

Moving Beyond Research to Inform Policy:

Barriers and Strategies
in Developing Countries



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Summary

This paper examines issues of communication across the researcher-policymaker interface in four countries: Malawi, Tanzania, India and Pakistan.

In-depth interviews were conducted with researchers working in health issues, and policymakers responsible for the formation of health policies at the local and national levels. The range of strategies used by researchers to disseminate research outputs to policymakers was similar across all study countries: most researchers disseminated their findings through research reports and workshops, and there was a heavy reliance on dissemination through academic circles.

Policymakers reported difficulties in accessing research outputs, particularly when disseminated through academic channels. The interviews identified a number of barriers to effective communication between researchers and policymakers. The lack of clear communication channels between researchers and policymakers and the lack of a central depository for research outputs restricts the dissemination of research outputs.

Researchers felt that policymaker's lack of understanding and respect for research limited the extent to which research is used in policy formation, whilst their own lack of skills and resources for dissemination restricts the effectiveness of their dissemination efforts.

Policymakers felt that the research outputs they receive often lack policy recommendations, were of poor quality and were presented in academic formats.

The results of this study highlight a communication gap between researchers and policymakers. Whilst reducing this gap requires long-term attitudinal change and an increase in investment in the research sector in these countries, other barriers are more easily surmountable.

Training in communication skills is necessary to allow researchers to target their research towards a policy audience, whilst policymakers need to take steps to inform researchers of their information needs.

A greater understanding of the potential contribution of research to policy and the constraints of policy formation could arise from closer collaboration between researchers and policymakers.

Introduction

Research is generally understood to be a systematic process for generating new knowledge, and can act as a powerful tool for providing information for policy formation (Walt 1994).

The continuing trend towards evidence-based policy formation has increased the demand for research outputs that can provide clear, concise policy-relevant findings (WHO 2000: ECDPM 2000). A prerequisite for evidence-based policy formation is the timely provision of scientifically solid and up-to-date information to policymakers (WHO 2000: Bark 1979). Indeed, it has been suggested that the success of a country's development efforts now depend upon the degree to which its planners and program managers use and apply research for decision-making (Torres 1981). Demographic research continues to produce a large body of scientific findings that can address critical issues faced by policymakers, and informed policymaking can benefit from understanding the policy implications of such research (RAND 1997). The extent to which such research is translated into policy action, however, is dependent on the success of communicating research outputs between researchers and policymakers.

The effective dissemination of research results to policymakers is an essential element of any research programme, not only as a means of translating research results into policy action, but also to provide 'pay-back' for the investment in health research (Askew 2002).

The growth of large donor-funded operations research programmes focussed towards developing countries has increased the need to provide evidence of policy impact, which in turn has placed greater importance on ensuring that research outputs are communicated effectively to policymakers.

Effective communication between researchers and policymakers, however, provides a continual challenge. Previous research has identified the existence of a gap between the amount of research that is produced and the amount that is implemented through policy changes, resulting in the current under-utilisation of health research (Walt 1994b: RAND 1997).

This paper examines issues of communication across the researcher-policymaker interface in four countries: Malawi, Tanzania, India and Pakistan. Although previous research has identified the existence of a communication gap between researchers and policymakers (Walt 1994:1994b), little is known of the factors creating this divide. This paper explores current modes of research dissemination between researchers and policymakers, and examines the barriers to effective communication between the two parties. An understanding of the difficulties faced by researchers and policymakers in disseminating and receiving research outputs has the potential to increase our knowledge of the communication process, and to highlight strategies for the effective dissemination of research outputs.

The Process of Knowledge Transfer

The study of the researcher-policymaker nexus can provide valuable lessons for increasing the effective dissemination of research outputs (Walt 1994). In order to understand the barriers faced in communication between researchers and policymakers, it is necessary to understand the process through which such communication occurs. Weiss (1977) suggests that there are two alternative models to describe communication between researchers and policy-makers. The first model, the ideal model of the natural sciences, describes research as a linear series of events, which cumulates in the dissemination of research outputs. The model postulates that the research process is a logical one which follows a particular sequence in which researchers are assumed to ask the right questions, plan and conduct research rigorously, and then disseminate the findings (Walt 1994:Weiss 1977).

