

INFORMATION TRANSFER:

WHAT DO DECISION-MAKERS WANT AND NEED

FROM RESEARCHERS?

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ABSTRACT

Purpose: The purpose of this study was to undertake a systematic assessment of the needs of decision-makers for research-based information, in order to understand both the content required and the format/methods by which that information should be presented.

Methods: This cross-sectional study included a telephone-administered survey that asked questions about current practices, research use, demographic information as well as preferences for receiving research information. Three types of organizations participated: Children's Treatment Centres of Ontario (CTCs); Ontario Community Care Access Centres (CCACs); and District Health Councils (DHCs). The analysis was done using descriptive statistics and analyses of variance (ANOVA) to describe and explore variations across the three types of programs.

Results: The participation rate was moderate with 92 respondents (70%) completing the survey. The highest perception of barriers to the use of research information was reported by the CCACs respondents, followed by CTCs and DHCs. Four sources of information transfer were consistently identified. These were websites, health-related research journals, electronic mail, and conferences and workshops. Preferred formats for receiving information were Executive Summaries, Abstracts, and original articles.

Conclusions: These findings suggest that it is especially important to target information about ideas or research findings in ways that are sensitive to the needs, resources and skills of the target audiences of that information. Generally it is important for people with research information to package that information in a variety of ways, each of which is sensitive to the specific needs and preferences of the recipients.

INTRODUCTION

The *CanChild* Centre for Childhood Disability Research at McMaster University was funded in 1989 as one of the Ontario Ministry of Health and Long-Term Care's original health system-linked research units. Since its inception the Centre has worked in partnership with all 19 of Ontario's Children's Treatment Centres (CTCs) across the province. The CTCs provide developmental therapies and family-based services to children with a variety of developmental disabilities and their families. The research programs at *CanChild* are all closely connected to the activities of the CTCs, with which the research takes place. In the past three years *CanChild* has also established a working relationship with the Community Care Access Centres (CCACs) of Ontario, which have become increasingly involved in the provision of services to children with disabilities.

In addition to its research programs, a major component of the *CanChild* mission is the Research Dissemination Program developed to enhance the incorporation of *CanChild's* and other's research evidence into policy and program decision-making.(1) The program has been centered specifically around *CanChild's* "Keeping Current" materials. These are brief 'bottom-line' systematic reviews of issues that have been assessed as being important 'hot topics' in the childhood disability field. Through Impact Surveys carried out by *CanChild* it has been shown that the Keeping Current format – making these ideas accessible in plain language, in a 3-5 page format that can be easily and quickly read – is one that decision-makers and clinicians appreciate and has influenced thinking about issues and their use of information (2).

In order for researchers to be effective communicators of their research findings, it is essential to understand the environmental context, the needs and the

preferences of the people whom it is important to influence with the results of research studies (3-5). The *CanChild* dissemination program was originally developed as a means of ‘getting the message out’, and was created somewhat intuitively, in response to a perception about the limitations of traditional journal-based scientific reporting. While some evaluation has been conducted on this program, CanChild investigators have never systematically studied what information, in what formats, people want and need in their roles as program managers, or decision- or policy-makers. The purpose of this study was to undertake a systematic assessment of the needs of decision-makers for research-based information, in order to understand both the content required and the format/methods by which that information should be presented.

BACKGROUND

Knowledge Translation and Exchange

There has been extensive research conducted in the health care field to identify barriers to knowledge transfer (6-13). While barriers vary among health practitioners, decision-makers and health care settings, consistent barriers across all settings include lack of available time, lack of access to current research literature, limited critical appraisal skills, excessive literature to review, work environments that do not support research utilization, lack of decision-making authority to implement research results, organizational decision-making processes that are not conducive to research utilization, resistance to change, and limited resources for implementation (6;9-15).

