not. Among the explanations were: Malawi lacks knowledge brokers (Dignitas International); knowledge translation is a new phenomenon (the Malawi Parliament); it does not apply to them (the National Commission for Science and Technology), and they do not use them as a research centre (KUHeS).

When asked whether researchers have the necessary resources for creating study material for distribution to the appropriate target audience, two respondents said no, while seven said yes. According to the KUHeS, such activities are not funded. According to the Malaria Alert Centre, they have the necessary equipment and abilities. Dignitas International said that they rely on other organisations for this reason. According to the National Commission for Science and Technology, they only have resources for research dissemination. In terms of whether researchers have enough time to prepare information for distribution to relevant target audiences, four said no, while five said yes. Explanations included the fact that time is restricted at KUHeS since researchers also teach, and that researchers are active in activities other than research. According to the National Commission for Science and Technology, they spend time to

research dissemination. In terms of incentives for completing knowledge translation operations, just two respondents said they are available, while six said they are not. Promotion at KUHeS is linked to several papers, patents, and so on. The National Commission for Science and Technology, as well as the Malawi Parliament, have both said that knowledge translation is not part of their mandate.

In response to the question of whether knowledge translation and utilisation of research findings are part of research institution training programmes, four institutions stated that their researchers receive no training, while five stated that they have organised training for researchers, including research methodology training. Only KUHeS was adamant about this, whereas the remainder could not say when the training was last given. When asked whether the research centres in Malawi were aware of the national research agenda, just two institutions replied that they were not, while the majority of seven indicated that they were. Many of these research institutions said that they base their research goals on the national research agenda. In terms of whether the structure of peer-reviewed papers in their research institutions readily informs policymakers, four said yes, while the other five said no. On the issue of the time lag between manuscript submission and publication in journals, six respondents stated that they ensure that the time lag is adequate to ensure that the interventions resulting from the research are implementable, while three could not say whether the time lag is adequate or not. Notable replies to this subject included the fact that journal publishers often take their time in publishing the findings.

Four institutions answered that they have frequent connections with the media for the sharing of health research findings, while five said that they do not. According to Dignitas International, the Malaria Alert Centre, and the National AIDS Commission, they work with the media. When the National Commission for Science and Technology has research to distribute, they contact the media. Concerning the use of intellectual property (IP) rights to assist researchers in disseminating health research results before publication, the majority of seven respondents said they do not utilise IP rights for this purpose, while only two said they do. Explanations included the fact that intellectual property rights are seldom used in Malawi. Although KUHeS has established intellectual property rights policy, its use has yet to be determined.

Only one research institution director thought that policymakers do not appreciate the value of local research from research centres in Malawi, while the majority of seven responded that health officials do. According to the Malaria Alert Centre, policymakers request cooperative research initiatives, and it serves as the secretariat of the technical working group at the Ministry of Health. The National Commission for Science and Technology and the National AIDS Commission both provided similar answers. KUHeS felt unsure about this matter.

Research institutions are expected to investigate how much research from their centres is used by policymakers. Seven

of the directors in this survey said that they do not, while two stated that they do so primarily via publications and citations. Six research institution directors said they do not perceive possible hurdles to the adoption of their research results by policy and decision-makers, while just three said they do. One such study was carried out by the Knowledge Translation Platform with funding from the Ministry of Health and the African Institutes for Development Policy (AFIDEP).

Seven of the nine institutions said that they do not have criteria for evaluating the knowledge transfer activities of their researchers. Only two people said they have such requirements. The Knowledge Translation Platform was the only organisation that created evaluation standards for its research results.

The production of actionable messages with the level of research evidence is required as a means of transferring research from researchers to policymakers. Some claimed to have conducted systematic reviews, while others claimed to have written policy briefs in support of the use of health research evidence. The following are some of the excerpts from the interviewees:

“Depending on the research topic, each research report includes recommendations with actionable messages for various stakeholders”, (Research Director #1). “We do synthesise our research in a way that policymakers can understand. We’ve developed policy briefs. We have collaborated with policymakers on occasion to disseminate research findings” (Knowledge Translation Manager).

