Knowledge Translation Approaches in Occupational Therapy: A Scoping Review

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Abstract

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Keywords

Occupational therapy, knowledge translation, practice change, theory, scoping review

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ABSTRACT
A gap exists between what is known in occupational therapy and how occupational therapists practice. Knowledge translation approaches have been designed to bridge the gap between research and practice. Currently there is limited literature exploring the knowledge translation approaches being implemented specifically within occupational therapy. Therefore, a scoping review was completed to provide an overview of the existing literature on knowledge translation approaches in occupational therapy. Three electronic databases were searched. All peer-reviewed quantitative and qualitative articles which met the inclusion criteria were reviewed. A data extraction table aided the analysis and synthesis of the literature. The initial search returned 565 articles, of which 59 were selected based on the inclusion criteria. Comprehensive screening of the 59 articles resulted in 16 peer-reviewed articles being included in the review. A range of knowledge translation methods have been used in occupational therapy including face-to-face education sessions, online resources, and clinical audits of documentation with feedback to the therapists. A small number of studies used a knowledge translation framework to guide the knowledge translation approach. Findings from this study highlighted that knowledge translation approaches are useful for overcoming challenges and changing practice. In particular, a knowledge translation framework may be useful to guide the design and implementation of a knowledge translation initiative. Although there were a number of knowledge transfer strategies used in the studies, face to face education was used most often. However, a combination of transfer strategies had the most lasting impact on practice change. Including participants' perspectives in the planning, delivery, and evaluation was beneficial. More research is needed to identify how the use of a theoretical framework might support positive outcomes for knowledge translation.

Internationally, a gap exists between the available research evidence and the practice of health professionals (Scott et al., 2012; Worum et al., 2019). Previous research has revealed it takes 17 years for research findings to be sustainably translated into allied health professionals' practice following publication (Committee on Quality of Health Care, 2001). Bennett (2017) highlighted that this is a concern in occupational therapy, where a significant gap exists between "what we know from research and what we do in [occupational therapy] practice" (p. 6). Occupational therapists are urged to be evidence-based in their practice to ensure the highest quality of care is provided to clients (Hoffmann et al., 2017). Occupational therapists find it challenging to integrate evidence into their practice due to a number of barriers including lack of administration support, limited time, and lack of research skills and confidence (Thomas & Law, 2013). Not using evidence to inform practice may impact on the quality of services that occupational therapists provide to their clients (Caldwell et al., 2008).

Changing practice is a complex and time consuming process (Straus et al., 2009). However, knowledge translation approaches have been found to be effective in reducing the gap between research and practice and changing the practice of allied health clinicians as documented in a recent systematic review completed by Scott et al. in Canada (2012). Knowledge translation has been defined as a "dynamic and iterative process that includes the synthesis, dissemination, exchange and ethically sound application of knowledge to improve health, provide more effective health services and products, and strengthen the health care system" (Canadian Institutes of Health Research, 2014). The development and implementation of knowledge translation approaches works to minimize the disparity between available research and the practice of clinicians (Scott et al., 2012).

In alignment with Straus et al. (2013), knowledge translation approaches refer to the process of translating knowledge into practice, encapsulating the use of evidence-based frameworks to guide the effort. Approaches must be continually evaluated and modified to meet the needs of the participants throughout the entire knowledge translation process (Nilsen, 2015). Many different models and frameworks of knowledge translation have been developed to promote the facilitation and planning of knowledge translation approaches (Graham et al., 2006; Graham & Logan, 2004; Kitson et al.,1998; Rogers, 2003). There is an increasing interest in how the use of models and frameworks guide the implementation of knowledge translation approaches that increase the likelihood of the success of the translation into practice (Nilsen, 2015).

Transfer strategies are the methods used in the knowledge translation approach, for example, face-to-face education sessions, online resources or clinical audits (Logan & Graham, 1998). Multiple transfer strategies have been employed in knowledge translation with allied health professions, with the most common being face-to-face education sessions (Jones et al., 2015; Scott et al., 2012). Other frequently used transfer strategies include webpages as a repository of information, text message reminders, and knowledge brokers, people who support the facilitation and management of knowledge translation (Bornbaum et al., 2015; Scott et al., 2012). A systematic review of knowledge translation in allied health highlighted that no one

transfer strategy was shown to be more effective than another (Scott et al., 2012). Two reviews in allied health have found that the use of a combination of multiple transfer strategies in a knowledge translation approach was more effective than those that used a single strategy (Al Zoubi et al., 2018; Menon et al., 2009). A recent systematic review showed that there was some evidence that multi-component knowledge translation approaches had a statistically significant positive effect on occupational therapists (Jones et al., 2015). It is evident that the most effective knowledge translation approaches use transfer strategies that involve active participation of participants (Scott et al., 2012). Successful knowledge translation approaches are targeted towards the learning needs, barriers, and facilitators experienced by the participants (Straus et al., 2013).

Law et al. (2008) argued that knowledge translation is a core competency of practicing as an occupational therapist. Several reviews exist exploring the use of knowledge translation with allied health professionals and rehabilitation therapists, including occupational therapists (Al Zoubi et al., 2018; Jones et al., 2015; Menon et al., 2009; Scott et al., 2012). However, there is no review which specifically explores knowledge translation approaches with occupational therapists. As a profession, occupational therapy experiences profession-specific practice challenges including the implementation of occupation-centered practice. Therefore, it is imperative that a review of knowledge translation in occupational therapy is completed to guide future endeavors to support occupational therapists to implement knowledge and theory in practice. This study aims to reduce this gap in the research by completing a scoping review on knowledge translation approaches implemented with occupational therapists.