An in-depth synthesis of the evidence-based practice literature allows some generalizations to be made about the effectiveness of various KT strategies. First, traditional passive strategies used alone are relatively ineffective (16). Second, strategies that are more interactive and involve face-to-face contact show promising

results with a variety of target populations (15-19). Third, involvement of potential users in the research process has been shown to be associated with a higher degree of uptake (20). Fourth, when the results or ‘messages’ of research results are tailored to the specific needs of practitioners uptake is higher (21;22). One hypothesis generated from these findings is that a combination of all these strategies, resulting in an interactive, multi-component intervention that reinforces relationships between practitioners and researchers, and reaches potential users on multiple levels, may provide the most effective model for achieving evidence-based practice (20).

CanChild’s dissemination program is one such example of an innovative, interactive approach to promoting research utilization among health care decision-makers. It is timely to evaluate the impact of such a program so that knowledge gained from this strategy can be used to enhance the program as well as inform KT strategies in other fields.

Among the most consistent issues identified by those working in the childhood disability field, as well as across the health care continuum, is the need for information. It has been hypothesized that several important dimensions of knowledge translation are key elements for successful research transfer. The dissemination **source** must be perceived as competent, credible and trustworthy. The **content** must be perceived as relevant, usable, methodologically sound, and comprehensive to users. The **medium** must be accessible, user-friendly and clearly understandable. Finally, the **intended user** must perceive the relevance of the materials to their own needs, and understand the material in the context of their work (3;4;23-26).

Researchers have shown that knowledge translation and behavioural change need to occur at the level of the individual and the organization, paying attention to the policy maker’s internal agenda and using methods preferred by the recipients of

information (3;14;27;28). Recent knowledge translation research indicates that an individualized approach to knowledge transfer is most effective (4;29).

METHODS

Design

This cross-sectional study included a telephone-administered survey that asked questions about current practices, research use, demographic information as well as preferences for receiving research information. Respondents received an initial phone call to schedule a time to conduct the survey via telephone. The survey was comprised of 65 questions (Available from the author upon request) and took, on average 20-25 minutes to complete. Interviews were performed and data collected between January and April, 2002.

Respondents

For the purpose of exploring people's perspectives on knowledge translation three types of organizations were approached: Children's Treatment Centres of Ontario (CTCs); Ontario Community Care Access Centres (CCACs); and District Health Councils (DHCs). Both the CTCs and the CCACs provide hands-on services, the former exclusively to children with disabilities and their families, the latter to people across the age spectrum (with the majority of service provided to adults and seniors). A second important difference between these two groups of programs is the longstanding partnership between the CTCs and the research group (*CanChild*) undertaking this study, including a focused program of information dissemination between *CanChild* and the CTCs. The DHCs represent health interests at a regional level, are research-focused, and function in an advisory capacity to the Minister of Health. Their areas of responsibility include health matters in their geographical areas; resource distribution to address community needs; integration of health

services; and health planning needs. It was expected that the variations in functional roles and relationships among these three types of organizations would provide an opportunity to explore the extent to which these differences impacted on research uptake.

Survey

The survey, adapted from previously published research (32;33) was divided into five sections. (i) Questions that sought to understand the current practices and cultures of the organization were asked first in order to provide the investigators with a more complete picture of the attitudes and motives of the respondents. (ii) The next section asked several questions about access to research evidence and use by the individual and then moved on to focus on perceived barriers to the access and use of research evidence. (iii) The following section asked which formats and styles of research information were preferred and then asked questions regarding the perceived use of research by the organization and field of health providers as a whole. (iv) The succeeding questions asked about possible mitigating factors in transferring information from researchers to service providers and queried whether the current circumstances of that transfer were satisfactory. (v) A section that sought to synthesize current practices, culture, barriers and mitigating factors followed with a few questions regarding the demographic structure of the organization and region at the end.

Rather than relying exclusively on scores of individual items, groups of related items were scored and prorated according to the number of items in the group. Thus, for example, an 'Integrated Barrier Score' was derived from items 11-16 of the questionnaire, grouped into scale scores based on a three-point rating which combined ratings that appeared similar (e.g., 'not an issue' and 'minor issue' were scored as

‘generally not an issue’). Similarly, a ‘research culture receptivity score’ was derived by prorating items 45-50 of the questionnaire.

