

Public Health Decision-Makers' Informational Needs and Preferences for Receiving Research Evidence

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ABSTRACT

Objectives: The purpose of this study was to identify decision-makers' preferences for the transfer and exchange of research knowledge. This article is focused on how the participants define evidence-based decision-making and their preferences for receiving research evidence to integrate into the decision-making process.

Methods: Semistructured interviews were conducted with a purposive sample of 16 Ontario public health decision-makers from six Ontario public health units in this fundamental qualitative descriptive study. The sample included nine program managers, six directors, and one Medical Officer of Health. Participants were asked to define the term evidence-based decision-making and identify preferred research dissemination strategies. The interviews were audio-taped, transcribed verbatim, and coded for emerging concepts.

Results: Participants defined evidence-based decision-making as a process whereby multiple sources of information were consulted before making a decision concerning the provision of services. To facilitate integration of research evidence into the decision-making process, public health administrators appreciate receiving, in both electronic and hard copy, systematic reviews, executive summaries of research, and clear statements of implications for practice from health service researchers.

Conclusions: Although consensus exists among participants concerning the definition of evidence based public health decision-making, ongoing efforts are required to continue to promote the use of research evidence in program planning and public health policy. It is also important to continue to improve the ease with which public health decision-makers access systematic reviews, as well as to ensure the relevance and applicability of the results to the practice setting.

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BACKGROUND

In recent years the terms knowledge transfer and exchange, evidence-based decision-making, and

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evidence-informed health policy have become commonly used terms, with little consensus on their definition, how they occur, or can be promoted (Graham et al. 2006; Thompson et al. 2006). Furthermore, significant resources and time are invested in the production of research knowledge that, if effectively transferred, could be used to inform policy and practice decisions and subsequently improve patient and population health outcomes (Lavis et al. 2003). A key recommendation arising from the National Forum on Health (1997) is the development of an evidence informed health care system in Canada where policies and clinical decisions are influenced by high-quality research knowledge. The decision to adopt or reject an innovation, such as the incorporation of research knowledge in the development of policies, is an activity that invokes an individual or organization to seek and process information about the

advantages or disadvantages of the innovation (Rogers 2003). Decision processes may differ in terms of the origin of the ideas as well as the activities that occur in coming to a decision (Nutt 1984). This suggests that certain stimuli such as opportunities, problems, or crises, evoke the need for decisions, and when they occur, they have a significant effect on the decision-making process.

Currently, little is understood about how an evidence-based decision “looks” in comparison to one that is not. Furthermore, while key documents exist defining the term evidence (Canadian Health Services Research Foundation [CHSRF] 2005), it is unclear how public health professionals, at varying levels perceive and define the term. If employees of an organization are to engage meaningfully in the process of evidence-based decision-making, an important first step involves developing a working definition of evidence-informed decision-making that holds true for the particular values and culture of that organization, as well as an assessment of stakeholders’ perspectives and definitions of what evidence is and is not. To not engage in such a process might present insurmountable challenges because it is likely that most, if not all, of the stakeholders involved in a respective decision define evidence-based decision-making differently, and in fact, likely have different perspectives on what constitutes the evidence that should guide the decision.

Although research has recently been focused on the process of health policy decision-making (Lavis 1999; Innvaer et al. 2002), the process continues to be shrouded in mystery. The influence of: key stakeholders, organizational culture and values, individual decision-making styles, research evidence, and the importance of the decision itself have yet to be comprehensively studied and understood. This is true despite the development of theoretical frameworks (Champagne 1999; Estabrooks 1999; Kitson 2000; Landry et al. 2001b; Dobbins et al. 2002) designed to explain these processes, and the availability of several literature reviews indicating the effectiveness of dissemination strategies. (Oxman et al. 1995; Thomson et al. 1997; Bero et al. 1998; Dobbins et al. 1998; Lavis 1999; Grol & Grimshaw 2003). Researchers unraveling the mystery will provide significant contributions to this emerging field and will assist in the development of more effective knowledge transfer and exchange strategies.

