“Interaction” and research utilisation in health policies and programs: Does it Work?

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Abstract

The objective of this study was to assess if interaction between users and producers of research is associated with a greater level of adoption of research findings in the design and delivery of health care programs. Responses to the dissemination of a research report on breast cancer prevention were compared between two groups of public health units in Ontario, Canada. Although all public health units received the report, only a subset of units was involved in the development of the report, while others were not. Research utilisation was conceptualized in terms of stages, including reading the report, information processing, and application of findings for public health units’ policies and programs. Using a multi-case study design, three units that contributed to the report’s production (the interacting units) were compared with three units who were not involved in producing the report (the comparison units) on the basis of research utilisation. Data collection involved group interviews and document review. Results demonstrated that interacting units had a greater understanding of the report’s analysis and attached greater value to the report. However, interaction was not associated with greater levels of utilisation in terms of application. Both interacting and comparison units used the research findings to confirm that their on-going program activities were consistent with the research findings, and to compare their program performance relative to other units. In conclusion, interaction influenced the understanding of the research, and intent to use the research findings, but applied use was independent of interaction between producers and users of research.
Introduction

Few studies have evaluated the effectiveness of strategies aimed at bringing research findings and policymaking closer together, or the impact of these strategies on the design and delivery of health programs. Existing research has concentrated on identifying the ideal characteristics of a research study (in terms of credibility, methodology and format) that promote research use [1,2], or on examination of the organizational culture supporting the effective transfer of research findings into policy [3]. Some researchers have called for more active approaches to researcher-policymaker interactions, suggesting that formal linkages and frequent exchanges between researchers and policymakers are necessary if scientific information is to inform policy development [4].

Under such interactions policymakers can highlight policy-relevant research priorities while researchers can interpret research findings in local contexts. In this way researchers and policymakers can build a common understanding of the policy problem, and possible solutions [5]. This is accomplished through a mutual understanding of each other’s way of “doing business”, through the development of a shared lexicon, and the identification of common goals and values. The interaction also represents a timely form of research dissemination: the policymaker is exposed to research findings relevant to the policy problem at an early stage of the policy development process.

The purpose of this paper is to determine if interaction between researchers and policymakers promote the utilisation of research findings in public health programs and policies. This study represents an attempt to build an evidence base for active approaches to transfer research into the policy domain. We first present a conceptual framework to
provide a clearer understanding of how interaction can contribute to the utilisation of research findings, and then use this framework to guide the empirical analysis of the impact of researcher policy-maker interaction on the use of research findings among public health units in Ontario, Canada.

**Historical Development of Conceptual Models of Research Transfer**

Conceptual models of research transfer have been developed to try to better understand how research findings are disseminated, received and acted upon. The early diffusion model was based on the assumption that the simple dispersion of research findings was sufficient for policymaking. Policymakers were seen as naturally information seeking, and researchers and policymakers were assumed to be interested in similar (research) questions [6,7]. One of the strengths of this model was that it represented an initial attempt to focus on research characteristics that affected research uptake; the model emphasized that research perceived to be of high quality was more likely to be noticed by users than research perceived as poor quality (later it was recognized that quality was a necessary but not sufficient condition for users' attention) [8]. The model’s shortcoming was that it failed to recognize the incremental nature of policy-making and program development [9], as well as the other environmental constraints faced by users. Consequently, the diffusion model was not helpful in encouraging the application of research findings.

Dissemination models were based on the assumption that a more focussed distribution of research findings was needed if they were to be used in policymaking, i.e., specific types and forms of research findings are transferred to the policy community at
particular times and/or to particular policymakers. The dissemination model approach assumed that “the information is out there, it just needs to be disseminated appropriately” and it will be used [10, 11]. Little attention was given to the receptivity of policymakers to disseminated research findings [11,12]. Furthermore, research transfer was still seen as a unidirectional process, and feedback from the user was not incorporated into the research [7]. As a result, research findings that were “well” disseminated but not used were often attributed to deliberate non-use.

More recently the notion of "two-communities" has been used as the basis of research transfer models [13]. This reflects the notion that researchers and policymakers come from different communities and use different language and methods of communication [14]. Bridging the gap between the two communities is assumed to increase the sensitivity of each community to the other’s position and research needs [11], and encourages use of research findings.