Analysis

The analysis was done with descriptive statistics that report the patterns observed with the survey materials. To explore variations across the three types of programs involved in this study, analyses of variance (ANOVAs) were used, applying Tukey’s HSD for post-hoc analyses where the ANOVA was significant at $p < 0.05$.

RESULTS

Overall the participation rate was moderate with 92 respondents (70%) completing the survey. 28 participants were from community-based CTCs (79%); 38 from CCACs (72%); and 26 DHCs (62%). The respondents varied in age, with the majority in the 40-59 year age group. The roles filled by the respondents were Executive Director/CEO $n=35$ (38%); Clinical worker $n=13$ (14.1%); ‘other’ Manager/Director $n=33$ (35.9%); and Senior Health Planner $n=11$ (12.0%). The educational backgrounds of the respondents included bachelor’s degrees $n=30$ (32.6%); master’s degree $n=53$ (57.6%); doctorate $n=1$ (1.1%); and MBA $n=8$ (8.7%). Respondents had been in their current roles for a mean of 5.5 (± 4.3) years, and in the field of childhood disability for a mean of 9.1 (± 9.3) years.

Evidence of the Validity of the Questionnaire

Responses to four survey questions provide evidence of construct (discriminant) validity of the approach used in this survey. In response to the question: “With respect to its ease of use, how would you rate the quality of research

information you have received recently?” there was a significant difference across the three groups of programs in favour of the CTCs. The overall mean score was 3.82 (scores ranged from 1-5 with higher scores representing more positive perceptions), with mean scale scores of 4.11 for CTCs, 3.88 for DHCs and 3.57 for the CCACs ($p<0.01$). This was taken to reflect the active and proven dissemination activities of research information by *CanChild* to the CTCs. In response to the statement: “My organization routinely actively looks for research information before making decisions”, on a scaled score of 1-5 the overall mean score was 3.83, with mean DHC responses averaging 4.54, the CTCs 3.81 and the CCACs 3.35 ($p<0.01$). This finding is thought to reflect the research nature of the DHCs and the ‘clinical’ focus of the other programs, in which research information informs, but is not essential to, all decisions taken at the program. Similarly in response to the statement: “My organization provides ongoing training in research methods and critical appraisal to staff”, on a scaled score of 1-5 the overall mean value was 2.75, with the DHC respondents reporting a mean of 3.50, the CTCs a mean of 2.63 and the CCACs a mean of 2.31 ($p<0.01$). Finally, in response to the statement: “Overall, my organization provides adequate resources (financial or personnel) to implement decisions that are based on scientific evidence” the overall mean value was 3.62, and there was once again a gradient in favour of the DHC respondents (mean 4.04) compared with the CTCs (mean 3.52) and the CCACs (mean 3.43) ($p=0.04$).

Barriers to Research Transfer

Table 1 reports the relative importance of the barriers to research transfer, as perceived by respondents. The aggregated ‘barriers’ score was made up of items 11-16 of the survey questionnaire. These items explored perceptions of the general availability of research information, time available for searching for information, the

organization's financial resources, availability of 'relevant' research information, limited training or experience in critical appraisal of research information, and resistance to change at the respondent's organization. The mean overall barrier score on a three-point scale was 1.72 (higher scores report perception of greater barriers). Note that age, type of program being surveyed and respondent's highest level of education were not significantly associated with perceptions about barriers.

The variation across the three program groups showed that the highest perception of barriers to the use of research information was reported by the CCAC respondents, with a barrier score of 1.88, whereas the CTCs reported a score of 1.65 and the DHCs a score of 1.59 ($p < 0.01$). When one inquires about the research 'culture' of the organization (questions 45-50), the mean value for the overall group was 3.8 on a five-point scale (where higher scores are associated with a 'better' research culture). Not surprisingly the DHCs, with their predominant focus on research activities, score highest (4.2 on a scale of 5) while the two service program groups reported similar scores of 3.68 and 3.65 (CCACs and CTCs, respectively) ($p < 0.01$).