Participation in the research design is viewed as a first step toward involving research participants in the research itself. According to some institutions, research groups co-produce and co-design research. The following were some of the excerpts from the interviewees:

“Research teams in various disciplines were formed”, (Research Director # 2). “On behalf of other relevant institutions and departments, we serve as a service hub. ... the institution is supportive of this process”, (Research Center Manager # 1). “Several universities outside of the university have assisted faculty and students working in teams to co-produce and co-design research”, (Research Director # 2).

Promoting the use of health research evidence in Malawi

Promoting the use of evidence answers problems such as, “Do researchers or institutions assist decision-makers better using research results?” Why and why not? Five of the nine research institutes answered that they do not undertake teaching programmes regarding evidence-based policy and decision-making for health policy and decision-makers, whereas four indicated that they do. According to the Ministry of Health, 36 members of the Ministry and Parliament have been trained. They have also similarly trained middle-level district health administrators. Those who answered ‘no’ thought that this directive was outside of their purview.

In terms of research centres undertaking systematic reviews to promote evidence-based policy and decision-making, five of the directors said no, while four said yes. The Malaria Alert Centre stated that they have so far conducted three systematic reviews in the following areas: malaria prevention in non-HIV pregnant women published in Cochrane databases; the impact of facility delivery versus home delivery published in BMC Health; and responses of caregivers to children with fever and how mothers respond published in Joanna Briggs. Aside from the Malaria Alert Centre, the other centres and institutions noted a lack of training in conducting systematic reviews.

In terms of researchers from the research institutes serving on technical committees of the Ministry of Health to aid in policy or decision-making in Malawi, just one of the centres has never served in such a capacity, while the rest have all served. According to the Malaria Alert Centre, it serves as the secretariat for one of the Ministry of Health's working groups. KUHeS faculty members are assigned to several national committees. In answer to the question of whether research institutions send reminders to politicians to follow research results from their studies on current topics, the majority of seven research institutions said no (although agreed that this is a good idea), while two said yes.

Policymakers' trust in the quality of research conducted in research institutions is critical for policymakers or decision-makers to trust their research. Some research institutions claim that their findings are frequently cited in policies, strategies, and other important government documents. The following were some of the excerpts from the interviewees:

"It is frequently cited in policies, strategies, and other key documents" (Research Director # 2). "Typically, the findings are incorporated into policy" (Researcher # 3). "There has been no research to evaluate this", (Documentation Manager).

In research institutions, quality assurance is required, particularly for data collection protocols and research training. Few research institutions have quality assurance officers and internal working groups that approve the conduct of any research after a thorough review. "There is a quality assurance officer at the university", (Research Centre Manager # 2). "The internal working groups review the studies and approve the research after a thorough review." (Research Director # 3). "All of our studies are registered and monitored by accredited study monitors to improve quality and ensure standards are met." (Research Director # 2).

"Quality assurance structures and policies are in place at the institutions" (Research Centre Manager # 2). "Requirements for quality assurance are built into the ethical clearance obtained for research" (Researcher # 4). "All of our studies are registered and monitored by accredited study monitors to improve quality and ensure that they are carried out per standards", (Research Director # 1).

Quality control necessitates both internal and external monitoring by a separate research group. Some research

institutions have been delegated institutional research and ethics committee reviews by the National Commission for Science and Technology. The Research and Ethics Committee reviews all protocols for scientific and ethical compliance" (Research Director # 2). The National Health Research in the Social Sciences oversees ongoing research" (Documentation Manager # 1). "Technical working groups and task force meetings are commonly used", (Research Director # 2). "It is something we must consider as we move forward with the research strategy implementation" (Researcher # 3).

A reasonable time frame from the presentation of the research proposal to the start of the research is required for knowledge transfer. It is difficult to determine, according to some research support centres. "It can be lengthy at times, but not up to 6 months; the longest delay would be around three months" (Research Centre Manager # 2). "It takes a long time, not 6 months, and if something happens so quickly, I wonder if it was done thoroughly", (Research Director # 1).

Given the timelines, there should be a reasonable gap between the study's conclusion and the finalisation of the results in report form. "We have found that many researchers request no-cost extensions", (Research Center Manager # 1). "It is difficult to determine because most of our research is for academic purposes and we do not report results in report forms", (Research Director # 2). Despite agreed-upon work plans, research institutions admit to unnecessarily delaying tasks.

"This is a problem for most researchers; they sometimes procrastinate" (Research Center Manager # 1). "It is one of the principles that we instil in researchers to respect deadlines to ensure that everything runs smoothly and on time", (Research Director # 2). "Researchers are skilled at proposal writing and project management", (Research Centre Manager # 1).