Methodology

Design
A scoping review was chosen to map the available literature and gain an understanding of the scope and size of available research to answer the research question (Arksey & O'Malley, 2005). The scoping review framework developed by Arksey and O'Malley (2005) guided this article. This framework includes five steps: identifying the research question, identifying relevant studies, study selection, charting the data, and collating, summarizing and reporting the results (Arksey & O'Malley, 2005).

Identifying the Research Question
The first step in this process was to identify the research question to be answered. The research question was developed after an initial search of the literature and discussion by the research team. Arksey and O'Malley (2005) suggested that the research question should define the parameters of the review. The research question that this study aimed to answer was: "what is known from the existing literature about knowledge translation approaches when implementing a practice change in a clinical occupational therapy setting?" For the purposes of this study, a practice change was defined as a change in occupational therapists' knowledge, skills, attitudes or actual practice.

Identifying Relevant Studies

As there are many different terms used to describe knowledge translation approaches, a search strategy was developed after reviewing knowledge translation literature to identify common search terms used, coupled with consulting a librarian with expertise in health literature. Therefore, when developing the search strategy, the research team endeavored to include all possible terms used to describe knowledge translation. The search strategy was agreed upon by the research team. The search terms included occupational therap* AND ("knowledge trans*" or "translation of knowledge" or "knowledge dissemination" or "dissemination of knowledge" or "knowledge exchange" or "knowledge integration" or "integration of knowledge" or "research utilization" or "research utilization" or "research use" or "use of research" or "using research" or "research diffusion" or "research dissemination" or "dissemination of research" or "implementation science").

Study Selection

Inclusion and exclusion criteria were developed through discussion by the research team after an initial search of the literature. The inclusion and exclusion criteria were developed to ensure the research question could be answered. Articles were included if they met the following criteria: (1) full-text, peer-reviewed studies published in English; (2) included at least one occupational therapist as a participant, even if the participants were a combination of different health professionals or included non-professionals; and (3) explicit statement in the methodology and/or results that a knowledge translation approach was used. Studies with occupational therapists as part of a multi-disciplinary team were included as the aim of this study was to explore the use of knowledge translation in occupational therapy. Because the aim of the study was not to generalize findings to all occupational therapists, the percentage of the sample made up by occupational therapists would not impact the results.

Articles were excluded if they: (1) did not examine practice within a clinical caseload; or (2) were opinion pieces or grey literature. No methodological designs were excluded. As outlined in Arksey and O'Malley's framework (2005), the search was completed in several online databases to reduce the risk of the search not retrieving pertinent studies for the review. Electronic searches were completed in three databases in March 2018 using the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, and Embase. Further reviewing of the reference lists of the included studies and hand searching were also completed to ensure all relevant articles were found (Arksey & O'Malley, 2005).

Law et al. (2008) stated that knowledge translation is an emerging area of research in allied health. Therefore, there was no restriction placed on the publication date of the articles. This review aimed to add to the literature about knowledge translation approaches in occupational therapy, and so it was important that all articles discussing knowledge translation and occupational therapy were included to ensure the full breadth of literature available was captured to answer the research question.

After the search was completed, all articles were imported into Endnote where duplicates were removed. The articles and eligibility criteria were then uploaded into Covidence, an online program which is used to screen studies and extract data for literature reviews (Veritas Health Innovation, 2017). In alignment with Arksey and O'Malley's framework (2005), two reviewers (the first and second authors) independently screened all articles using a two-step process; title and abstract screening, followed by full text screening against the inclusion and exclusion criteria. Throughout this process, the research team as a whole met regularly to discuss any challenges, complexities or uncertainties during the study selection process, as recommended by Levac et al. (2010). Importantly, the research team all had a background in occupational therapy, and four members had experience completing previous scoping reviews.

Charting the Data
The first author read each of the full text articles that were included in the scoping review and extracted data from the studies. The extracted data was recorded using an Excel spreadsheet under headings suggested by Arksey and O'Malley (2005) in addition to other headings related to characteristics of the article and key themes within the dataset. As new themes and key characteristics emerged, the first author re-read all articles to ensure data was extracted for all key themes. The key characteristics and themes in the data included aims, innovation for knowledge translation, education format, outcome measures, participants' evaluation of the knowledge translation approach and impact of the knowledge translation approach as seen in Table 1 (see Apendix).

The research team collaborated in the development of this approach to ensure all key themes and issues were identified. The first author extracted data from all the studies. The second author confirmed this by independently completing data extraction of five of the articles and comparing these to the first author's extraction. This process contributed to strengthening the rigor of the study by ensuring the extraction and analysis were accurate (Liamputtong, 2013; Miles & Huberman, 1994). Both authors extracted data in a similar process, agreed upon key themes, and the data that was extracted, therefore no changes were made to the process.

Collating, Summarizing, and Reporting the Results/Data Analysis
Levac et al. (2010) suggested that scoping studies should include a combination of numerical and thematic analysis. Descriptive numerical analysis was undertaken in an Excel spreadsheet for publication year, type of methodology, the location of the study, the journal, and the practice setting. Thematic data analysis was completed to understand the qualitative content of the data. Data extracted into the Excel tables was analyzed and characteristics of the data were clustered in order to identify initial themes. These themes were discussed and refined with the research team before the themes were finalized.