Dobbins’ framework (Dobbins et al. 2002) for the Dissemination and Utilization of Research for Health Care Policy and Practice, guided the development of the research question and objectives of this study. It was particularly useful in identifying key components of the decision-making process that required further exploration among public health decision-makers in Ontario; namely how public health decision-makers define evidence-based

decision-making, how decisions are made in public health units, and decision-makers’ needs and preferences for receiving research evidence from systematic reviews. This article is specifically focused on describing public health decision-makers’ definition of evidence-based decision-making (EBDM), as well as their informational needs and preferences for receiving research evidence. At the time of this study, public health in Ontario provided a unique opportunity to study decision-making given the decade long push by the provincial government to promote evidence-based decision-making at the local health unit level.

METHODS

A fundamental qualitative descriptive design (Sandelowski 2000) was used to explore the informational needs and preferences of public health managers, directors, and Medical Officers of Health. Participants were recruited from six Ontario public health units. This type of design is used to provide a comprehensive summary of facts and events, using the native language of the participants, and is commonly used by researchers and decision-makers who require direct answers to questions about specific events, phenomena, or programs (Sandelowski). Compared to descriptive, interpretative qualitative methods such as grounded theory or phenomenology, fundamental descriptive data are interpreted with less inference and minimal theorizing of data.

The six public health units represented five geographic regions in Ontario including Eastern, Central-East, Central, Western, and Northern Ontario, and provided services to both large cities and small rural areas. Three of the health units were designated as Public Health Research, Education and Development (PHRED) programs, while the remaining three were not. The PHRED is a health unit that has formalized linkages with universities and receives additional funding to conduct research activities and training. Among the participating health units, purposive sampling was used to identify decision-makers who, in their current roles were responsible for making decisions related to public health practice and policies. In other words participants were responsible for making decisions concerning provision of services, rather than directly involved in providing those services to the public. To ensure that core patterns of the phenomena were identified, maximum variation sampling was used to recruit decision-makers who varied on multiple dimensions, including professional designation, level of decision-making, years of experience in public health, and administration and affiliation with a PHRED or non-PHRED health unit.

Data collection occurred between October 2000 and February 2001 and consisted of 1-hour, in-depth telephone

interviews with each study participant. Ethics approval was obtained from the McMaster University Research Ethics Board. A semistructured interview guide was developed using concepts drawn from the fields of research dissemination and utilization (Champion & Leach 1989; Funk et al. 1991; Kitson & Currie 1996; CHSRF 1999) and organizational decision-making (Sharfman & Dean 1991; Rogers 1995; Burns & Wholey 1997; Cockerill & Barnsley 1997). The interview guide was pretested with two decision-makers from one public health unit before its use in the study. Changes to improve the guide were made based on the comments received during the pilot test. Interview questions included: How do you define evidence-based decision-making in public health? and what are your preferences for the format and presentation of research evidence?

Interviews were tape recorded and transcribed verbatim. Jack took primary responsibility for coding all data, identifying themes, and some interpretation. Dobbins double-coded 25% of transcripts and focused on interpreting patterns in the themes identified by Jack. Both authors have extensive clinical experience working in public health and continue to develop programs of research on topics relevant to public health, including service delivery, knowledge translation, and evidence-based public health decision-making. All authors were familiar with the types of decisions faced by public health decision-makers in Ontario at the time of this study.

Given the exploratory nature of this study, data were analyzed using qualitative content analysis (Miles & Huberman 1994; Woods et al. 2002). A process of first-level, or line-by-line, coding was conducted where key phrases were assigned to one or more appropriate codes. Second-level coding was then completed to identify subcategories, properties of each category, and to establish the relationships and links among categories. When data were reduced, key themes were developed through a process of interpretation of participants' responses (Priest et al.). Given then narrow scope of the research questions and the identification of articulate participants who were able to communicate their experiences effectively, data saturation was quickly reached and sampling was terminated at 16 participants.

To enhance data credibility two types of triangulation were used. First, data source triangulation occurred by interviewing decision makers from different levels in the public health units. Second, investigator triangulation occurred by using multiple investigators to collect and analyze the data (Denzin, 1989). This reduced bias and created a more holistic and contextualized description of decision-makers' preferences for research evidence in public health. Data dependability or stability was assessed through a process of stepwise replication or through the process of two inves-

tigators, each independently coding a series of transcripts, then to comparing final codes and interpretations of the data.