Funding for research dissemination in the form of workshops and conferences is critical for knowledge transfer. Some research institutions hold research dissemination conferences or provide grants to staff to present at local and international research dissemination workshops and seminars.

"Each research project includes a budget for dissemination activities such as workshops" (Research Center Manager # 1). "The majority of employees are encouraged to present research findings at conferences" (Researcher # 4). "To advise and support research in the country, our institution conducts research dissemination of research findings for our stakeholders" (Researcher # 2).

Limitations

The present research focused on governmental institutions and donor-funded healthcare enterprises. Many non-governmental organisations conduct health research in Malawi, yet they were not contacted, therefore this is a study constraint.

Discussion

Evidence is vital in health policymaking and using evidence may assist prevent avoidable damage while still achieving key health policy objectives (Parkhurst, 2017). Global recognition has been given to the imperative that policy choices be based on reliable evidence (Schryer-Roy, 2005). Research evidence long opined that policymakers and researchers lack the skills, resources, and procedures needed to locate and utilise health evidence to influence policymaking (Lavis *et al.*, 2009). Bartunek *et al.* (2003), had long suggested that the distance between researchers and policymakers was expanding, in part because research has historically been the realm of academics, many of whom lack expertise on how to involve policymakers in their activities. The gap has expanded owing to various causes, including a lack of incentives and time required to develop partnerships, rigid funding timeframes that prevent interaction with policymakers, and the complexity of tasks connected with joint research.

The role of universities, research centres, and institutes is to facilitate interaction among faculty, scholars, students, and other stakeholders such as industry and policymakers in order to improve research opportunities, academic excellence, real-world problem solving, and knowledge creation and dissemination (Kumar, 2017). While health researchers are expected to take the lead in the health research process, which includes selecting a topic for the study, reviewing related literature, developing a theoretical or conceptual framework to guide the study, clarifying research questions, selecting a research design, data collection, analysis, and conclusion, current trends indicate that researchers must do more.

According to Parkhurst (2017), political sources of evidence must be evaluated alongside excellent sources of evidence from a policy standpoint, as well as the validity of the evidence in the process of utilisation. The responsibilities begin with health researchers doing certain key functions such as establishing study designs, defining research goals, and analysing and interpreting research outcomes. Thereafter, this should be converted into an institutional role in developing institutions engaged in evidence use, such as resources and arrangements of evidence advisory systems at the ministry level (Parkhurst, 2017).

Institutions should also help to embed rules by providing incentives and best practises for institutions to use evidence (Parkhurst, 2017). Parkhurst contends that, at the institutional level, government organisations should play a role through research institutions and advisory bodies, supported organisations such as think tanks, consultants, and sponsored academics, and independent organisations such as non-governmental organisations, international donors, and independent academicians.

The evidence produced by research institutes and centres has a significant impact on strategic decision-making and policymaking. However, the literature suggests that research institutions are driven by objectivity, logic, integrity, independence, neutrality, long time horizons, and a narrow

focus (Leuz, 2018). Similarly, academics are driven by intra-academic incentives for career development and job promotion drive research institutions, and there is a lack of stakeholder engagement (Leuz, 2018). On the other hand, ideology, subjectivity, and the desire to maintain or gain power as re-elected members of society motivate decision-makers and policymakers (Leuz, 2018). The policy constraint is that decision-makers and policymakers frequently use research to back up decisions they have already made. This suggests that research that supports the decision-maker's views is more likely to be taken, whereas research that contradicts policy beliefs is more likely to be ignored.

In the current paper, it was difficult to ascertain the roles individuals play *vis-a-vis* institutions in knowledge transfer of health research findings into decision and policymaking. As such frameworks for research engagement are needed, one focused on person-level capacity and the other on institutional-level capacity (Varallyay, 2017). Key capacity domains and enabling variables should be given for each of these streams. These two streams are thought to be linked and mutually reinforcing. At the individual levels are two levels: level one is on enabling conditions needed to facilitate individual level competencies for the research engagement.

As in Figure 1, individually, five core competencies related to research use for decision-making have been identified and include: articulating research needs and generating the necessary research; accessing needed research promptly; appraising the relevance and quality of available evidence through systematic and transparent processes; and, adapting, synthesising, and preselection (Redman *et al.*, 2015).