Results

Searching the three databases returned 876 articles. 311 duplicates were removed leaving 565 articles. The titles and abstracts of the 565 articles were reviewed, yielding 59 articles which were comprehensively screened by reading the full text articles. From this, 16 articles were included in the study. The reference lists of included studies were searched but no further articles were identified that met the inclusion criteria. A PRISMA diagram (see Figure 1) shows the selection process for articles (Moher et al., 2009).
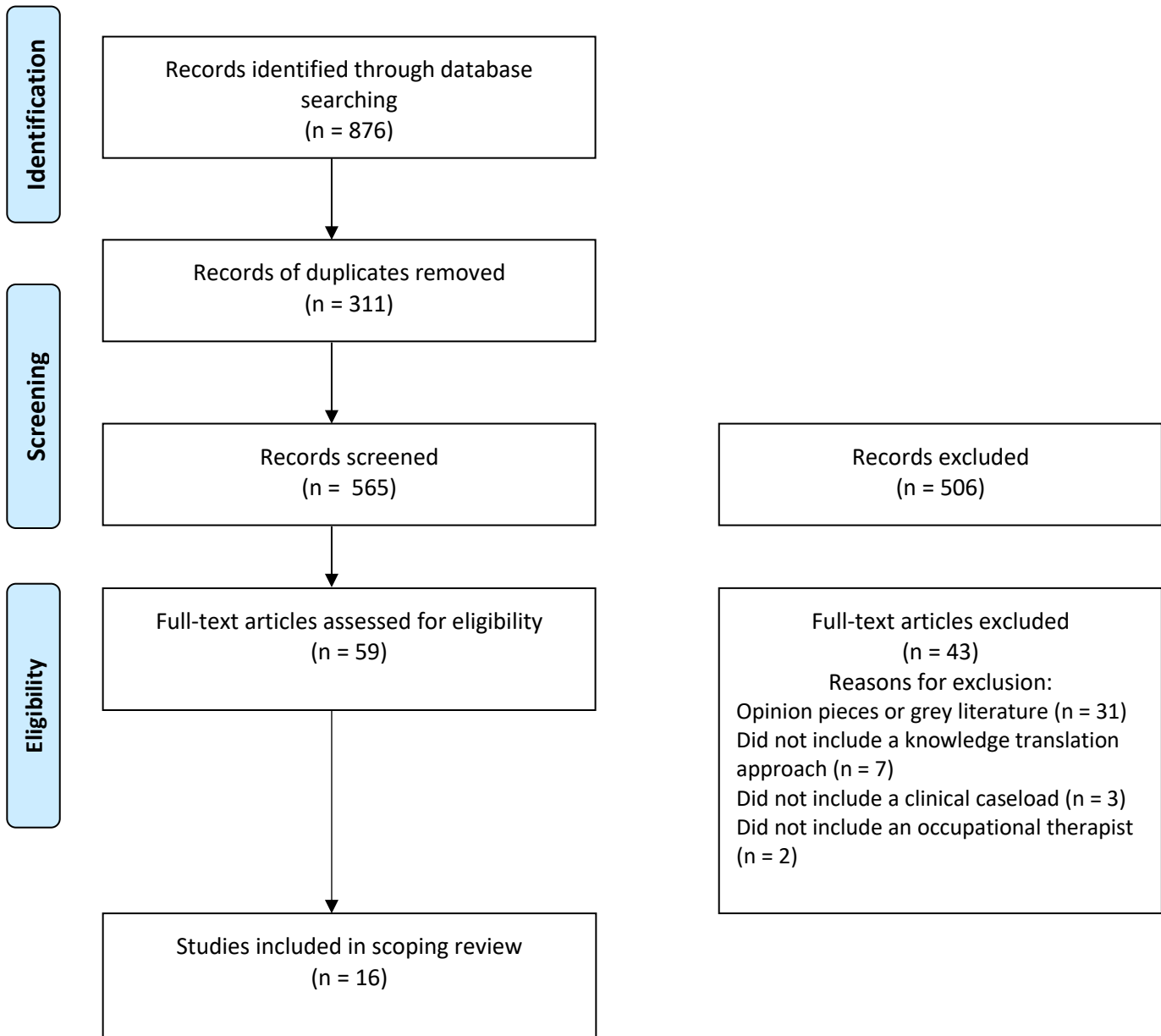

Figure 1. PRISMA diagram.

Descriptive Numerical Summary

All of the 16 articles were published between 2009 and 2017, with the majority of the articles (n = 13) published from 2012 onwards. Nine studies were conducted in Canada, with others from America, Ethiopia, South Korea, Sweden, Denmark, and the Netherlands. The articles were published across 14 journals, including the *British Journal of Occupational Therapy* and the *American Journal of Occupational Therapy* (see Table 2). There were seven studies that used mixed methods design, five used qualitative methods, and four used quantitative methods. Knowledge translation approaches were implemented in a number of clinical settings including stroke rehabilitation (n = 7), pediatrics (n = 4), dementia care (n = 2), rehabilitation (n = 2), and obesity care (n = 1).