In this model communication between researchers and policymakers provides the end-stage in the research process, with research outputs passed directly to the policymakers. The alternative approach, the enlightenment model, argues that the links between research and policy are less direct, and that no single piece of research is likely to influence policy change directly (Weiss 1977). Rather, it is suggested that research influences policy through providing a cumulative weight of information, which leads to a gradual change in the thinking of policymakers. Research outputs permeate gradually into the policy process through a number of information channels, providing a backdrop of information that influence policy (Walt 1994). Smith (1993) argues that this model provides a more realistic view of the researcher-policymaker interface, noting that the exchange of information between researchers and policymakers is a dynamic process involving a range of channels and actors.

The uptake of research outputs can be either deliberate or diffusive (Walt 1994). Deliberate dissemination occurs when policymakers actively seek new information from researchers in order to answer specific policy questions. In contrast, diffusive dissemination occurs when policymakers learn of research findings through a range of research outputs, and knowledge is gradually diffused to policymakers, as in the enlightenment model of communication. Porter and Prysor-Jones (1997) argue that deliberate dissemination is most likely to result in policy change as the stimulus to seek information arises directly from the need to provide information for a specific policy problem. Weiss (1991) notes that there are three forms of research dissemination: research as data and findings, research as ideas and criticism, and research as briefs and arguments for action. The extent to which research influences policy varies between the three types of research outputs. In the first, research as data and findings, research is communicated to policymakers in the form of statistics and academic reports. Weiss (1991) argues that policymakers will only use this form of output if

Methodology

specific problems exist which can be answered by the statistics or if they highlight an immediate and acute problem. The second, research as ideas and criticism, involves the gradual flow of information between researchers and policymakers, as described in the enlightenment model. Issues arising from the research gradually permeate the policy process through a variety of channels, and it is difficult to identify the specific piece of research that leads to policy change. Finally, research as briefs and arguments for action involves researchers adopting the role of advocates. Such research often provides the policymaker with a set of alternatives to a current situation, and is therefore most commonly utilised by policymakers.

This research was conducted in four countries: Malawi, Tanzania, Pakistan and India, to facilitate cross-national comparisons of the issues under investigation. Data were collected via in-depth interviews with health researchers and policymakers responsible for developing health policy. Independent researchers and those affiliated with research institutions were identified, and the principle researcher in health issues was invited to participate in an interview. Policymakers were identified as those having a direct responsibility for the formation of health policy at the provincial or national level in each country. A total of 48 in-depth interviews were completed.

Data were collected using a semi-structured discussion guide. Respondents were asked about their current practice of research dissemination and uptake; their opinions on the effectiveness of current dissemination strategies, barriers to the dissemination of research; and suggested strategies for improved dissemination. The use of semi-structured in-depth interviews allowed the collection of reliable comparable data from respondents, whilst still allowing them to express beliefs and opinions in their own terms (Bernard, 1994; Patton, 1990). All interviews were tape-recorded and later transcribed. Textual data analysis was conducted using thematic analysis and comparison between countries to identify national patterns.

Current Methods of Dissemination and Uptake of Research Results

The range of strategies used by researchers to disseminate research outputs to policymakers is similar across all study countries. Differences in the dissemination process, however, exist between commissioned (by a donor or a government agency) and non-commissioned research. For commissioned research there is a direct channel of communication between the researcher and the commissioning agency, facilitating the dissemination of the final research outputs. A commissioning

Researcher's Barriers to Dissemination of Research Outputs

agency is typically involved in various stages of the research process and has a vested interest in the research outputs that usually take the form of a research report. Additionally, commissioned research is often disseminated via donor-funded workshops, conducted with a range of in-country stakeholders, or the donor agency initiates the distribution of the research outputs to a wider audience. The research outputs most frequently used by policymakers were those from internally commissioned research.