One prominent theme in the development of the two communities model of research transfer is the role of interaction between the producers and users of research as a means of fostering research uptake by policy makers. The literature includes terms such as “effective interactions” [13], “linkage networks” [4] “sustained interactivity” [4], being “utilisation-focussed” [15], “synthesis pedagogics” [16], “interaction models” [7], “interactive processes” [17], and “collaboration” [13] between producers and users of research although to date, these concepts have not been extensively analysed to explore the precise meaning of these terms and how the concepts are expected to impact on the use of research findings.
The underlying rationale for increasing interaction is the perceived need to bridge the gap between the research and policy communities. By doing so, interaction strategies address both sides of the research-policy interface; the involvement of the policymaker in the research process can lead to useful dissemination modalities. Interaction can also promote receptivity of the research by policy makers through early and repeated engagement of them with the research findings. Interactions might help research users better understand research findings and facilitate information exchange between the two groups about professional norms and expectations.

A Conceptual Framework of Research Utilisation Guiding this Study

Studies exploring the determinants of the utilisation of research findings have generally been undertaken in the absence of a guiding unified, tested and accepted conceptual framework [18,19]. In particular research utilisation has not always been defined, leading to ambiguities in the way outcomes are measured. In order to avoid such ambiguities a simple conceptual framework was developed by merging the steps of the research process with the different stages of research utilisation (these stages were adapted from Rich [3]). From here we were able to identify where interactions between the users and producers of research might occur. This framework guided the current study (see Figure 1).

The boxes linked by the solid arrows represent the traditional process for undertaking health research, consisting of (1) Research Questions: the identification of questions for study, usually driven largely by the intellectual curiosity of the research producer, (2) Research Conduct/Research Finding: the process of conducting the
research and generating findings, where the research is developed, described and interpreted by the research producer. (3) Research Dissemination: the communication of selected research findings to particular audiences. These include traditional modes of communication such as academic journals, discussion papers or conference presentations, largely aimed at academic peers, as well as seminars, workshops and face to face meetings aimed at either the general policymaker community or particular members of that community. (4) Research Utilisation: the influence of the research findings on policymakers.

Researchers have generally adopted two approaches to the conceptualisation of types of research utilisation. In the early years of development in this field, Weiss [20] broadened the original notion of simple instrumental use, where research is used to inform a concrete decision, to include conceptual (or enlightenment) use, where findings from research reorient decision-makers’ attitudes to and perceptions of a social problem. Thus, instrumental use usually reflects incremental changes that are immediately implemented, whereas conceptual use may require many years before any major overhaul of policies or procedures is evident – it may take time for findings that challenge the status quo to be digested and acted upon by decision-makers. Weiss also identified political (or symbolic) use, where findings are used to support a predetermined decision.

Attempts to operationally define the terms “conceptual use”, “instrumental use” and “symbolic use” for empirical study have proven difficult and problematic [3]. In response to these concerns, the second conceptualisation of research utilisation, as a progressive process of more detailed engagement with the research findings, evolved.
The stages of engagement adapted for this study are receiving, processing and applying research findings [3].

The (5) Interaction box represents the sustained communication between the producer and user of research. This communication can occur at all stages of the research process (question development, generation of findings, dissemination of findings), represented by the dotted lines. The expectation is that interaction will increase the extent of research utilisation (receiving, processing and applying).

This framework guided our investigation of the association between interactions and utilisation by way of a multi-case study of interactions between producers and users of research in public health units in Ontario.

**The Case of Ontario Public Health Units**

Public health units are municipal level public agencies responsible for planning and evaluation of public health programmes in Ontario. Moreover, they are legislatively mandated to provide evidence-based programs. In late 1998, several public health units (PHUs) in the Central West Ontario region came together to identify research questions about local breast health practices. These questions were relayed to a local research organization that worked with the PHUs to generate a report. The report provided descriptive information by region about the breast health practices of women in Ontario. While not innovative, it did provide unique regional-level information. The research organization is publicly funded, with a mandate to provide health data and analysis to community agencies. Over the next year, the PHUs provided feedback on drafts of the commissioned breast health practices report (data for the report originated from a national
health survey). The findings were communicated in print and presented at a meeting of representatives from the commissioning PHUs. By 2000, the final version of the breast health report was distributed to all PHUs Ontario. This multi-case study examined differences in utilisation of the research findings presented in the report among ‘teams’ from those PHUs who interacted with the research organization (the interacting teams), and those from PHUs that simply received a copy of the final report without any prior interaction (the comparison teams).

