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**Knowledge translation and occupational therapy: A survey of Canadian university programs**

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Knowledge translation and occupational therapy: A survey of Canadian university programs

Abstract
While Canadian occupational therapy recognizes knowledge translation (KT) as essential to clinical interactions, there has been little attention paid to KT activity in education and research. The objective of this study was to identify the nature of KT activities in which Canadian occupational therapy faculty engage. An electronic survey was sent to faculty at 14 Canadian occupational therapy programs to explore the nature of KT activities, including research, education, strategies, evaluation, and barriers and facilitators. Descriptive statistics were used to analyze the data. Results show that faculty engage in a range of KT activities, with conferences and peer-reviewed publications being the most common. Faculty collaborate frequently with researchers at their institutions and favor both integrated and end-of-grant KT. Collaboration and personal interest were identified as facilitators; time and funding were seen as barriers. Understanding the profile of KT activity across universities creates opportunities for developing institutional and pan-Canadian plans to enhance KT training and capacity.

Keywords
barriers, education, evaluation, facilitators, knowledge translation strategies

Credentials Display
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Knowledge translation (KT) is a multifaceted and interactive process that seeks to bridge the gap between research and practice. While evidence-based practice has permeated the occupational therapy literature for almost two decades, KT is a more contemporary perspective that takes into consideration a broader systems-level look at how research is used in practice (Lencucha, Kothari, & Rouse, 2007; Metzler & Metz, 2010a). One of the most common definitions of KT comes from the Canadian Institutes of Health Research (CIHR), which defines KT as “the exchange, synthesis, and ethically-sound application of knowledge within a complex set of interactions among researchers and users—to accelerate the capture of the benefits of research for Canadians through improved health, more effective services and products, and a strengthened health care system” (CIHR, 2014, para. 2).

Many terms have been used to describe KT, including knowledge transfer, knowledge exchange, implementation research, and dissemination. These terms have similar meanings; however, KT is meant to convey the breadth of activities from the creation of new knowledge to the application of this knowledge in practice. KT activities are collaborative by nature and involve knowledge producers and users (including clients and their families) and “team members, administrators, policymakers, and the general public” (Law, Missiuna, & Pollock, 2008, p. 3). Effective KT necessitates a diversity of activities in order to build capacity in a system (Kinsella & Whiteford, 2009).

KT is important to address from an occupational therapy perspective for many reasons (Lencucha et al., 2007). First, there is a need to address the research-practice gap, and KT can provide important insights into the complexities of this relationship (Lencucha et al., 2007). Second, KT considers broader systems-level issues, which can have important implications for how occupational therapy integrates research into practice (Metzler & Metz, 2010b). Third, the collaborative nature of KT is congruent with both occupational therapists’ commitment to work with clients’ personal knowledge of their occupations and the natural collaboration with clients that shapes the KT process (Craik & Rappolt, 2003; Metzler & Metz, 2010b). And fourth, KT is considered an essential competency for occupational therapy practice (Law et al., 2008).

Although research on KT and related concepts has “mushroomed dramatically” in recent years, there is a paucity of research to place it in an occupational therapy context (Cramm & White, 2011, p. 24). Four literature reviews on KT in rehabilitation have been conducted (Jones, Roop, Phar, Albrecht, & Scott, 2014; Menon, Korner-Bitensky, Kastner, McKibbon, & Straus, 2009; Scott et al., 2012; Sudsawad, 2007); however, occupational therapy studies comprised a small portion of those reviewed and no systematic reviews have exclusively focused on occupational therapy.

The KT literature from occupational therapy researchers has emphasized facilitators and barriers for clinicians at the level of both the individual occupational therapist and the environment in which he or she works (Cramm, White, & Krupa, 2013; Johnson, 2005; Law et al., 2008; Metzler & Metz, 2010b). The occupational therapy literature has
also explored conceptual and theoretical aspects of KT (Colquhoun, Letts, Law, MacDermid, & Missiuna, 2010; Craik & Rappolt, 2003; Kinsella & Whiteford, 2009; Metzler & Metz, 2010a, 2010b), including occupational therapy-specific models of knowledge use (Craik & Rappolt, 2003) and the adaption of the Knowledge-to-Action process (Graham et al., 2006) in the context of occupational therapy practice (Metzler & Metz, 2010b). Other researchers have investigated KT in specific occupational therapy systems, including mental health (Moll & Clements, 2008) and stroke rehabilitation (Korner-Bitensky, Menon-Nair, Thomas, Boutin, & Arafah, 2007; Petzold et al., 2012).