For non-commissioned research the channels of dissemination to policymakers are less clear and more varied. Many researchers limited dissemination to academic channels (e.g. papers in peer-reviewed journals or presentations at research conferences). The direct dissemination of non-commissioned research to policymakers most commonly involved either the distribution of a research report to a range of policymakers or inviting key policymakers and other stakeholders to a dissemination workshop.

Policymakers reported seeking research findings only when they had specific information needs. If the information is not available internally or through commissioned research outputs, policymakers consulted a range of sources including other ministries and government departments and documents from international research organisations. To a lesser extent, policymakers contacted university departments and national research organisations, however, this channel was only used if there was an established link with the organisation. In many cases consultants were employed to locate relevant published material or to conduct a research study.

Both researchers and policymakers reported that there exists no structured mechanisms through which dissemination can take place effectively, this is highlighted by the disparate strategies of dissemination used by researchers and the sources of uptake of research used by policymakers. However, for commissioned research, there is a direct channel of communication between researchers and policymakers.

Policymaker's Perceptions of Research

Researchers reported that the policy environment in the study countries is not focussed towards the incorporation of research in policy formation and program development. This lack of a strong evidence-based culture in policy development was felt to be a significant barrier to the dissemination of research to policymakers. Researchers perceived that research is given low priority by policymakers and that research findings are not valued in policy formation. As a result academic research is often seen to have little contribution to the policy development process, and policymakers

are seen as not fully appreciating the potential contribution of research in enhancing policy formation. In addition, researchers felt that research is perceived as an unnecessary expenditure for policy development in resource poor countries. For example;

The culture of using research results for policy does not exist in Tanzania (researcher, Tanzania).

There is a general feeling among policymakers that as far as policymaking goes they are the experts. If you want to bring in researchers they are just there to punch in numbers (researcher, Pakistan).

Policymakers don't see the role that research plays in everyday situations. Senior government officials don't appreciate the role of research in programmes (researcher, Malawi).

The ministers make the policies themselves, without using what we send them, they don't realise that research could help them (researcher, India)

Researchers also suggested that policymakers might not fully understand how to use research to support policy formation. They noted that policymakers might not have the ability to evaluate the quality of a research study or to interpret research findings, thus experiencing difficulties in translating research findings into policy action. This may lead to the failure to incorporate research into policy or to extraneous conclusions drawn from research results.

They do not understand the research process, so they do not differentiate between good and bad research...many of them don't even understand the difference between qualitative and quantitative research (researcher, Pakistan)

Policymakers may not understand research. They feel that it may take years to get an outcome, they are interested in outputs for today. There might be a lack of vision on the part of the policymaker (researcher, Tanzania)

Emphasis on Statistics

Researchers reported that policymakers place a strong emphasis on the use of statistics from research outputs. While researchers recognised the importance of measurement indicators, and the increasing pressure on policymakers to justify programmes or quantify changes, they felt that the focus on statistics under-utilised research results. Researchers felt that substantive issues arising from the research could also impact on policy. Policymakers themselves acknowledged their focus on statistical information from research outputs.

They are interested in a few indicators, for example, what is the CPR? Which they have to report to their highers, but other areas that are really important such as quality and side effects are not given as much attention (researcher, Pakistan).

Basically it's statistical information we require from the researcher

because they have it readily available and can provide it promptly (policymaker, Pakistan).

Lack of Dissemination Skills and Access to Policymakers

Many researchers identified their own lack skills in dissemination of research to policy audiences as a key barrier to the successful dissemination of their research outputs. Researchers highlighted their lack of training in communication of research findings outside academic circles. They were also uncertain about whom to disseminate research findings to, and expressed difficulties in identifying and accessing policymakers. Although some researchers were able to identify policymakers, they reported that the frequent changes in government portfolios meant that developing and maintaining links with policymakers was problematic.

Lack of Resources

Another fundamental barrier is the lack of resources for dissemination activities, particularly in Malawi and Tanzania, where researchers reported that often there are no funds available to consider dissemination activities beyond the distribution of a research report. Whilst resource issues were less apparent for donor-funded research, for Government sponsored or independent research, resource constraints often curbed dissemination activities. The lack of resources also restricted the professional presentation of information for policy audiences (e.g. brochures or fact-sheets).