RESULTS

A total of 16 respondents were in this study. The majority of respondents were program managers ($n = 9$), followed by program directors ($n = 6$), and one Medical Officer of Health. While attempts were made to recruit additional medical officers, only one volunteered to participate in this study. While this poses some limitations in terms of the generalizability of the data to all medical officers, these comments most closely resemble the broad policy level decisions made by senior managers in health units. All the respondents were women and made decisions related to providing health services for the population. Fifteen of the respondents were registered nurses and one was a physician. The number of years spent in their current position ranged from 1 to 17, and the number of years in public health ranged from 7 to 30. All respondents had a minimum of a master's degree, although the focus of this graduate work varied from nursing, to epidemiology, to business management. Nine of the respondents were from PHRED health units and seven from non-PHRED units. While the degree of decision-making autonomy varied amongst participants, with medical officers of health having the most significant level of autonomy, all participants had sufficient autonomy in their positions to make recommendations for policy and practice within their health unit. They also had significant influence over the decision-making process in terms of the scope of knowledge sought and in choosing which stakeholders contributed to the decision-making process.

Defining Evidence-Based Decision-Making

Only minor variations in participants' definitions of evidence-based decision-making were noted among the Medical Officer of Health, program directors, and program managers. In addition, remarkably little variation existed in participants' definitions of evidence-based decision-making among the different geographic regions, health unit size, or between PHRED and non-PHRED units.

Generally participants perceived evidence-based decision-making as a process whereby multiple sources of information, including research evidence, were consulted before making a decision to plan, implement, and alter (if necessary) programs and services. Sources of information included: research evidence including primary research studies and systematic reviews, internal program evaluations, and local or provincial best practices. As one program director summarized:

It (evidence-based decision-making) is reviewing the literature or reviewing the summaries of literature reviews or the benchmarking material to look at what has been demonstrated to be effective under what particular circumstances, and then using that information to make a program decision.

Program managers also identified clinical expertise and past experiences as an important type of information used to support decision-making. In her definition of EBDM, this program manager clearly identifies the types of local knowledge or evidence that was valued by the majority of managers interviewed:

Evidence-based decision-making is looking at all of the information you have available, whether it is a literature search, reports, local community data, or what is happening in the province, to help you make a program decision.

In comparison to directors and the medical officer, managers were more likely to connect with colleagues in other health units to determine what they were doing and assess their experiences with certain programs. Managers were also more likely to involve front-line staff in the EBDM process by having them complete literature reviews or participate in data collection.

Despite similarities in defining the process across decision-making groups, there was at least one notable difference in the description of the evidence-based decision-making process that separated the program managers from the directors and the medical officer. The following quote represents the perspective reported by some of the program managers concerning the evidence-based decision-making process:

You need to turn over every rock you can to gather whatever information that might be out there to justify your decision as to the direction of a program.

This data infers that the process starts with making a decision about the direction of a program and then using various sources of information, including research evidence, to justify the decision. This is in stark contrast to the views of the directors and medical officer, who perceived the process as starting with searching and retrieving relevant information, including research evidence, assessing it, reviewing it, and if applicable using it as a basis for making program decisions.

Decision-makers' Preferences for Receiving Research Information

Little variation existed among decision-makers concerning their preferences and suggestions for how they would like research evidence to be presented as well as how they would like to receive it. Public health decision-makers value the use of systematic reviews to facilitate the decision-making process. They indicated that systematic reviews were particularly useful because they integrate the results of many

studies into one, which allows them to bypass the stage of looking at individual studies. This saves them time and gives them more confidence knowing their decisions are based on the culmination of many studies instead of just a few. The following excerpt reflects many of the views expressed by respondents.

The systematic reviews, I think, are wonderful. They have really informed a lot of what we do at our health unit. Because I know the authors of the reviews have gone through all that research, they have taken a look at the methodology, they have looked at whether it's valid or not and can say, based on all of this, this is what we are finding.