The focus of KT research in occupational therapy has been almost entirely from the clinician perspective. What is unknown is the range and extent to which occupational therapy faculty are engaged in KT activities. With the increasing importance of KT in health care systems, it is imperative to identify the current KT activities in occupational therapy organizations. The first phase of the present research identified KT activities in Canadian leadership organizations, including university programs, regulatory programs, and professional organizations. The results of an environmental scan highlighted the fact that each type of organization had a unique KT profile. The study offered a broad exploration of KT activities, but it did not offer a detailed look at the KT activities being conducted by Canadian occupational therapy programs.

The purpose of this study was to explore the nature and extent of faculty engagement in KT activities in Canadian occupational therapy programs and to determine the facilitators and barriers that contributed to this engagement. Given the prominent role occupational therapy faculty have in both the creation and exchange of knowledge, understanding the profile of their KT activities will offer important insights into KT in the profession. While this present research is focused specifically on the Canadian context, we describe methods with which to examine KT activities and, ultimately, offer a starting point from which other countries can examine and compare their own KT activities (Donnelly et al., 2016).

Method

Design

The study used survey methodology to explore the nature of faculty engagement in KT activities in Canadian occupational therapy programs. An electronic survey was developed with FluidSurvey, an online survey system. Online surveys are advantageous because of easy access, simplicity, and minimal time commitment (Bethlehem & Biffignandi, 2011).

The survey development was informed by research previously conducted by the research team and available literature on KT in Canada. For the purposes of this study, KT activities refer to three distinct branches: research, educational activities, and strategies. Research refers to research specifically on or using KT, educational activities refers to education provided to prepare individuals to engage in KT, and strategies include specific techniques used to achieve KT. The survey included both close-ended and open-ended questions. The close-ended questions identified
demographic information including unit, rank, and tenure-track status. Data was also collected on evaluation methods of KT activities, along with facilitators and barriers to engagement in KT. The open-ended questions pertained to resources and opportunities that have helped the participants to develop capacity in KT activities, as well as priorities to advance the capacity of the Canadian occupational therapy profession to engage in KT activities.

Prior to dissemination, the survey was piloted with three occupational therapy researchers from distinct institutions in Canada. The pilot respondents included faculty members from Queen’s University, the University of Ottawa, and Dalhousie University. The research team revised the survey based on the feedback before a final version was released. Pilot testing increases reliability and validity in survey development, as it allows for “refinement of the instrument” and a reduction in potential measurement errors (Kimberlin & Winterstein, 2008, p. 2277). Ethical clearance was obtained from the Queen’s University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board (Reference #6012995). The participants gave informed consent before beginning the survey.

Sample

The participants in this study included core faculty members from the 14 accredited occupational therapy programs in Canada. Each university chair was sent a recruitment letter via e-mail describing the nature and purpose of the study. The program chairs were asked to disseminate the information to core faculty in their programs. After recruitment, three reminder e-mails were sent in the event that the original e-mail was missed or forgotten.

Eligible participants were required to be core faculty members in an occupational therapy program in Canada. Core faculty refers to faculty employed by a Canadian institution in an ongoing manner. Sessional or term-contract lecturers were excluded, as the nature of their work tends to be restricted to teaching.

Data Analysis

The FluidSurvey platform was used to generate reports from the given responses, detailing descriptive and thematic statistics. Descriptive statistics included frequencies and percentages, illustrating the nature of occupational therapy faculty engagement in KT activities, research related to KT, and barriers and facilitators to participation. For the open-ended questions, answers were scrutinized to determine common themes and trends. These themes related to common resources and opportunities expressed by the respondents, as well as the provision of priorities relating to advancing occupational therapists to engage in KT.

Results

Sample Characteristics

Forty-two faculty members from occupational therapy programs across Canada completed the survey. Given the recruitment strategy, the number of faculty who received the survey was not known; therefore, we were unable to
determine a response rate. The respondents had positions at a range of academic ranks, from assistant professor to full professor, and 81% were in tenure-track positions ($n = 34$). Only 5% of the interested respondents were ineligible to complete the survey as a result of having term-contract positions ($n = 2$). These individuals were not included in the 42 completed responses that were used for data analysis purposes.