Methods

Case Sampling

Each case was defined as the group of staff and their manager, within each PHU, responsible for the breast health program. It was this group that had commissioned the breast health research report, and would most likely be interested in the report findings. These cases are referred to as the Healthy Lifestyles Teams or “teams” for short.

The broad distribution of the breast health report led to the possibility of incorporating comparison groups into the research design (i.e., teams that did not interact with the research organization) [21]. It was expected that greater research utilisation would result among those teams that had interacted. Three teams were selected from the set of six interacting PHUs, together with three teams from the set of thirty-one possible comparison teams, for a total of six cases [21].

Selection of comparison teams was based on a matching process with teams from interacting units in order to ‘control' for variables that might influence research utilisation. For each of the three interacting teams a matching non-interacting team was
identified based on the size of the team and the education levels of all team members, including their manager. The matching variables reflected the teams' capacity and/or orientation to use research. Their Director, to whom the team manager is accountable, provided this information.

**Data Collection and Analysis**

Data sources consisted of the Healthy Lifestyle Teams (including the manager), their Directors, and documents, such as annual reports, newsletters, meeting agendas and minutes. Informed consent was obtained from each member of the team and their Director.

A one-hour, group interview [22] was used to collect information from the teams. Semi-structured questions, and probes, were used to solicit responses about dissemination, the interaction, research utilisation, and the organizational and environmental context associated with each public health unit. All group interviews occurred approximately six to eight months after distribution of the breast health report. This time period represented a balance between when the first author could conduct the fieldwork and when all team members would be available. Interviews were tape-recorded. Each team was subsequently asked to review a summary of their interview for accuracy.

Two pilot interviews were used to inductively develop coding categories, in a constant, comparative fashion, for subsequent coding of group interviews [23]. The first author and another researcher independently developed the categories based on data segments within the transcripts, where data segments were defined as the segment of
conversation between questions or probes. The categories were descriptive in nature (e.g., “Barriers to Use”). The first author, using the developed categories, manually coded all transcripts. Ideas and insights about the data were recorded as the analysis progressed. The categories were analysed for relevant themes and patterns [24]. Data from the group interviews were then coded and analysed using a similar thematic analysis [25] approach.

Informal conversations with those familiar with the structure of public health units in Ontario suggested that managers were considered part of the service delivery team, while Directors were seen as part of the senior level management team. Thus, Directors were not invited to the group interview with the team in order for a frank discussion about research utilisation to emerge. Directors were instead interviewed by telephone using semi-structured questions. Of primary interest was information about the organizational climate related to their public health unit.

Documents found in the public domain or by referral from a team were also collected and reviewed. These documents (e.g., annual reports) provided organizational and contextual information, and were used to corroborate comments made during interviews.

Measuring Research Utilisation

Research utilisation was operationalized as three progressive stages [adapted from 3]. Receiving denotes that the team received the copy of the report and one or more members of the team read the report. This does not necessarily mean that the reader understood the research findings. Information processing denotes that the merit or utility of the research report was assessed by the user. Assessment of merit covered the
presentation of the report (the lay out, the length, the language, etc.) [8], its perceived validity (methodological rigour) [1], as well as the specific research findings [8]. Comments from team members about any of these elements were taken to mean that some information processing took place. **Application** denotes that research findings were incorporated or integrated into the team’s activities. This includes any influence on the way a problem was defined or approached, or decisions about how to respond to the problem [3]. This implies that the research findings were processed and then *generalized or related back* to the problem, decision or program at hand. In the most tangible examples, research findings directly led to some decision or action [3].

Team members were asked to identify any instances of utilisation in their own words, related to their own spheres of professional responsibility. Their responses were analyzed according to the three stages described above.

**Findings**

The teams discussed various issues related to research utilisation and public health. In this paper we present data on the elements described by team members that relate to the conceptual framework we used. Where individual teams are mentioned, numbers 1-3 indicate a comparison team with 4-6 being interacting teams. Of note is the fact that comparison teams had no formal knowledge about the development of the breast health report.
a) The Interaction

It was helpful to understand the interaction process before examining research utilisation outcomes. From the outset we realized that if the interacting teams perceived that the interaction was ineffective, this might influence if and how they utilized the research findings. Hence, as a first step, we explored the level of support for the interaction by comparing the documented feedback, drafts and the final version of the research report to see if the final version reflected the interacting teams’ desired changes. This analysis confirmed that the final version reflected the teams’ feedback.