Table 2

Journal of Publication

Journal of publication	N
British Journal of Occupational Therapy	2
American Journal of Occupational Therapy	2
Canadian Journal of Occupational Therapy	1
Scandinavian Journal of Occupational Therapy	1
Occupational Therapy International	1
Occupational Therapy in Health Care	1
Open Journal of Occupational Therapy	1
Journal of Continuing Education in the Health Professions	1
Journal of Rehabilitation Medicine	1
Disability and Rehabilitation	1
Journal of Evaluation in Clinical Practice	1
BMC Health Services Research	1
Plos One	1
Implementation Science	1

Thematic Analysis

Participants in each study included at least one occupational therapist as specified by the eligibility criteria. Some studies included occupational therapists only, whereas some included a mix of other health professionals and participants who were not from a health background. Over half of the studies (n = 10) included a mix of occupational therapists and other health professionals in the sample. This indicates that the research being published about knowledge translation approaches includes occupational therapists as part of a multi-disciplinary approach, rather than a profession-specific intervention. Hence, knowledge translation approaches are being used to reduce the research-practice gap in areas and innovations that are not specific to occupational therapy.

The knowledge translation approaches focused on a diverse range of innovations including understanding client experiences, specific interventions and approaches to therapy, research utilization, and the use of clinical guidelines in practice. Three themes emerged from the data: use of a knowledge translation framework to guide the study, methods and structure of the knowledge translation approach, and the outcomes of knowledge translation approaches.

Use of a Knowledge Translation Framework to Guide the Study
Knowledge translation frameworks were used in five studies to guide the methods of the research and the knowledge translation approach (Anaby et al., 2015; Forhan & Law, 2009; Jeong et al., 2016; Petzold et al., 2012; Salbach et al., 2017). Two knowledge translation frameworks were used: four studies (Anaby et al., 2015; Jeong et al., 2016; Petzold et al., 2012; Salbach et al., 2017) used the Knowledge-to-Action (KTA) framework (Graham et al., 2006) and one study (Forhan & Law, 2009) used the Diffusion of the Innovations model (Rogers, 2003). Authors used the knowledge translation frameworks to guide their studies in different ways. Jeong et al. (2016) used the KTA framework to guide the entire knowledge translation process and clearly stated how they had completed the first five steps of the framework in their study. Other studies were less detailed in their use of a knowledge translation framework and provided limited descriptions of how the framework guided the knowledge translation process. For example, Petzold et al. (2012) stated that the knowledge translation approach was based on the KTA framework but did not elaborate on the completion of each of the steps. Similarly, Salbach et al. (2017) provided limited detail about how the KTA framework informed their knowledge translation approach but did report the identification of barriers and enablers as part of the process without explicitly relating that to the corresponding step in the KTA framework. Overall, the studies were not explicit in providing detail of how the knowledge translation framework guided and informed the knowledge translation approach.

A small number of articles in this review described the use of a knowledge translation framework to guide their study with clear detail. Although some studies used a knowledge translation framework to guide their studies, the majority of the included articles did not report following a specific knowledge translation framework. Instead of using a specific knowledge translation framework, one study used a behavior change model (the 5As; Goldstein et al., 2004) to guide the knowledge translation approach (Coker-Bolt et al., 2015). Another study used action research concepts to inform their study and the development of the knowledge translation approach (Kristensen & Hounsgaard, 2014). In a study by Doyle and Bennett (2014), the KTA framework was described in detail in the introduction and discussion providing context to the study, however there was limited reference to how the framework was specifically applied in the methods section. It was interesting to note that over half of the articles (n = 11) did not use any type of framework, knowledge translation specific or otherwise, to guide their study and knowledge translation approach.

Methods and Structure of the Knowledge Translation Approach

Knowledge translation approaches used with occupational therapists were diverse and differed between each of the studies. The approaches differed in the development of the approach, the types of transfer strategies used, the number of strategies, and the structure of the knowledge translation approach.

In developing the content and structure of the knowledge translation approach, it was common for authors to consult with participants to identify learning needs, barriers, and enablers to implementing the innovation in practice (Anaby et al., 2015; Doyle & Bennett, 2014; Forhan & Law, 2009; Glegg et al., 2017; Jeong et al., 2016; Levac et al., 2016a; Malinowsky et al., 2014; Petzold et al., 2012; Salbach et al., 2017). In a study by Forhan and Law (2009), a survey was sent out to all Canadian occupational therapists to identify gaps in therapists' knowledge about obesity. The results of this survey were used to inform the content of the knowledge translation approach. Another study used the first face-to-face education session to identify the learning needs and problem areas of the participants (Anaby et al., 2015). In a number of studies, it was not clear if the participants had been consulted during the development of the approach or throughout the knowledge translation process (Bazyk et al., 2015; Coker-Bolt et al., 2015; Colantonio et al., 2008; Kristensen & Hounsgaard, 2014; LaBerge et al., 2015; Willems et al., 2016).