**Descriptive Data**

Descriptive statistics were conducted to determine KT activity related to past, current, and future projects. The results show that faculty members are more likely to collaborate with other professionals at their institutions rather than with occupational therapy colleagues (see Figure 1).

![Figure 1. Occupational therapy faculty partners in KT activity.](image)

Sixty percent of the respondents indicated that they were engaged in both integrated KT and end-of-grant KT for past, current, and future projects. However, integrated KT received a greater number of responses for current and future projects ($n = 30; n = 24$) when compared to end-of-grant KT. End-of-grant KT speaks specifically to the “dissemination of findings generated from research once a project is completed, depending on the extent to which there are mature findings appropriate for dissemination,” most often involving the publication of findings in peer-reviewed journals and presenting at conferences and workshops (CIHR, 2010, p. ii). Conversely, integrated KT refers to collaboration between researchers and knowledge users occurring at every stage in the research process, resulting in co-production of findings (CIHR, 2010).
Across all project levels, the respondents stated that knowledge-practice gaps were the primary nature of their KT research. The respondents positioned KT in their educational activities through instructing a wide range of students. This was denoted as highest for entry-level occupational therapy and research graduate students across all project levels, with 46% and 41% of the respondents, respectively. Questions pertaining to facilitating workshops received the lowest response rates.

The KT strategies identified most often by faculty included peer-reviewed publications ($M = 89\%$), conferences ($M = 81\%$), educational materials ($M = 61\%$), other publications ($M = 50\%$), and interactive small group workshops ($M = 49\%$) (see Figure 2). Fewer than 50% of the respondents indicated that they engage in evaluation of their KT activities, specifying that practice change indicators ($M = 40\%$) and reach indicators ($M = 38\%$) were the most common methods used. For all project levels, the facilitators most identified by faculty were partnerships and collaborations ($M = 64\%$), personal interest ($M = 60\%$), and academic preparation ($M = 53\%$). The most significant barriers identified included time ($M = 46\%$), funding ($M = 43\%$), and mentorship ($M = 15\%$).

**Figure 2.** KT strategies used by occupational therapy faculty.

**Open-Ended Questions**

Three open-ended questions examined (a) resources and/or opportunities that have helped faculty to develop their own capacity in KT, (b) priorities that could advance the capacity of the occupational therapy profession in Canada to engage in KT activities, and (c) anything that may have been missed about KT that is relevant to
Canadian occupational therapy. In compiling the data from these open-ended questions, some common themes were identified through the use of a frequency count.

Diverse forms of collaboration were most commonly cited as being important resources and/or opportunities to develop personal KT capacity \((n = 42)\). The respondents stated that a number of individuals facilitated their development (see Table 1).

**Table 1**

*Collaborative Resources and Opportunities to Develop Personal KT Capacity*

<table>
<thead>
<tr>
<th>Resources/Opportunities</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentors</td>
<td>7</td>
</tr>
<tr>
<td>Students (graduate and doctoral)</td>
<td>7</td>
</tr>
<tr>
<td>Co-researchers/co-investigators</td>
<td>5</td>
</tr>
<tr>
<td>Colleagues</td>
<td>4</td>
</tr>
<tr>
<td>Community/clinical partners</td>
<td>2</td>
</tr>
<tr>
<td>Peer supports</td>
<td>2</td>
</tr>
<tr>
<td>Networks</td>
<td>2</td>
</tr>
<tr>
<td>Other health care clinicians</td>
<td>2</td>
</tr>
<tr>
<td>Communities of practice</td>
<td>1</td>
</tr>
<tr>
<td>Research assistants</td>
<td>1</td>
</tr>
<tr>
<td>Consultants</td>
<td>1</td>
</tr>
<tr>
<td>Individuals knowledgeable about KT</td>
<td>1</td>
</tr>
</tbody>
</table>

The respondents also indicated the importance of building their personal KT capacity through reading literature and articles \((n = 6)\). Grants and funding allocation were noted as important resources \((n = 5)\). Having opportunities to receive education was iterated by the respondents, which included doctoral studies \((n = 3)\), post-doctoral studies \((n = 1)\), and receiving training on teaching \((n = 1)\). The CIHR \((n = 3)\) and conferences \((n = 3)\) were also noted as resources.