How dissemination works will depend on the amount of resources, resources for dissemination are limited, so you can't disseminate in the way you would like to due to shortages, we don't have PowerPoint packages also to present findings nicely (researcher, Malawi).

Donor Influences

Much health research in the study countries, particularly in Malawi and Tanzania, is initiated and funded by international agencies. The prominence of donor-driven research raised a number of issues related to dissemination. First, researchers highlighted the common disparity between the health issues investigated by international donor agencies and the priority areas of national policymakers, hence policymakers often disregard research outputs that are not focussed on national areas of priority, for example;

Most research is donor-driven, this may not be of interest to the Ministry. Research, which is policy oriented, is usually donor-driven, so seen as not relevant (researcher, Tanzania)

Researchers are sometimes forced to conduct research on which we have no interest, but are instructed by the donors. All these things frustrate the policymaker at the end (researcher, Malawi)

Second, researchers are typically involved in donor-initiated research as consultants and are not obliged to become involved in

Policy maker's Barriers to Uptake of Research Outputs

dissemination activities. Thus, a protocol has developed whereby researchers pass research findings only to the donor agency and then move on to the next consultancy. In this situation, the onus is on the donor agency to disseminate research outputs more widely. Researchers felt that involving researchers in the dissemination process would be beneficial as they were more aware of the context of the issues brought out in the research.

Third, research conducted by international agencies based outside the study countries often has limited time to consult national policymakers and identify priority research issues. Researchers felt that this situation leads to a limited understanding of the cultural and contextual issues surrounding the research, and that there were particular limitations with policy recommendations that fail to reflect 'on the ground' realities. The research outputs were also most likely to be presented at international conferences or published in international journals, and hence not easily accessible to local policymakers and government ministries.

Research is donor-driven rather than created through need. The policymakers don't take these research recommendations seriously. external consultants also are not aware of Malawi culture and so annoy those who are responding to the research (researcher, Malawi).

Most research ends up on the shelves of people abroad and can't be accessed by policymakers in Tanzania (researcher, Tanzania).

International agencies give a background but local agencies give the context of India. International agencies should have liaison with Indian organizations to understand the complexities on the ground (policymaker, India).

Limited Access to Research Outputs

Accessing research outputs is one of the greatest difficulties faced by policymakers in utilising research findings. Policymakers identified that research outputs often do not reach ministries or government officials as they are disseminated in academic circles or passed only to donor agencies. Policymakers seldom access these channels of dissemination, so scientific information with the potential to support policy formation has limited accessibility to all the relevant stakeholders. Policymakers reported a need for wider in-country dissemination of research outputs.

The research that has been conducted is usually by the academics or the universities, and is published in the international journals and so they don't get shared at the local level or the country level (policymaker, Pakistan).

Research just goes to those who commissioned it, not disseminated widely information flow is usually unidirectional, it does not go further horizontally (policymaker, Malawi).

Researchers do research for dissemination in publications or technical papers where policymakers don't get the chance to read. There is still a gap in utilising the available research into programming or policymaking (policymaker, Tanzania).

Lack of Central Source of Research Outputs

An issue identified mostly by policymakers in Malawi and Tanzania is the lack of a central depository for health research outputs. Policymakers expressed frustration at trying to locate research reports without a central clearing-house or database where they could easily access health research. A depository of research outputs was thought to be particularly useful for accessing unpublished studies. It was suggested that such a depository be co-ordinated by a public institution to enable greatest access and should be publicised widely among the policy community.

Quality of Research

The quality of in-country research was an issue that discouraged some policymakers from using local research outputs and prompted them to seek research findings from international agencies. This was a particular issue in Malawi and Tanzania, where policymakers identified that the small skill base amongst local researchers made it difficult to conduct high quality research. Policymakers felt that the lack of government investment in the research sector meant that local researchers have not had the advantage of expert training afforded to those in international agencies, and so the technical competence to undertake research of an international standard was not fully developed.

There are quality issues with in-country research, greater validity is given to research conducted by international agencies, as long as they used local people to field it (policymaker, Malawi).