The current paper could also not ascertain enabling environment created to transfer knowledge from health research to decision-makers or policymakers. However, several important suggestions have been articulated on fundamental abilities (Varallyay, 2017), see Figure 2. First, researchers should possess technical skills relevant to each of the key competencies, as well as an understanding of the procedures and institutions that allow them to interact with research findings. Second, researchers must be motivated to seek out research findings to influence program or policy decisions—this necessitates that they either value the inherent usefulness of evidence in decision-making or that external processes encourage its usage. Third, researchers must be orientated to utilise the institutional tools and processes available to promote research uptake. Finally, individual researchers who are expected to use research in decision-making must be entrenched inside structures and connected to resource persons who facilitate research engagement at the institutional level. Under such circumstances, it is anticipated that civil employees in a health system would be able to engage with and use research evidence in decision-making processes.

While individuals' matter, the paper could not ascertain if systems are in place to enable the transfer of research knowledge from research into decision or policymaking.

Enabling conditions

Five enabling conditions are needed to facilitate individual level competencies for research engagement

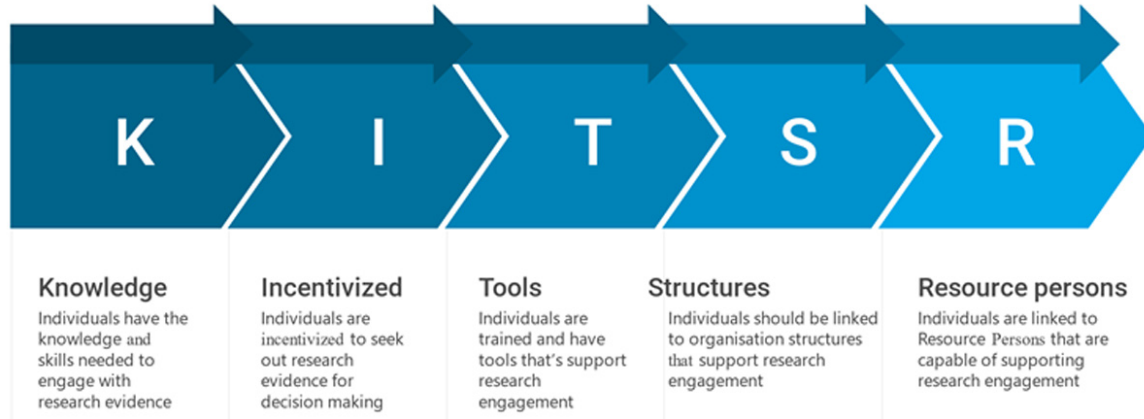


Figure 1. Individual level enabling conditions. (This figure is an original figure produced by the author for this article).

Functional capacity for Research Engagement

The functional capacity for research engagement assumes that individual have competencies for research engagement

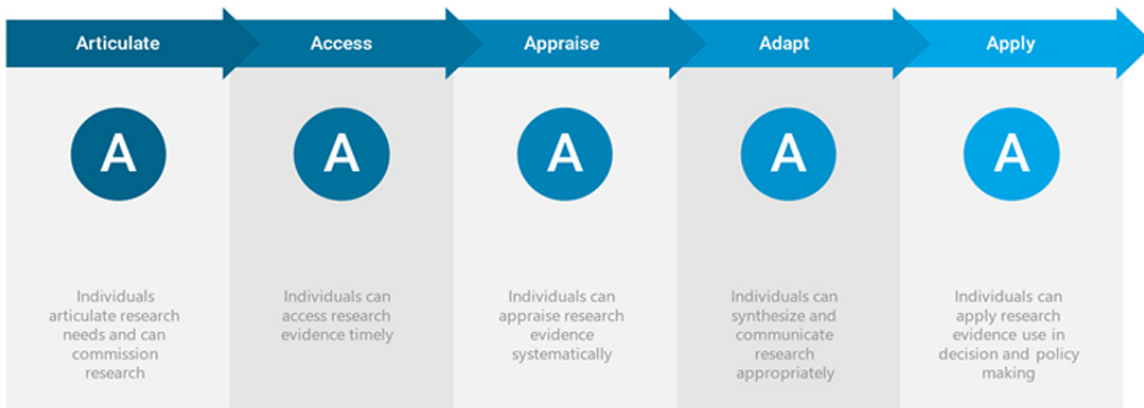


Figure 2. Individual-level functional capacity for research engagement. (This figure is an original figure produced by the author for this article).