Despite a preference for receiving research evidence in the form of systematic reviews versus single studies, decision-makers strongly concurred that an abbreviated format of research evidence, such as an executive summary, would be preferable for sharing this type of information. They clearly articulated that because of information overload and limited time to read full study reports, summaries would be of most benefit if they were one to two pages long, contained content that was focused on key findings or the "bottom line" from the study, had limited discussion of methods, clearly articulated the implications of the findings to public health practice and policy, and potential short- and long-term outcomes expected as a result of implementing the research findings into practice. The following quote clearly articulates the comments from several respondents,

I would like to see an overview of what the research was about, probably less detail about the methodology. I want to know—what's the bottom line here, meaning this works, this doesn't work. I also want to see tips for implementation or cautionary notes.

Respondents agreed that summaries would allow decision-makers to determine quickly if a review was relevant to their practice or program and had something of value to offer them. As one participant explained,

If I get an article and it doesn't sell me that there is something of value, I file it. Sell me on the value of what the research article is and secondly, the research has to be practically oriented.

Decision-makers said that electronic communication channels are generally preferred for receiving current research evidence. They said that it would be helpful to have newsletters containing summaries of current research developed and directly e-mailed to them. They also expressed interest in using the Internet to access relevant research evidence and suggested that reports could be either distributed through public health professional organizations or through a clearinghouse. Some participants also indicated that a one-to-one interaction with the researcher to discuss research findings, their potential implications for practice, and the opportunity to brainstorm implementation strategies would greatly influence their use of research evidence.

DISCUSSION

Findings from this qualitative study contribute to our understanding of knowledge translation into public health policy and decision-making by (1) providing guidance for the development of future dissemination strategies by highlighting the need to focus on using multiple strategies to disseminate the findings of research evidence to public health decision-makers; and (2) providing direction for the content that should be included in both executive summaries and systematic reviews. The results of this study suggest that public health decision-makers in Ontario include research evidence, as one of many sources of information, in the program planning decision-making process. In addition, there is consensus across multiple decision-making levels that the term “evidence-based decision-making” implies a process whereby various sources of information, including research evidence, are sought to assist in developing a range of solutions to be decided upon.

This supports current thinking on the role of research evidence in EBDM. According to Gray (1997), research evidence should receive as much “weight” in decision-making as do other sources of information such as beliefs, values, skills, resources, legislation, protocols, and patient preferences, especially in situations where traditionally research evidence has received little or no attention compared to other sources of information. Decision-makers’ use and acceptance of multiple types of information, including research evidence, is an important finding for researchers who are striving to improve the uptake of study findings into policy and practice. Lomas and colleagues conclude that the producers of research perceive evidence to be knowledge that is explicit, systematic, and replicable, compared to decision-makers who are more likely to broadly define the type of information that is considered evidence to support decision-making to include local contextual data and the social and political values and beliefs of their stakeholder groups (Lomas et al. 2005).

This is the first time the defining of evidence-based practice has been reported from an actual target audience. It was surprising to observe such similarity in responses across the province, among different decision-making levels, and among health units with varying degrees of in-house research capacity. This was a positive finding to ascertain that generally, public health decision-makers in Ontario indicate that they include research evidence in the decision-making process for program planning purposes. Similar results have been reported by others with respect to incorporating research evidence into the policy development process (Champagne, 1999; Marriott et al. 2000; Donaldson et al. 2002; Lavis et al. 2005). Recent work from the United Kingdom (Nutley et al. 2002) also complements the

findings of this study with respect to defining evidence-based decision-making. In their model of evidence based practice, Nutley et al. suggest that EBDM is concerned with the way individuals use research evidence to make decisions and solve problems on a day-to-day and case-by-case basis. This concept is synonymous with the ideas expressed by decision-makers in Ontario and highlights the importance of fostering an environment whereby research evidence is valued by decision-makers, and where researchers strive to provide decision-makers with evidence that is relevant, timely, and easily incorporated into decision-making.

Program managers and senior decision-makers differed in their perceptions of when research evidence was used in the decision-making process. Directors and medical officers were more likely to initially consult the research evidence to identify possible options, otherwise known as instrumental and conceptual use, whereas some program managers reported that research evidence was predominantly utilized after the decision-making process was completed to justify their choice of programs or practice, also referred to as symbolic use. Similar findings were reported by Innvaer et al. (2002), who found that policy-makers selectively used research evidence to legitimate and sustain predetermined positions. Instrumental use directly and specifically influences decisions, while conceptual use refers to the cognitive effect of research on one’s understanding and attitude toward an issue or program (Champagne et al. 2004). Symbolic use refers to the use of research to justify pre-established positions and vested interests (Dickinson 2004). To support the process of evidence-based decision-making, efforts to move program managers toward instrumental use of research evidence will be necessary; a concept also suggested by Innvaer and colleagues.