The difference in quality of local based research versus internationally conducted research is important. Malawi based research does not have the advantage of technology to present results in a digestible form. Even substantive quality is more traditional scientific enquiry rather than programmers needs. International NGOs have worked hard at developing ways to approach policymakers (policymaker, Malawi).

Mutual Barriers to Communication

Lack of Formal Communication Channels

Both researchers and policymakers identified the lack of formal channels of communication as a barrier to effective dissemination. Policymakers expressed difficulties in identifying researchers beyond informal contacts, and researchers faced problems in identifying policymakers to whom to disseminate research outputs. Both groups felt that a communication forum (such as a research association or regular meetings) would enable effective dialogue between researchers and policymakers. To foster more

effective communication between researchers and policymakers, it was suggested that researchers be included on Ministerial advisory boards to identify priority research areas and define appropriate research agendas to allow research activities to respond to programmatic needs.

Lack of Collaborative Research

Policymakers reported that when they were involved in the research process, had commissioned the research, or the research was in direct response to a policy need, it was more likely to be utilised for policy development. Researchers also reported that the involvement of policymakers in the research process led to a more effective consideration of policy issues, political limitations and practical realities in implementing the research findings. Both parties, however, reported that much research was conducted without collaboration between researchers and policymakers, and this posed a significant barrier to dissemination. Collaboration between researchers and policymakers was encouraged at various stages in the research process; in defining research proposals, designing research questions, and particularly in shaping policy recommendations that are realistic and relevant to the resource constraints of the ministries. Ensuring that policymakers gain a sense of ownership of the research is seen as crucial to the uptake of findings, illustrating the importance of developing a relationship of trust between researchers and the policy community.

There needs to be a whole dialogue between policymakers and researchers at the beginning of the research study, so that it becomes something that programmers have a vested interest in and researchers understand that vested interest and try to meet it. That might help to facilitate the uptake of research findings in decision-making (policymaker, Malawi)

As a programmer, if I am involved in the research I will be able to understand it better, similarly if a researcher can participate in the policymaking level then he will be able to make an impact in a better way (policymaker, India)

Format of Research Outputs

Many policymakers reported difficulties with the format and style in which research outputs were presented, stating that research reports were often written in an academic style using technical language, and include complex statistics that are difficult to understand. Policymakers stated that research outputs were often too lengthy and that concise, well-structured reports with an executive summary of the key findings and policy implications were more appropriate. Researchers, however, felt that summarising research findings risked losing the detail needed to fully understand the research problem. They also felt that their academic peers would poorly regard research if it did not provide adequate detail of the research methodology, statistical techniques and use the correct terminology.

One of the critical issues for policymakers in using research outputs is the frequent absence of policy implications or recommended interventions from the research. Furthermore, policy implications that are presented are often too general or unrealistic in terms of resources. Some policymakers felt that a range of policy recommendations should be provided such as short, medium and long-term strategies and that options should be given for various resource scenarios. They also felt that research reports should highlight which agencies should be responsible for initiating changes. In response, researchers felt that they are often not aware of policymakers' priorities and resource constraints and therefore find it difficult to develop feasible policy recommendations. Researchers also stated that policymakers often judge the policy recommendations simply on practicality and affordability of implementation rather than on the importance of the issue.

It is the how part, how you can change things, what you should do. Researchers usually don't do that, they put the research on the table and say now you figure out what to do (policymaker, Pakistan).

They need to interpret figures and findings, not just present the finding that one third of children born to teenage mothers die – say that this means that there should be pregnancy prevention available (policymaker, Malawi)

Sometimes researchers don't know who to address their recommendations to – they say policymakers – but that is a broad term (policymaker in India).

Political Influences

Researchers and policymakers acknowledged that policy formation is often influenced by political priorities and constrained by the resources of government. It was recognised that even well developed research findings may not be acted upon if the political climate was not conducive to change. Some researchers were reluctant to disseminate research findings that have political implications and felt that it would be inappropriate to disseminate findings that were in conflict with current national politics. While these issues did not discourage researchers from disseminating research outputs to policymakers, researchers were aware that complex political issues often influenced policy development.

