

From knowledge transfer to knowledge translation: Applying research to practice

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There is a new buzz word that is frequently mentioned related to integrating research and practice: KT. While this term is getting lots of air-time, it is not clear that everyone is talking about the same thing. KT has been used to describe two closely related ideas: *knowledge transfer* and *knowledge translation*.

As the need for accountability increases, occupational therapists are challenged to deliver evidence-based practice. This involves clinicians using research evidence, along with clinical knowledge and reasoning, to inform practice¹. For research uptake to occur, the researcher provides knowledge to the user who implements the knowledge. The knowledge provision step is integral; the terms knowledge transfer and knowledge translation both acknowledge the complexities and challenges of this transmission between the researcher and the user.

What is knowledge transfer?

Between the 1950s and the 1990s, the literature related to the flow of research findings from researcher to user generally discussed knowledge transfer². This term describes the one-way flow of knowledge from researchers to potential users including policy makers, clinicians and clients; it is also considered the responsibility of researchers³. The methods of knowledge transfer can be active or passive, depending on the transfer goals⁴. It has been well established that the more participatory and targeted the transfer activity, the more likely it is to result in application^{5,6}.

Lomas⁷ categorized three types of transfer activities which researchers may use. These range from passive to active and include:

Diffusion is designed to promote awareness. Knowledge is made available via journals, newsletters, web sites, and mass media but is not directed toward a specific target. The goal is simply to “get the information out there”.

Dissemination involves using intentional activities to share research findings strategically with particular stakeholders, such as by mailing results to intended audiences and

holding workshops and conferences to share findings. The goal is both to create awareness and change attitudes.

Implementation involves the most active transfer activities with the goal of creating a behaviour change. These strategies include efforts to overcome barriers to implementing the research information, through activities such as face-to-face contacts with experts and establishing audit and reminder systems to encourage users to change their behaviour or practice in light of research findings.

Knowledge transfer methods and actions are dependent upon who is initiating the research activities⁸. Lavis et al.⁹ identified the following three models of knowledge transfer based on the degree to which the transfer is researcher-directed.

Research-push: This describes research which is initiated by, conducted by and transferred by the researcher. This satisfies the researcher’s curiosity; it is then the responsibility of the researcher to get the information to others who share this interest.

User-pull: This occurs when the decision maker or group commissions research with a predetermined use in mind.

Exchange: This is the most complex model in which researchers and decision-makers work together to build research questions relevant to their mutual needs and skills.

Effectiveness of knowledge transfer

There are concerns regarding limited knowledge uptake. This is often attributed to the reality that researchers, policy makers, and clinicians inhabit “different worlds”^{10,11}. This concept is known as the “two-communities” theory¹². In other words, simply receiving knowledge does not necessarily lead to using it, especially if the parties do not share the same focus, language, culture or research agenda^{13,14}.

Reading printed educational materials and attending didactic educational meetings have generally not proven to be effective in changing behaviour or professional practice¹⁵. More specifically, Craik and Rappolt¹⁶ noted that the process of knowledge transfer from evidence to practice within the rehabilitation professions is not well understood. Based on

their qualitative study, suggestions to improve application of research evidence in occupational therapy practice included using structured reflection and case application¹⁷. Law and Baum¹⁸ have noted that clinicians can encounter barriers to knowledge uptake at both the system and individual level. At the system level, significant barriers may include a lack of administrative support and no time to read and integrate research information into practice^{19,20}. At an individual level, clinicians may have limited skills in interpretation and application of research findings^{21,22}. These barriers can create a gap between researchers and clinicians. Even when clinicians have the time to read and the skills to analyze research, whether they can change their practice depend on economic, administrative and cultural barriers within the organization or community²³.

Bringing researchers and clinicians together

Attention has turned to bridging the cultural gap and moving toward more effective knowledge transfer. Suggestions to researchers have been put forward to promote knowledge uptake. Maclean et al.²⁴, building on the work of Lavis et al.²⁵, outlined the following components and strategies which should be considered by researchers to promote the uptake of their findings:

1. The message

Rather than data, suggestions regarding application of research are most helpful. For clinicians, this may include evidence-based guidelines.

2. The target audience

The message's target audiences must be clearly identified and the specifics of the knowledge transfer strategy should reflect their needs. The same message regarding best practice will not work for clients, therapists and policymakers alike. Instead, design specific messages for each audience's needs.

3. The messenger

The credibility of the messenger can be as important as the message itself. Rappolt and Tassone²⁶ indicated that occupational therapists rely heavily on peers as educational resources.