At the time the data were collected for this study evidence-based decision-making was the commonly used term in this field. Recently a new term has emerged, evidence-informed decision-making, spearheaded by the CHSRF (2006). The change in the term to evidence-informed decision-making is an attempt to better represent the decision-making process as one that includes research evidence along with other sources of knowledge (CHSRF 2006), including experiential knowledge, societal expectations, and resources. The views expressed by Ontario public health decision-makers in 2001 are consistent with the current thinking about evidence-informed decision-making, and provide empirical data justifying the switch to a term that more appropriately reflects the process of decision-making in health care organizations.

All levels of decision-makers provided support for the production and dissemination of systematic reviews evaluating the effectiveness of public health interventions to assist in program planning. This conclusion is comparable

to other studies conducted with Ontario public health decision-makers (Ciliska et al. 1999; Dobbins et al. 2004). However, it is clear from this study that ongoing efforts are required to effectively transmit the key messages from systematic reviews using various communication channels and products. In addition to these content issues, additional efforts are needed to address issues such as relevance, implications for practice, and implementation strategies. Similar conclusions have been made by others in this field, calling for researchers to better understand the informational needs of their target audience (Lomas 1997; Landry et al. 2001a; Innvaer et al. 2002; Dobbins et al. 2004; Lavis et al. 2006).

Although the inclusion of some form of summary is not new, the idea of a researcher clearly articulating for whom and for what programs the review is most relevant, and how it addresses important and timely issues within a summary, is a change from the traditional abstract-type summary that usually accompanies such reviews. Decision-makers are looking to researchers to not only describe the facts (findings from research studies), but also to provide guidance and suggestions concerning implementation of the findings into program planning and practice. They are specifically interested in reading about what works and what doesn't work in which instances and for which populations. The consensus among respondents of the importance and value of an executive summary indicates the need for researchers to dedicate more time and effort in writing these summaries. These results are also corroborated by Innvaer (2002) and Lavis (2005) who found that personal contact between researchers and policy-makers, timeliness and relevance of research, and summaries with clear recommendations for practice, were the three most important facilitators of research evidence use among policy-makers. Careful thought should be given to the content of the summary, the key messages that can and should be highlighted, and the identification of potential practice and policy implications. To facilitate this process, researchers might require additional training to gain experience in writing summaries that will meet the needs of potential users of their research.

The findings of this study show that researchers need to continue to identify and take seriously the informational needs and preferences of their target audiences. This will ensure the conduct of relevant and timely research that decision-makers can directly apply to the decisions they are regularly faced with. Researchers also need to be aware of the most appropriate mechanisms for transmitting and translating research evidence to their various target audiences, realizing that different mechanisms may be necessary for different target audiences. From the decision-maker perspective, the ongoing transfer of relevant and timely research evidence to the decision-maker

will continue to facilitate incorporating evidence into the decision-making process, thereby solidifying a culture that values the consistent use of evidence in policy and program decision-making.

The number of respondents in this study was small, and there is likely more variability across all public health professionals in Ontario than was observed in this study. However, given the similarities in mandates and the structure of public health units across Ontario, it seems reasonable to expect that the views expressed by respondents in this study are similar to those held by others across the province. At a minimum one would expect that the general definition of evidence-based decision-making and needs and preferences reported by respondents would not differ significantly across Ontario public health decision-makers.

CONCLUSIONS

Consensus exists among Ontario public health decision-makers about the definition of evidence-based decision-making. This is a promising finding particularly because it shows the extent to which the use of research evidence is being integrated into public health decision-making, at least at the program planning level. However a need exists to continue to encourage program managers to use research evidence to make informed decisions once a thorough review of the evidence has occurred, as opposed to using research evidence to justify a decision that was made in the absence of reviewing the research evidence. Efforts are also needed to promote the ongoing use of research evidence in program planning, and to improve the ease with which public health decision-makers access systematic reviews, as well as ensure the relevance and applicability of the results to practice settings.

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