Everyone who read the report thought it was excellent, the Ministers were very happy with it, but no one could implement it as it was too politically contentious (researcher, Pakistan)

Research findings may be beyond the capabilities of policymakers, even though the problem is highlighted by research. Our research found that many women were delivering at home due to lack of trained staff at hospitals. But policymakers are not permitted to employ more staff (researcher, Tanzania)

Discussion

Although this study was conducted in four very different countries it is worthy to note the uniformity of issues raised by researchers and policymakers, indicating the broadly common experiences in the process of research dissemination. A number of issues, however, were more prominent in the African study countries, in particular the influence of donors on the process of dissemination. Also the resource and infrastructure limitations and the smaller pool of skilled professionals in health research in Malawi and Tanzania lead to the greater prominence of issues such as the lack of communication networks, the need for central depositories of research information and the lack of in-country expertise for policy research in these countries.

The current processes of dissemination between researchers and policymakers in the study countries essentially follows the ideal model of the natural sciences (Weiss 1977), in which dissemination forms the end-stage of the research process. Researchers frequently reported that policymakers were not usually involved in the research process, and that they disseminated their findings via reports sent to policymakers as the final stage in their research process. There was little evidence of communication in the study countries that followed the enlightenment model (Weiss 1977), which reflects the limited channels of communication between researchers and policymakers. An increase in the number and types of dissemination strategies used by researchers would be necessary to increase policymakers exposure to research outputs, and to foster the gradual permeation of research into the policy formation process, as described in the enlightenment model. In addition, policymakers described a 'deliberate' form of research uptake, in which they sought specific research information or statistics to support a policy. Diffusive dissemination, which requires that policymakers have exposure to research findings from a range of sources, was not evident as the channels of research dissemination were limited in each of the study countries. The dissemination of research in this study was also strongly focussed towards the use of research as 'data and findings', rather than as 'ideas or criticism', or 'arguments for action' (Weiss 1991); in particular this was reflected in the frequent absence of policy implications in research outputs.

This research identified a number of barriers in the study countries that inhibit the effective dissemination of research outputs. A crucial barrier to the use of research in policy formation is the absence of a strong evidence-based policy culture. Currently the policy environment in the study countries is not focussed towards incorporating research in policy formation, so policymakers do not value the contribution of research in the policy process. In addition, researchers often neglect to identify the policy implications of research studies or identify a course of action for policy audiences. Hence, research is either ignored, or policymakers developed their own extraneous implications from the research.

The lack of collaboration between researchers and policymakers in the study countries also acts to prevent effective dissemination of research outputs. Porter and Pryor-Jones (1997) argue that one of the essential elements for effective communication between researchers and policymakers is the involvement of policymakers in each stage of the research process. They argue that this fosters a sense of ownership of the research by policymakers and ensures that the research meets the specific needs of the policymaker. Such collaboration is also effective in ensuring that the format of research outputs meets the requirements of policymakers. The continued reporting of a lack of policy implications and inappropriate formats of research reports as barriers to the use of research in policy formation points to the need for greater collaboration between researchers and policymakers at all stages of the research process.

Worral (1972) states that developing countries often lack the communications infrastructure to allow the effective dissemination of research outputs, in particular, the lack of a formal system of communication between researchers and policymakers, with an absence of "clearing houses" that can act as a store for research information and materials. Hence, existing research is not always available to those who need it, and policymakers must thus make decisions based on inadequate information (White 1993). The absence of a strong communications infrastructure proved to be a major barrier to the effective dissemination of research outputs in each of the four study countries, limiting the channels of communication between researchers and policymakers and restricting communication to the form described in the ideal model of the natural sciences. Although the ideal model of the natural sciences does result in the dissemination of research to policymakers, dissemination as the end-stage of the research process misses opportunities for policymakers to become involved in the research process, and to ensure that the research meets their information needs. The indirect nature of the enlightenment model of communication, whereby research information gradually permeates into the policy process through a number of information channels is currently underdeveloped in the study countries. Research can have the greatest impact on policy when effective communication exists between researchers, policymakers and the community affected by policy change (Porter and Pryor-Jones 1997). However, much research communication in the study countries takes place through academic channels and does not reach policy audiences. It also risks appearing esoteric and losing its relevance to policymakers.