A diverse range of transfer strategies were used. These are detailed in Table 1 (see Appendix). Ten studies used face-to-face education sessions (Anaby et al., 2015; Bazyk et al., 2015; Coker-Bolt et al., 2015; Doyle & Bennett, 2014; Forhan & Law, 2009; Glegg et al., 2017; Levac et al., 2016a; Levac et al., 2016b; Malinowsky et al., 2014; Petzold et al., 2012), and seven studies used online resources as a transfer strategy (Bazyk et al., 2015; Coker-Bolt et al., 2015; Jeong et al., 2016; LaBerge et al., 2015; Levac et al., 2016a; Levac et al., 2016b; Petzold et al., 2012). Other transfer strategies included a theatrical play (Colantonio et al., 2008), clinical audits with feedback (Kristensen & Hounsgaard, 2014), knowledge brokers (Willems et al., 2016), and knowledge translation reinforcement periods (Glegg et al., 2017; Levac et al., 2016a; Levac et al., 2016b; Malinowsky et al., 2014; Petzold et al., 2012). Online resources were commonly incorporated alongside education sessions (Bazyk et al., 2015; Levac et al., 2016a; Levac et al., 2016b; Petzold et al., 2012). Face-to-face education sessions incorporated activities such as case studies (Anaby et al., 2015; Forhan & Law, 2009; Levac et al., 2016a; Levac et al., 2016b), guided questions (Anaby et al., 2015), group discussion (Anaby et al., 2015; Bazyk et al., 2015), reading and reflection (Bazyk et al., 2015), presentation of evidence for the innovation (Coker-Bolt et al., 2015; Glegg et al., 2017; Malinowsky et al., 2014), and didactic lectures (Petzold et al., 2012). The theatrical play was delivered to an audience of both health professionals and members of the community, and it provided information about the experiences of people with traumatic brain injury (Colantonio et al., 2008). One study completed clinical audits of therapists' documentation to identify their use of the innovation and provided feedback to the therapists (Kristensen & Hounsgaard, 2014). Another study employed and trained knowledge brokers who provided context-specific approaches to knowledge translation but there was limited detail about what this entailed (Willems et al., 2016). Knowledge

translation reinforcement periods provided therapists with time to implement the innovation into their practice (Glegg et al., 2017; Levac et al., 2016a; Levac et al., 2016b; Malinowsky et al., 2014; Petzold et al., 2012). Overall, face-to-face education sessions and online resources were the most common transfer strategies used in the knowledge translation approaches.

Knowledge translation approaches, the method of supporting the translation of knowledge into practice, included in the review differed in the number of strategies that were utilized and how the transfer strategy was implemented. Eight studies used a single transfer strategy and two studies used a combination of two transfer strategies. In comparison, six studies used three or more transfer strategies in the knowledge translation approach. Glegg et al. (2017) used a combination of different types of transfer strategies including face-to-face education sessions, resources and a knowledge translation reinforcement period. Authors implemented face-to-face education sessions in different ways. For example, in a study by Bazyl et al. (2015), the knowledge translation approach used multiple transfer strategies alongside face-to-face education sessions including online resources and online discussions. There were three face-to-face education sessions over a six month period, with online resources and tasks in between the sessions (Bazyk et al., 2015). In comparison, a number of studies used a single face-to-face education session as the knowledge transfer strategy in their study (Doyle & Bennett, 2014; Forhan & Law, 2009; Malinowsky et al., 2014). Furthermore, the approaches and strategies of knowledge translation within each of the studies were diverse.

The Outcomes of Knowledge Translation Approaches
All of the studies investigated the impact of the knowledge translation approach in some way. Most studies collected data through a single method of surveys or exams (Coker-Bolt et al., 2015; Colantonio et al., 2008; Doyle & Bennett, 2014; Forhan & Law, 2009; Glegg et al., 2017; Jeong et al., 2016; LaBerge et al., 2015; Levac et al., 2016a; Petzold et al., 2012; Willems et al., 2016), while others compared client outcomes (Salbach et al., 2017) or conducted focus groups (Kristensen & Hounsgaard, 2014). Some studies collected data using a combination of face-to-face interviews, written materials, focus groups, surveys, or exams (Anaby et al., 2015; Bazyk et al., 2015; Levac et al., 2016b; Malinowsky et al., 2014). All of the authors of the studies found some objective or self-reported positive impact soon after the implementation of the knowledge translation approach.

The studies examined a number of outcomes of the knowledge translation approaches related either to the therapist, client, or knowledge or practice to be translated, which in the literature is referred to as 'the innovation'. Therapist-related outcomes included practice change or intention to change (Kristensen & Hounsgaard, 2014; Malinowsky et al., 2014; Salbach et al., 2017; Willems et al., 2016), knowledge (Coker-Bolt et al., 2015; Glegg et al., 2017; LaBerge et al., 2015), beliefs (Bazyk et al., 2015; Forhan & Law, 2009), learning (Anaby et al., 2015; Colantonio et al., 2008; Jeong et al., 2016), and behavioral control (Doyle & Bennett, 2014; Levac et al., 2016a; Petzold et al., 2012). One study by Willems et al. 2017 examined client-related outcomes,

demonstrating that the knowledge translation approach resulted in increased opportunities for clients to engage in physical activity. Innovation-related factors included the determinants of uptake of the innovation such as the perceived ease of use and quantity of time required for the innovation to be implemented (Glegg et al., 2017). Some studies evaluated a number of outcomes including changes to knowledge, attitudes, intention to change practice, and actual practice change (Anaby et al., 2015; Bazyk et al., 2015), while other studies focused their evaluation on the single outcome of change in knowledge (Coker-Bolt et al., 2015; Glegg et al., 2017; LaBerge et al., 2015).