Facilitators to Research Transfer

People were asked two sets of questions about their preferred ways of receiving research information. The first asked about each of several ways individually; the second asked people to rank their preferences. Table 2 reports respondents' feelings about several possible methods for receiving information. When the ranked methods of receipt of research information were tabulated and weighted in several ways, four sources of information transfer consistently were identified. These were websites, health-related research journals, electronic mail, and conferences and workshops. Questions about the preferred formats for receiving information showed

that people's first choices were for Executive Summaries (53.2%), Abstracts (29.3%) and original articles (17.4%). Second choices were for Abstracts (45.7%), original articles (28.2%) and Executive Summaries (26.1%). Interestingly there were several modest but significant correlations between a program being involved in research and other ways in which research was perceived to be impactful. These are outlined in Table 3.

Additional Observations

Respondents were asked to respond on a five-point scale to a number of questions about their perceptions of their organization's activities. Table 4 presents the questions and the patterns of scores to these questions. Generally, respondents indicated that their organizations routinely looked for research information for decision-making, had mechanisms in place to facilitate the flow of information into the organization, and had used research information to guide program planning decisions.

DISCUSSION

While the specific focus of this study addressed the information needs and preferences of those working in childhood disability, it is expected that the findings of this inquiry have broad applicability to the larger health care system. Discussions with decision-makers and policy makers over the past three years indicate that they are seeking the best evidence upon which to develop policies that will be supportive to families and children with special needs (34). It is of course recognized that research information is but one of many considerations in the formulation of policy.

The findings of this study are in many ways consistent with the emerging literature on knowledge transfer as reviewed in this report. However, in the context of the reports from the Canadian Health Services Research Foundation (CHSRF) and the US National Center for the Dissemination of Disability Research, this study explored most specifically the issues concerning the needs of the intended user and the medium of dissemination.

One opportunity available in this study was the possibility to seek the perspectives of people working in three types of organizations whose roles, responsibilities and functions differed considerably. This afforded the chance to explore both common features across settings and variations by type of organization. Thus it is not surprising that people working in the district health councils, which are research-focused systems, often expressed different perspectives from health service-oriented respondents in the CTCs and CCACs. Between the latter two groups of respondents there were several observed differences that likely reflect, among other factors, the close partnership between the CTCs and a childhood disability research partner responsible to provide up-to-date research information relevant to the needs and activities of the CTCs. No such partnership is available to the CCACs, whose role is one of broad service activities within a complex mandate.

For researchers this finding means that it becomes especially important to target information about ideas or research findings in ways that are sensitive to the needs, resources and skills of the target audiences of that information. Clearly a partnership between researchers and providers may help to promote dialogue and to enhance the understanding of each member of the partnership about the needs and capabilities of the other. More generally it is important for people with research

information to package that information in a variety of ways, each of which is sensitive to the specific needs and preferences of the recipients.

Particular formats reported to be preferred by the respondents in this study included the availability of material in short executive summaries or abstracts, while complete original articles were much less often near the top of people's preference lists. Conferences and workshops were nominated often as sources of information, though issues of cost and time demands for such resources were not explored in this study as possible barriers. This is also contrary to the findings from other studies in this field which indicate that conferences, in particular, are not effective ways of promoting knowledge transfer and uptake among health service decision-makers, policy-makers and practitioners (16;30;35).

One implication of this observation is the need for researchers to 'translate' findings into plain language, devoid of the jargon with which researchers traditionally communicate within the field. Similar findings were reported by Dobbins et al. (2004) (3), in a study of public health decision-makers. In this national study, public health decision-makers indicated that two page executive summaries that clearly communicated the issue from a local context, highlighted what the evidence was, and identified specific practice and policy implications for each evidence point, was what they needed most from public health researchers. A related challenge is to produce dissemination materials that are created expressly for the busy practitioner who has neither the time nor perhaps the training to extract messages buried within academic papers. A challenge to the busy academic researcher in a university setting is the reality that, to date, such materials have been less valued for promotion and tenure than peer-reviewed materials. One can only hope that as the imperative of knowledge

transfer and translation becomes more widely valued so too will these translation activities.

Finally, although there were a number of ways in which respondents' answers to the survey varied by type of organization in which they worked, it is interesting to note that the barriers to research transfer identified by participants did not vary by type of organization. Thus, factors such as the time and the availability of relevant research information appear to be systemic rather than specific to particular groups. That suggests that many of the findings of this study should have broad applicability to the field of knowledge translation and dissemination.