Then we explored whether the interacting teams and the comparison teams expressed different levels of satisfaction with the outcome of the process: the research report. Both groups had positive and negative things to say about the breast health report. Positive comments ranged from “It was nicely laid out and easy to read. You could get a sense of what was in there very quickly...” (team 1) to “In terms of length, seems appropriate to me” (team 4). Negative comments included, “If they had [added] a one page, two-sided summary...” (team 1), and “I like it bound” (team 5) (instead of the stapled format used by the research organization). These comments were not extreme in either direction. Furthermore, during the interviews, the interacting teams, when asked, did not express major weaknesses with this process of generating the research report.

A comparison of the comments made by the two groups of teams suggested that the interaction process educated the interacting teams about the limitations and the analytical process associated with the breast health report’s analysis. For example, interacting teams seemed to have a better understanding of the limitations associated with a secondary analysis. In contrast, comparison teams made several comments about the
report being less useful for planning because study findings were presented at the level of the region, instead of the smaller county level. Comparison teams found fault with the original wording of the national health survey questions, expressed qualms about the methodology of the secondary analysis (e.g., “If the information is correct now it does leave me to wonder in the end about the survey and the questions and answers in the analysis …”, (our italics), team 3), and had difficulty understanding why the data were not broken down at the county level. Similar comments were not prevalent among the interacting teams, suggesting that participation in the research process helped the teams understand the report they commissioned. As well, neither interacting nor comparison teams reported any dissatisfaction with the process, which set the stage for utilisation of the report.

B) Outcomes of Research Involvement

It was expected that the interacting teams would be more likely to use the research findings in the report than those teams who did not interact. This expectation was confirmed with respect to receiving and information processing (e.g., some of the non-interacting teams did not receive the report in their particular mail slot within their own organization). What was notable (for information processing) was the way in which teams identified, described and then discussed a particular finding.

The interacting teams were more articulate about the value of the report than the comparison teams. That is, although all teams were positive about the format, and admitted to being surprised about some findings in the report, each interacting team extended the discussion by identifying the merit of the report. The report was perceived
as useful because it synthesized previous research (teams 4 - 5), it provided local, not provincial, information (teams 4 - 5), it described the national health survey (team 5), and it provided an opportunity to compare experiential knowledge with research (team 6).

There was also a marked difference between interacting and comparison teams with respect to **expectations for using** the report in the future. Interacting teams discussed the value of the report as a reference for future activities (teams 4 - 6). They expected to use the local data in the report for presentations (team 4), for media communications (team 4), for the original citations (team 4), for developing new educational material (teams 4 - 6), and for strategic or program planning (teams 4 and 6). In contrast, the comparison teams gave little emphasis to expectations around future use of the report.

In terms of application all teams talked about using the research findings in a confirmatory way that had not been anticipated at the outset of the study. The interacting teams stressed that the report was valuable for confirming what they were already doing with respect to breast health. Team 4 mentioned that they checked their current print material against the information in the report. Team 2 said that the report confirmed focus group and survey research they had previously conducted. Teams 2 and 6 indicated they used the results to confirm their field or experiential knowledge of breast health practices, i.e., to get a sense of where their activities stood against current evidence.

A second confirmatory way in which all teams used the report was to compare breast health activities in their region to those of other regions: “I was quite surprised with the statistics by reading this. We are doing much better” (team 3). They were reassured that they were on track, and not an outlier among their peers. As team 5 put it,
“Well one thing we noticed pretty fast is that boy we’re not much different from the rest of the province, and I mean in fact we were doing well, I think, isn’t that what it says to us? We’re doing not badly?”

**Discussion**

The concept of interaction between the producers and users of research is promoted as a necessary strategy for health researchers in Canada [26]. The concept, however, remains underdeveloped in the research literature. This study considered an interaction process that is commonly used by many health organizations: the identification of a research need and specific research questions, followed by the provision of feedback on draft reports. This study described the ability of this interaction process to enhance the use of research findings by public health units in Ontario, Canada.

The results suggest mixed conclusions with respect to the effectiveness of the interaction strategy. Information processing of report contents increased with interaction; this finding was replicated among the three interacting teams. Given that the interaction strategy involved the articulation of research questions for program planning, reading of draft versions of the report, and conversing about the report at a presentation and/or with colleagues, it came as no surprise that interacting teams were more cognizant of the report contents.