The dissemination of research to policymakers does not necessarily ensure that it is used in policy formation. Walt (1994) argues that political environments are not always conducive to the incorporation of research into policy formation, especially if the research outputs question policy impetus or political ideologies. In addition, research that advocates change that may disrupt long-

standing power-relationships and organisational cultures takes a great deal of effort to implement, and as such may be ignored by policymakers (Haaga and Maru 1996). Researchers and policymakers in the four countries acknowledged the role of politics in policy formation, and noted this often superseded the importance of research in the policy formation process.

Dissemination between researchers and policymakers is not always a simple two-sided communication, there may be a range of mediators in the relationship (Askew 2002). Mediators may include advocates, communications experts and donors, who promote the main findings of research to policymakers, in an attempt to focus policymaker's attention towards a specific area of need. Askew et al (2002) argue that the increasing importance of mediators in the dissemination process has evolved both from researcher's lack of understanding of the policy process and policymakers' difficulties in understanding research outputs. Mediators thus act as a mechanism for bridging this communication gap, promoting the policy relevance of research outputs. The only type of mediators identified in this study were donors, who often commissioned research and then disseminated the research results, using a wider range of dissemination strategies than were possible for non-commissioned research. The use of mediators thus offers the potential to increase policymaker's access to research outputs particularly in settings with poorly developed communication channels between researchers and policymakers. There were, however, a number of problems associated with the use of donors as mediators that need to be addressed if donors are to become effective mediators. These include the potential loss of context in the research issues and the risk that research outputs would not be disseminated in the country of the research.

Researchers themselves identified their lack of dissemination skills as a barrier to the successful communication of research outputs to policymakers, whilst research outputs were often criticised by policymakers for being too complex and lengthy and lacking in policy recommendations. These barriers point to the need for training on dissemination skills among researchers in the study countries; to foster a greater understanding of how to prepare research outputs for a policy audience and increase confidence in locally produced research. Conversely, researchers often reported a lack of understanding of research among policymakers. To some extent this could be improved through increased collaboration between researchers and policymakers throughout the research process. This may act to improve policymakers' understanding of research outputs, whilst also creating a sense of ownership of the research among policymakers.

Conclusion

The barriers identified in the process of communication between researchers and policymakers in the four countries were surprisingly similar, suggesting not only that communication between researchers and policymakers is a widespread problem, but that the divide between the two parties is shaped by common factors. The lack of clear communication channels between researchers and policymakers and the lack of central depositories for research outputs restricted the successful dissemination of research outputs, and limited communication to the type described by the ideal model of the natural sciences. For communication between researchers and policymakers to develop into the form described by the enlightenment model requires greater investment in the research and communication sectors, to facilitate the growth of a range of communication channels and increase the exposure of policymakers to research findings. Given the resource poor environments of the study countries and the range of demands on limited budgets, such an investment is unlikely in the immediate future. Mediators, however, provide a potential opportunity for increasing the effectiveness of research dissemination, and international donors have a clear role to play in fostering the growth of evidence-based cultures in these countries. Such mediators, however, must take steps to ensure that the research they commission and the findings they promote are contextually appropriate, which can be achieved through increased collaboration with in-country researchers and policymakers.

Other barriers identified in this research are more easily surmountable. Researchers can take steps to improve the format of their research outputs and to include relevant policy recommendations, whilst policymakers can communicate their information needs to researchers. Dissemination was often viewed as the final stage in the research process, with researchers and policymakers meeting only at this stage. Dissemination, however, is a continual process, with contact between researchers and policymakers at various stages of the research process offering the chance for both parties to have inputs into the research and ensure that research meets current programmatic needs. Increased collaboration between researchers and policymakers was consistently reported as the key to the successful dissemination of research outputs, and requires effort from both parties. A greater understanding of the potential contribution of research to policy and the constraints of policy formation would undoubtedly arise from closer collaboration between researchers and policymakers.

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