CONCLUSIONS

The results of this study are useful to multiple audiences including health service organizations focused on promoting evidence-based decision-making, policy makers, and health services researchers. While there were some significant differences between the three types of organizations assessed in this study, there was still considerable similarity with respect to the identification of barriers to research transfer as well as facilitators, and the types of activities organizations engage in to either promote the use of research evidence and/or integrate research findings into program planning. Awareness of these issues will be particularly important for health services researchers in the coming years as pressure to demonstrate the translation of research knowledge into policy and practice becomes more predominant. The results of this study should provide a starting point upon which researchers could build an interactive, collaborative knowledge transfer strategy, as well as foster more inclusive relationships among researchers and health care decision-makers and professionals.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

MD contributed to the conception and design of the study, development of the interview guide, interpretation of the data, and finalizing this manuscript. PR, the primary investigator, contributed to the study conception and design, finalized the data collection tools, oversaw data collection and analysis, and wrote the project report. NP contributed to the study design, development of data collection tools, interpretation of data, and provided feedback on the project report and manuscript drafts. ML contributed to the study conception and design, data interpretation, and provided feedback on the project report and manuscript drafts. AF was responsible for finalizing the data collection tools, participant recruitment, data collection and analysis, and reviewing the project report and manuscript drafts.

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Tables

Table 1: Relative Importance of Perceived Barriers

(Scored 1-3 [higher values=greater barrier])

Perceived Barrier	Mean Value (SD)
Lack of time...	2.45 (0.69)
Availability of relevant research information...	1.92 (0.81)
Limited financial resources...	1.68 (0.77)
Limited training or experience in evaluating research...	1.63 (0.68)
Availability of research information...	1.40 (0.61)
Resistance to change at the organization...	1.26 (0.51)

Table 2: Preferred Methods for Receiving Research Information

Source of Information	<i>Proportion Responding ‘Yes’</i>
Conferences/workshops	96.7
Short summaries of research information	95.7
Colleagues	91.3
Professional journals – your field	91.3
Health-related research journals	88.0
Websites	84.8
Newsletters	80.4
E-mail	79.3
Media releases	63.0
List-serve	18.7

Table 3: Correlates of a Program Being Involved in Research

Survey Questions Concerning Involvement in Research	Correlation with Perceived Impact of Research (significance)
Q. 52: Research information has influenced program or planning decisions made by my organization	0.248 (0.02)
Q. 53: Research information has provided justification for service, planning or program decisions made by my organization.	0.256 (0.018)
Q. 54: Research information has resulted in a decision by my organization to conduct program evaluations.	0.265 (0.015)
Q. 55: Research information has resulted in a decision to provide staff development training in my organization.	0.231 (0.034)

Table 4: Perceptions of the Role of Research Information in Programs

Survey Question	Mean (1-5)	SD
Q. 45: My organization routinely actively looks for research information before making decisions.	3.83	1.00
Q. 46: My organization provides ongoing training in research methods and critical appraisal to staff.	2.75	1.32
Q. 47: Mechanisms exist in my organization that facilitate the transfer of new information into the organization.	4.20	0.80
Q. 48: Overall my organization provides adequate resources (financial or personal) to implement decisions that are based on scientific evidence.	3.62	0.93
Q. 49: Regulations and legislation greatly impact on the decisions my organization makes about programs.	4.41	0.93
Q. 50: Most decisions made at my organization are made in collaboration with other health institutions or community agencies.	4.17	1.03
Q. 51: In my opinion my organization has an impact on the decisions made by local or provincial politicians.	3.29	1.20
Q. 52: Research information has influenced program or planning decisions at my organization.	4.04	0.75
Q. 53: Research information has provided justification for service, planning or program decisions made by my organization.	4.11	0.85
Q. 54: Research information has resulted in a decision by my organization to conduct (program) evaluations.	3.05	1.27
Q. 55: Research information has resulted in decisions to provide staff development training in my organization.	3.84	1.02