Knowledge translation approaches commonly had an impact on therapists' knowledge, attitudes, intention to change practice, and their actual practice. Most commonly, the knowledge translation approaches increased participants' knowledge about the specific innovation (Coker-Bolt et al., 2015; Colantonio et al., 2008). Change in knowledge was evaluated differently across studies through the use of either a pre-post exam or through self-report in surveys, interviews, or focus groups. Petzold et al. (2012) found that people who participated in most of the knowledge transfer strategies scored higher on the post-test than those that did not.

Change in therapists' attitudes was an outcome explored in two studies (Forhan & Law, 2009; Malinowsky et al., 2014). Forhan and Law (2009) found that after participation in a face-to-face education session, some participants had an increase in positive attitudes towards people with obesity, whereas others did not. In Bazyk et al.'s study (2015), participants reported a positive change in their thinking about mental health after participating in a multi-component knowledge translation approach. Participants in that study also reported an increase in an understanding of the occupational therapy role and a "reconnection with the profession's roots" after participating in the approach (Bazyk et al., 2015). This was confirmed in Anaby et al.'s study (2015) in which participants reported an improved sense of professional identity after attending a series of face-to-face education sessions.

A number of studies explored the influence of the knowledge translation approach on participants' practice or intention to change practice. The articles focused on short term objectives such as knowledge, skills, and attitudes, with very few papers investigating the medium term objectives which are associated with sustained behavioral change among the participants. In six studies, participants reported a change in practice or intention to change practice after participating in the knowledge translation approach (Anaby et al., 2015; Bazyk et al., 2015; Colantonio et al., 2008; Doyle & Bennett, 2014; Forhan & Law, 2009; Malinowsky et al., 2014). Three-quarters of the participants in Jeong et al.'s study (2016) intended to change their practice through the use of practice measures (the focus of the knowledge translation approach) after watching a webinar. Levac et al. (2016b) observed no change or intention to change practice after the knowledge translation approach that was implemented over five months. Salbach et al. (2017) found that the sixteen month knowledge translation approach resulted in a change in some areas of practice, but did not affect other areas. Interestingly, in Kristensen and Hounsgaard's study (2014), use of the innovation in practice decreased

in one area after clinical audits. In summary, some studies showed that a knowledge translation approach impacted participants' practice or intention to change practice while others demonstrated no impact.

Inclusion of Participants' Perceptions
As well as exploring the impact of the knowledge translation approach, many studies also investigated participants' evaluations of the impact of the knowledge translation approaches on their learning. Participants in some studies reported that the combination of knowledge transfer strategies was useful for their learning (Bazyk et al., 2015; Levac et al., 2016a). In Levac et al.'s study (2016a), participants found the combination of face-to-face education sessions with self-paced online tasks supported their learning. In contrast, participants in Jeong et al.'s study (2016) reported the webinar (a single knowledge translation approach) as useful for their practice. Participants in a study by Anaby et al. (2015) reported that discussions with peers and reflection supported the uptake of knowledge about the innovation. Overall, participants reported knowledge translation approaches as a positive use of their time and useful for practice.

Discussion
A scoping review was completed to explore what was known from the existing literature about knowledge translation approaches when implementing a practice change in a clinical occupational therapy setting. After conducting a thorough review of the available literature, it was evident that knowledge translation approaches were being implemented with occupational therapists across a range of caseloads, clinical settings, and countries. Diversity existed in the strategies and structure of knowledge translation approaches for occupational therapists. A limited number of studies used a specific knowledge translation framework to guide their study and approach. Multiple studies reported that participants found a combination of transfer strategies in the knowledge translation approaches as supportive for their learning. Each knowledge translation approach had an objective or self-reported positive impact on occupational therapists and their practice. More research is needed to determine which transfer strategies and approaches have the best outcomes for occupational therapists.

Use of a Knowledge Translation Framework
A majority of articles in this review did not use a knowledge translation framework to guide their study. This was inconsistent with the findings of a recent systematic review of musculoskeletal therapists in which approximately half of studies used a framework to guide the knowledge translation approach (Al Zoubi et al., 2018). Currently, there is no evidence to suggest that knowledge translation approaches using theoretical frameworks are more effective than those that do not use a framework. However, Scott et al. (2012) stated there are benefits to using a theoretical framework including support for decision making around transfer strategies and evaluation methods, and to provide an understanding about the replicability and generalizability of the approach to other settings and participants. In this scoping review, use of a knowledge translation framework to guide the study supported authors to target the specific context and needs of the participants. In particular, Jeong et al. (2016) followed the KTA framework in their study to address the specific barriers and enablers for their participants to tailor their

knowledge approach with the majority of participants reporting that the approach was useful for their clinical practice. More research is needed to understand if and how the use of a theoretical framework promotes positive outcomes from knowledge translation approaches.

Knowledge Transfer Strategies

A diverse range of knowledge transfer strategies were included in this review: face-to-face education sessions, online resources, a theatrical play, clinical audits with feedback, knowledge brokers, and knowledge translation reinforcement periods. The most common strategies were face-to-face education sessions and online resources. Previous reviews of knowledge translation in allied health also found education sessions as the most common transfer strategies used (Jones et al., 2015; Scott et al., 2012). The majority of the transfer strategies used in the studies included in this scoping review have been used as part of knowledge translation approaches in allied health (Grimshaw et al., 2004; Menon et al., 2009; Scott et al., 2012). The use of a drama production as a knowledge transfer strategy in Colantonio et al.'s study (2008) was a new and innovative idea. Participants in that study (including health professionals and non-health professionals) rated the drama production highly as a tool for knowledge translation and reported that it provided new knowledge or reinforced their knowledge (Colantonio et al., 2008). The participants reported that the production assisted them to understand clients' perspectives of their condition (Colantonio et al., 2008). However, that study did not comprehensively evaluate the knowledge translation approach and so more evidence is needed to determine its effectiveness to support knowledge translation for occupational therapists. Common and innovative knowledge translation approaches have been implemented in occupational therapy with some positive impact, though it is not clear which approaches have the most impact on occupational therapists.