On the other hand, interaction was not associated with increased utilisation of research findings in programs and policies within the time frame of this study. However, interacting teams, unlike the comparison teams, described many instances of how they expected to use the report in the future.
To examine the possibility that these findings might be related to contextual differences between interacting and comparison teams, comprehensive descriptive profiles of each public health unit and team were developed and are available elsewhere [27]. It appeared, nonetheless, that the contextual differences between these two groups (i.e., organizational or environmental differences) were more random than systematic.

The study results indicated that interacting teams were educated, albeit unintentionally, about methodological and analytical issues associated with the report. Determining whether this is a beneficial outcome in and of itself is beyond the scope of this study. This finding, however, does lead one to speculate that there may be other potential benefits associated with the interaction strategy. Other spin-offs of this strategy might include such things as empowerment, or enhanced critical assessment skills for research users. What is important for future studies is the systematic identification of those benefits that lead to the desired end state: the utilisation of research findings.

In this study, the research findings were used by public health staff to confirm that on-going program activities were on par with the current research, and to establish where their local breast health practices stood in relation to other regions’ practices. This finding held across both interacting and comparison teams and reflects an application of research findings that is not commonly discussed in the research transfer literature.

Confirmation might be related to Weiss’ notion of political use, where research findings are used to support a policy position already taken by the user [20]. In this study, however, teams were not using the research findings as a higher authority by which to justify their actions, or to support a policy position already taken. Rather, the outcomes of their own breast health program activities were compared with associated
information presented in the report. The use of research findings in this confirmatory fashion was less deliberate and less conscious than political use as defined by Weiss.

The purpose of this paper was to determine if interaction between researchers and users promoted the utilisation of research findings. This study represents an attempt to explore an active approach to research transfer. Others have considered the use of intelligence officers or knowledge brokers as way to bridge the divide between research and application [5]. A knowledge broker would act to synthesize relevant research about a topic and present it in a user-friendly format. The interaction approach, on the other hand, favours direct contact between researchers and decision-makers.

An interesting question raised by this research is whether the specific types of research utilisation might be related to the characteristics of the research and related policies. In a comprehensive review of the domain of health research and policy-making [28], three levels of policymaking are identified: 1) governance/legislative policymaking, 2) service/administrative policymaking, 3) practice/clinical policymaking. The authors suggest that research has the most influence on practice-based decisions, and the least influence on governance decisions. The information contained in the breast health report (e.g., prevalence rates of certain practices, such as breast self-examination) was based on a secondary analysis of existing information. In some sense the report provided information about the health unit’s performance, and the performance of its peers. One would have expected that this information would have, at least in part, been of interest to all public health units, irrespective of the level of interaction with the producers of research. This topic represents an area for future study, as also noted by others [29]; research transfer studies have thus far paid little attention to comparing utilisation
outcomes by type of study (e.g., program evaluation, systematic literature review, health status report).

Despite the mixed results, the interaction strategy described here remains attractive for another reason. The strategy requires a minimal amount of resources from policymakers and researchers. In particular, the general time constraints facing policymakers is a major concern when developing interactive approaches. Research transfer will not succeed unless this limitation is considered in any strategy. Here, the interactive part of the relationship between the user and producer of research was project specific. At the same time, it contributes to setting the foundation for an informal, longer-term linkage between the user and producer.

In terms of limitations, it could be argued that the timeframe between report dissemination and the measurement of research utilisation outcomes, approximately seven months, was not long enough to detect variation in research utilisation in programs and policies. Second, like many other research utilisation studies, verbal reports were used to identify utilisation outcomes. A third limitation is that the interaction strategy described in this study had been used previously by the public health units and the research organization for other health issues. The study results might have been different had the interaction between the two parties been new.

The major strength of this case study is that it used multiple cases and multiple comparison groups to support the reliability of findings. This study represents one of the few empirical investigations about the influence of interaction between users and producers of research on the use of research information.
In summary, interactions between users and researchers remain an attractive strategy by which to facilitate the use of research findings in policies and programs. Interactions need not be complex to demonstrate some benefit. In fact this study suggested that “benefit” can present itself in intended and unintended forms, and is deserving of further inquiry.

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Researcher/Policymaker Interaction

Research Questions → Research Findings → Research Dissemination → Research Utilisation

Receiving And Reading → Information Processing → Application

Figure 1. A Conceptual Framework of Interaction and Research Utilisation