By far, the priority most identified to advance the capacity of the occupational therapy profession in Canada to engage in KT activities was an increase in training, education, or qualifications \((n = 13)\). The respondents stated the necessity of “practical, relevant, [and] applied” KT education to enhance their engagement. Further, it was expressed that KT needs to be emphasized in occupational therapy program curricula in order to provide students with entry-to-practice competency in KT. Another commonly recognized priority was the provision of increased funding to engage in KT activities and research \((n = 9)\). Some of the respondents identified the need for occupational therapy as a profession to engage in collaborative KT activities and research \((n = 3)\).

To advance capacity, the respondents also specified the need for a focus on integration and collaboration through embedding occupational therapy researchers directly into clinical sites \((n = 2)\), interactive workshops that include clinicians \((n = 2)\), integrated KT approaches \((n = 1)\), development of national virtual infrastructure to support a community of practice \((n = 1)\), deliberate creation of networks of practice \((n = 1)\), implementation of national KT occupational therapy priorities \((n = 1)\), transdisciplinary collaboration \((n = 1)\), client/user collaboration \((n = 1)\), and collaboration among occupational therapy faculties \((n = 1)\).

A number of themes related to KT in Canadian occupational therapy were identified.
Partnerships and collaboration were emphasized, with participants stating that KT necessitates a collaborative team approach and that networks should include individuals outside of occupational therapy who specialize specifically in KT. Teaching as a KT strategy was also indicated as highly relevant ($n = 2$). The respondents noted the potential of having a “huge impact on many students per week,” and the importance of “not just getting people through their degree program.” It was iterated that, through enhancing the KT education in graduate and doctoral programs, students would be provided with specific KT skills and strategies that could be used to further their professional development and would impact them for the duration of their careers. The importance of cultural adaptation and validation was also expressed ($n = 2$), with one respondent indicating that groups might be wary of producing materials in two languages, “due to costs and operational constraints.” Warning was also heeded regarding the novelty and “buzz” of KT in relation to occupational therapy practice. This participant relayed that, for many areas in the realm of occupational therapy, “knowledge has yet to be generated or created prior to the translation.” Finally, one respondent spoke to occupational therapists being well aligned with the principles of KT, and that they “should be stepping up and above others” who have not had the same type of training ($n = 1$).

**Discussion**

The findings of this study provide insight into the nature of KT research, activities, and strategies in which occupational therapy faculty in Canada engage. The results of the present survey indicate a significant reliance on publications (e.g., peer-reviewed, from outside the profession, etc.) and events (e.g., conferences, workshops, etc.) as primary KT strategies, similar to what our earlier research has identified (Donnelly et al., 2016) as well as others outside of the occupational therapy profession (Bowen & Graham, 2013; Grimshaw, Eccles, Lavis, Hill, & Squires, 2012).

In addition, the respondents iterated the importance of educational materials and meetings, which is consistent with systematic reviews on KT strategies from allied health and rehabilitation research domains (Jones et al., 2014; Scott et al., 2012). Scott et al. (2012) warn of this overreliance on educational materials as primary KT activities, suggesting “the effects of education on behaviour may be limited” (p. 85). This speaks to the relevance, importance, and timeliness of developing a strategic plan that emphasizes collaborative approaches that reach above and beyond the individual (e.g., researcher, clinician, knowledge users, etc.) and, thus, make a direct impact at an institutional, organizational, or national level (Scott et al., 2012).

The successful implementation of collaborative, large-scale approaches to KT activities has been demonstrated in allied health literature, yielding research production and dissemination that is a “dynamic, contextualized, and active process” (Cheek, Corlis, & Radoslovich, 2009, p. 233). Cheek, Corlis, and Radoslovich (2009) discuss a community of research and
practice established between an aged care facility and educational institution in Australia. The merging of these entities resulted in clinicians and researchers being able to conduct highly focused and practical research, generating results that had an immediate impact on knowledge users in the facility (Cheek et al., 2009). Targeting KT in this manner necessitates the formation of partnerships and collaborative relationships through the inclusion and participation of diverse members, such as researchers, clinicians, knowledge users, decision makers, and others. This has been consistently demonstrated and iterated as an effective method of engaging in KT research and activity in a range of health care professions and disciplines, which includes nursing, medicine, primary care, and rehabilitation (Bowen & Graham, 2013; Cheek et al., 2009; Cornelissen, Mitton, & Sheps, 2011; Légaré et al., 2011; Mitchell, Pirkis, Hall, & Haas, 2009).