4. The knowledge transfer process and infrastructure

While printed materials such as journal articles are used most often, the most effective means of knowledge transfer is personal interaction. These interactions may include writing via

email, listservs, blogs, discussion rooms, interest group meetings and round table discussions.

5. Evaluation

Knowledge transfer performance measures should be appropriate to the target audience and the objectives. For clinicians, the objective may be to change practice to match the evidence and improve client outcomes; for policymakers, the objective may be informed debate.

At the end of the day, no matter how well-packaged the information is, knowledge transfer will always be limited in that the delivery is top-down and researcher-centric²⁷. If the information does not address the questions that interest the user, it is not useful.

Knowledge translation

The term *knowledge translation* has emerged more recently to describe a broader concept which includes all the steps between the creation of knowledge and its application. Rather than beginning at the point at which a message is to be delivered (as knowledge transfer often does), knowledge translation describes an active, multi-directional flow of information which begins at project inception. Partnerships, which are integral in knowledge translation, are encouraged among researchers (within and across disciplines), policy makers and managers, health care providers, and health care users²⁸. Interactions and exchanges occur before, during, and after the project with the goal of developing research questions, setting a research agenda, and then determining actions²⁹. Knowledge translation, while set in the practice of health care, draws on many disciplines to help close the gap between evidence and practice. This may include informatics, social and educational psychology, organizational theory, and patient and public education³⁰.

The Canadian Institutes of Health Research (CIHR) has put forward the following definition of knowledge translation:

Knowledge translation is the exchange, synthesis and ethically-sound application of knowledge – within a complex system 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 system³¹.

The focus of the CIHR knowledge translation model is the knowledge cycle symbolizing the process of formulating research questions, conducting research, strategically publishing and disseminating research, and then generating new, context-specific knowledge by applying research findings in

different settings. This new knowledge in turn feeds future research questions – and the cycle continues³².

Knowledge translation draws on some key models and methods of knowledge transfer, but it describes a broader and more integrated approach. When describing an exchange, it is useful to determine whether you are discussing a one-way transfer of information (knowledge transfer) or a multi-directional transfer of information (knowledge translation).

There is increasingly more interest in enhancing opportunities for knowledge translation, representing a major shift in Canadian funding agencies' health priorities. Formerly, research was often funded with only minimal attention to the process of disseminating information; current funding emphasizes developing dynamic mechanisms that engage players whose decision-making will be informed by the research³³. Research agencies and educational facilities are also taking the lead by offering and sponsoring seminars and courses on the theories, guidelines, and tools of knowledge translation.

Although knowledge translation is the term used within the health disciplines, others use a different vocabulary to meet their own needs. For example, organizational literature refers to *knowledge management* when describing the way knowledge develops as it flows through different contexts^{34,35}. *Knowledge mobilization* is the term that social sciences and humanities use to describe this process³⁶. Words are powerful and these terms reflect the nuances of activity and thinking within the specific disciplines.

Implications for occupational therapy

Clinicians, researchers, academic and fieldwork educators, clinical practice leaders and policy makers all need to be aware of the concepts of knowledge transfer and translation. Occupational therapists have integral skills and practice insights to help set research agendas. Using knowledge transfer principles is integral to our educational endeavours – with our clients, students, colleagues and the public. Being grounded both in knowledge transfer concepts and the knowledge translation process will lead to more satisfying and effective exchanges and ultimately enhance therapists' translation of evidence into practice. Attention to this process will also promote lively discussion among occupational therapists and their stakeholders.

It's not easy, though. Putting new knowledge into practice is a complex process. It depends on both the occupational therapists' knowledge and ability as well as supportive organizational factors to put it into practice. Embracing the

two-way knowledge translation process requires extensive consultation and partnerships. While these strategies are in keeping with client-centred practice, they may require occupational therapists to move out of familiar contexts.

Lots of people are talking about KT — knowledge transfer and knowledge translation — and for good reasons: these need to become integral concepts in occupational therapy practice and important strategies in our goal of providing client-centred, evidence-based practice. Let's keep talking.

About the author

Leslie Stratton Johnson, BHSc(OT) resides in Winnipeg, Manitoba where she wears several hats as a registered occupational therapist: community clinician, part-time faculty member in the Occupational Therapy Department, School of Medical Rehabilitation, and graduate student. She is interested in the process of linking research and day-to-day occupational therapy practice and can be reached at johnsonl@cc.umanitoba.ca

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Suggestions for further reading

Institute for Work and Health: Knowledge Translation and Exchange available at:

<http://www.iwh.on.ca/kte/kte.php>

Cochrane Musculoskeletal Group: Knowledge Translation available at:

<http://www.cochranemsk.org/professional/knowledge/default.asp?s=1>