The Outcomes of Knowledge Translation Approaches

Studies in this scoping review evaluated many different outcomes of the knowledge translation approach including change in knowledge, attitudes, intention to change, and practice change, and showed some positive impact on one or more of these aspects. It is interesting to note that a number of studies in this review evaluated short term outcomes (including knowledge and attitudes), rather than focusing on medium to long term outcomes (including sustained practice change and client-related outcomes). Short-term outcomes such as learning and knowledge exchange, are only one aspect within the knowledge translation process (Straus et al., 2009). The key aim of knowledge translation is the implementation of knowledge into practice and the impact of this on client outcomes (Straus et al., 2013). Future research should expand upon current evidence of the impact of knowledge translation approaches on short-term outcomes and evaluate longer term practice change and the subsequent impact on client outcomes.

From this scoping review, it is unclear which knowledge translation approaches were most effective but face-to-face education sessions and online resources were the most commonly used. Grimshaw et al.'s review (2004) on the use of knowledge translation approaches with physicians showed that there was no one knowledge transfer strategy

that was most effective. Moreover, multi-component approaches that are targeted towards the needs of the participants were found to be most effective for physicians (Grimshaw et al., 2004). Menon et al.'s review (2009) investigating knowledge translation approaches in rehabilitation showed that there was no high-quality evidence supporting the effectiveness of multi-component knowledge translation approaches for improving knowledge of occupational therapists. Following a more recent comprehensive review of the literature on knowledge translation approaches, there is new evidence that multi-component knowledge translation approaches positively impact on occupational therapists' knowledge (Zoubi et al., 2018). However, this review did not asses the methodological quality of these articles as this is not a required part of the scoping review process.

Studies in this review also explored the participants' experience of the knowledge translation approaches. From the participants' perspective, a combination of transfer strategies was useful for their learning. In Anaby et al.'s study (2015), participants found the combination of reading and online discussions enhanced their learning. Levac et al. (2016a) found that participants thought the combination of online resources and face-to-face education sessions was useful for their learning. Participants have also reported that they valued discussions with their colleagues and the opportunity for reflection provided in some knowledge translation interventions (Anaby et al., 2015). Previous reviews have not considered participants' experiences and evaluation of knowledge translation approaches. Involving participants in the development of the knowledge translation approach and understanding their perspectives influences perceived effectiveness of the approach (Logan & Graham, 1998). It will be useful to explore participants' experiences and evaluations of knowledge translation to assist with future planning and use of approaches in the future.

Dissemination and Description of Knowledge Translation Approaches
Our search retrieved a large number of abstracts from conference presentations and posters focusing on knowledge translation approaches in occupational therapy and allied health. In fact, the number of conference and poster abstracts about knowledge translation were much more frequent in the literature than full length peer-reviewed journal articles. This was interesting because it highlighted that a significant portion of the research being completed in knowledge translation is not being presented in a way that can be accessed and utilized by a majority of clinicians and researchers. It is difficult for knowledge translation studies presented at conferences and reported in the literature in abstract form to be used as they have not been disseminated in a peer-reviewed journal, nor enough detail provided via a condensed abstract and thus, its value and quality could be questioned. Additionally, the knowledge translation approaches used in these studies were not fully detailed in the abstracts and cannot be accurately replicated. Evidently, there is a need for researchers to submit knowledge translation research for publication and for journals to publish these articles in order to add to the knowledge translation literature and facilitate occupational therapists to implement knowledge into practice (Law et al., 2008).

A number of studies included in this review did not provide detailed descriptions of the knowledge translation approach, data collection methods and results. For example, Coker-Bolt et al. (2015) did not fully describe and report the results of their study which made it difficult for the reader to interpret the impact of the knowledge translation approach. Similarly, Willems et al. (2016) provided limited description of the knowledge translation approach delivered by the knowledge brokers. The lack of description in the studies and knowledge translation approaches was challenging when completing this scoping review because the process and outcomes of knowledge translation were unclear. Moreover, further details about the knowledge translation approach would have supported a more accurate summary and description of the knowledge translation approaches being implemented in occupational therapy. In future research, authors should be specific and explicit in their description of the methods of the study and knowledge translation approach to ensure that this information can be used by clinicians and researchers.