With health care professions shifting toward larger-scale KT strategic plans, the results of this survey illustrate the necessity of developing national KT capacity for the occupational therapy profession. At both a global and Canadian level, the Mental Health Innovation Network (MHIN) and the Mental Health Commission of Canada (MHCC) have developed their own strategic plans to improve the KT process and subject greater influence on decision makers. Fundamental to their plans are the development of hubs in various locations across the country and world, building web-based knowledge repositories, placing significant emphasis on social media, implementing webinar series, and creating networks of professionals, all with the hope of building the KT capacity of members in their respective communities (MHCC, 2014; MHIN, 2014). Interim reports from the MHCC indicate the breadth of connections and partnerships that have been formed, which has resulted in better informed practice for those working in the field (MHCC, 2014).

The respondents in the present study did note the importance of collaboration in order to advance KT capacity, suggesting embedding researchers in clinical sites, virtual national infrastructure, and the implementation of national KT priorities. However, there was an apparent level of uncertainty as to what is actually expected from regulatory and professional bodies. With an increasing evidence-base that demonstrates the relevance of the profession, it is becoming increasingly important to develop reciprocal knowledge exchange and partnerships between research and clinical practice in order to directly and positively impact the quality of care provision (Cheek et al., 2009; Colquhoun et al., 2010).

Kielhofner (2005), a pioneer in the occupational therapy profession, spoke to the importance of developing scholarships of practice. His work relayed the significance of involving multiple contexts, collaboration, and the inclusion of users in creating knowledge in order to advance professional capacity. These ideals are what many in the profession would consider to be fundamental to occupational therapy practice. Yet, despite positive efforts to engage in KT activities through attending various events and workshops, there are
significant opportunities for growth and further development. The unique consideration of the environment should put occupational therapy researchers at an advantage when considering optimal contexts for where KT should occur. Further, the emphasis we place on client-centered practice should also illustrate the reciprocal process of KT that is inherent in the client-clinician relationship (Colquhoun et al., 2010; Law et al., 2008). Despite the growing evidence to support occupational therapy interventions, Kielhofner’s work is still relevant and applicable to current professional practice, as there continues to be a disconnect between academia and clinical work (Taylor, 2011). Without targeted plans and with a lack of clarity at a national level, occupational therapists and the occupational therapy profession will continue to struggle in advancing KT capacity.

With the lack of clear expectations regarding what KT activity should entail, potential areas of growth can be identified. The results of the present survey indicate the need to develop and enhance KT capacity in the profession, which needs to come from the highest levels of leadership organizations. Through the convergence of KT priorities of educational institutions and professional associations, for example, strategic plans can be developed to bolster and strengthen engagement in KT activities from faculty and practitioners. Efforts can be streamlined through outlining a comprehensive set of KT activities that would be expected from members of the profession. This can eventually be extended further, toward an international context, leading to better coordination and services worldwide in occupational therapy (Graham & Tetroe, 2007). KT agendas allow for professions to avoid duplication in research and for the creation and testing of a multitude of interventions. This has been shown to result in clinicians being enabled to engage in enhanced practice and for researchers to select practical and highly focused research ventures (Graham & Tetroe, 2007). In turn, occupational therapists can be in a position to influence and shape policy development, resulting in the advancement of our knowledge and evidence base that reaches beyond the confines of our small profession. This will situate occupational therapy as a pertinent force in the health care system that positively impacts the health of the general population (Cramm et al., 2013). Through a larger-scale endeavor to enhance KT capacity, training in occupational therapy programs will be strengthened, clinicians will be better informed, and clients will be better served in practice.

**Limitations**

It is vital to consider key limitations to this study. The respondents who completed the survey likely recognized and prioritized KT as relevant to their professional practice. Others also expressed genuine interest in the subject matter. Therefore, findings may represent a higher index of KT activity than the broader potential sample.

**Conclusion**

Occupational therapy faculty engagement in KT activities includes diverse partners and strategies. Information collected in the present study indicates current practices, potential barriers
and facilitators, and areas of growth. Through the compilation of distinct themes, it is hoped that opportunities arise for occupational therapy faculty to develop institutional, national, and international plans to foster participation in KT research, activities, and strategies in occupational therapy. Ultimately, further KT training and capacity building in the profession is needed to develop competent entry-to-practice clinicians and strengthen relationships between the academic and clinical communities.

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