However, five important systems, structures, and processes that encourage research engagement at the institutional level have been identified (Varallyay, 2017), see Figure 3. First are platforms that facilitate interaction among researchers, decision-makers, and other important stakeholders at different phases of the decision-making process. Second, are locally available, appropriate, and easily accessible infrastructure to house existing evidence such as online research evidence databases or repositories. Third, are methods for synthesising and disseminating research findings for ensuring routine and frequent knowledge exchange with decision-makers. Fourth are customised instruments that

enable research engagement functions and may provide advice and a standardised framework for individuals to execute the core research engagement tasks. Finally, institutionalised methods for developing research use capabilities help to ensure the long-term viability of initiatives to increase research use capacity in health policy/program decision-making.

While some elements of enabling conditions could be ascertained from the interviews, the overall picture suggested that it was inadequate and not corroborated by the interviewees. For example, as in Figure 4, key enabling conditions at the institutional level include sufficient financial and human

Institutionalised conditions

The research institute or institution should have Institutionalised conditions for handling research evidence.



Figure 3. Institutionalised level enabling conditions. (This figure is an original figure produced by the author for this article).

Institutionalised research engagement

Institutionalised research systems, structures and processes are in place to support research engagement

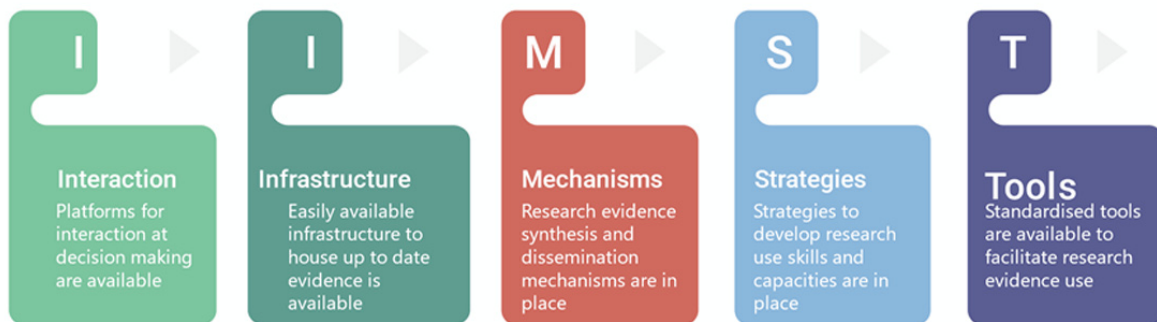


Figure 4. Institutionalised level functional capacity for research engagement. (This figure is an original figure produced by the author for this article).

resources to support evidence-use strategies; supportive leadership that not only promotes but also models, the use of evidence in decision-making; and governance structures such as policies, staff performance and appraisal requirements that are favourable to the use of evidence in decision-making (Varallyay, 2017).

Conclusion

Researchers cannot be effective at knowledge transfer unless they understand how research institutions operate. Institutions

of higher learning require adequate financial and human resources. They also need supportive leadership that can promote the use of health research evidence in decision-making and policymaking. Research institutions, on the other hand, require models or frameworks for incorporating research evidence into decisions and policymaking. Governance structures for the use of health research evidence, according to the papers, are largely absent. Legislation, regulatory frameworks, and fostering systems are examples of how to ensure not only the use of research evidence in decisions

and policymaking but also accountability and reporting mechanisms. The paper also suggests that institutionalised mechanisms for research institutions are needed to incentivise the use of research evidence in decision-making and policymaking. These include research centre policies and employee performance appraisal systems that encourage decision-making based on research evidence.

Data availability

Underlying data

The data that support the findings of this study are not publicly available due to confidentiality clauses and are

available from the corresponding author upon reasonable request (pmapulanga@kuhes.ac.mw).

Extended data

Extended datasets available in a Figshare. DOI: <https://doi.org/10.6084/m9.figshare.20625942> (Mapulanga, 2022).

This project contains the following extended data:

- Self-assessment tool for research centres and institutions.docx

Data are available under the terms of the [Creative Commons Attribution 4.0 International license \(CC-BY 4.0\)](#).

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