The Role of Educators in Knowledge Translation
From a thorough literature search, it was encouraging that occupational therapists were implementing changes to their practice using the principles of knowledge translation. Despite this, it was clear that further education and guidance could be provided to ensure that knowledge translation approaches are sustained, and findings are disseminated for future use by health professionals. From the knowledge translation literature, it is known that end-user involvement in planning, designing, implementing and evaluating a change to practice is most effective for sustainability (McWilliam, 2007). Occupational therapy researchers and educators are often tasked with producing translational outcomes from their research and teaching. Potentially partnering with health services to ensure that all knowledge translation approaches are underpinned by latest evidence and frameworks to increase the likelihood of sustained change could be beneficial in the future. Academic and clinician partnerships for knowledge translation including the implementation of evidence-based practice have been useful in health (Phillips et al., 2019). Collaborative partnerships have significant impacts, not only on clients of the service, but also on students who learn about the impact of adopting innovations and practice change (Phillips et al., 2019). Tertiary educators may have a role to play in building the knowledge of and exposure to knowledge translation in undergraduate or graduate entry occupational therapy students to ensure that graduates have an understanding of the process of knowledge translation and how to sustainably implement evidence and innovations in practice.

Limitations
Despite efforts taken to ensure rigor described by Arksey and O'Malley (2005), this review is still subject to limitations. Although several measures were taken to ensure all relevant articles were included from a rigorous search of databases, it is possible that pertinent articles may have been missed. Additionally, as is standard in a scoping review, the quality of the studies included were not assessed and no conclusions about methodological issues, bias or rigor can be made (Arksey & O'Malley, 2005; The Joanna Briggs Institute, 2015).

Conclusions and Implications for Occupational Therapy Education

Knowledge translation is an emerging area of research in occupational therapy. This review has explored the use of knowledge translation approaches specifically within the profession of occupational therapy. Knowledge translation approaches are commonly being implemented with occupational therapists as part of a multi-disciplinary strategy. It is evident that all types of knowledge translation approaches in occupational therapy had a positive impact, with face-to-face education sessions and online resources being frequently used strategies. This scoping review has highlighted how knowledge translation approaches can be implemented to address profession-specific practice challenges in occupational therapy. The findings of this review can be used to inform and guide future knowledge translation and education endeavors with occupational therapists to ensure the outcomes of this process are optimized, and that the research to practice gap in occupational therapy is reduced. Knowledge translation research with occupational therapists needs to be disseminated with documentation of the structure and impact of the knowledge translation approach in order to inform future endeavors and support evidence-based practice.

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Appendix

Table 1

Data Extraction

Reference	Aims	Innovation	Knowledge translation strategies	Outcome measures	Participants' evaluation of the knowledge translation approach	Impact of the knowledge translation approach
Anaby D, Korner-Bitensky N, Law M, Cormier I. Focus on participation for children and youth with disabilities: Supporting therapy practice through a guided knowledge translation process. Br J Occup Ther. 2015;78:440-449.	To investigate the impact of the KT approach on participants' attitudes towards child participation and practice change or intention to change.	Participation for children and youth with disabilities	Two groups participated in multiple learning sessions over 6-8 weeks. Each session was 1.5 hours long. Session 1 focused on identifying problems, and session 2-6 focused on achieving the goals set in session 1. Activities within the sessions included case studies specific to the setting, articles and assessments, guided questions and group discussion.	Pre-questionnaire about professional background and current practice. 3 months post intervention: semi-structured interviews about change in perception, intention for change and change in actual behavior based on the Professional Evaluation and Reflection on Change Tool (PERFECT).	Pertinent information facilitated learning. Structure of sessions and processions met their needs. The process of an ongoing peer dialogue and reflection on practice facilitated knowledge uptake.	Increased knowledge of participation and changed attitudes about the importance and participation. Practice change and intention to change was expressed. Impact of learning on the barriers and facilitators for implementation.
Bazyk S, Demirjian L, LaGuardia T, Thompson-Repas K, Conway C, Michaud	To investigate the impact of the KT approach on participants'	Public health approach to meet mental	Eight communities of practice were developed. Educational	Pre-test at beginning of first COP session and post-test at	Learning over time and ability to implement changes	Improvements in knowledge, beliefs and actions.

Reference	Aims	Innovation	Knowledge translation strategies	Outcome measures	Participants' evaluation of the knowledge translation approach	Impact of the knowledge translation approach
P. Building capacity of occupational therapy practitioners to address the mental health needs of children and youth: A mixed-methods study of knowledge translation. Am J Occup Ther. 2015;69:1-10.	knowledge, confidence and attitudes towards implementing a public health approach to mental health with children and youth.	health needs of children	methods included face-to-face meetings (3 hours long) and online discussions involving reading, reflection and participant discussions. For each of the online discussions, participants read two chapters of a book, reflected and wrote responses to discussion questions. OT change leaders were employed.	during final COP session. Written survey consisting of 20 closed-ended items to examine participants' knowledge, beliefs and actions. Written materials obtained from the participants' first online discussion responses and the final session reflections were collected and analyzed as qualitative data.	immediately was useful for learning. Combination of reading and online discussions enhanced learning. Face-to-face and online discussions enhanced shared learning.	Increased professional identity and awareness scope of the OT role. Increased confidence. Changes in practice occurred.
Coker-Bolt P, DeLuca SC, Ramey SL. Training pediatric therapists to deliver Constraint-Induced Movement Therapy (CIMT) in Sub-Saharan Africa.	To measure the impact of providing Constraint Induced Movement Therapy (CIMT) on participants.	CIMT in pediatrics	All-day face-to-face sessions for 5 days at one hospital. Face-to-face sessions included evidence for CIMT, hands-on activities, an interactive, tailored approach for the participants,	Baseline self-report of current practice and knowledge about CIMT. Participants completed a post training exam to identify learning needs.	Highly favorable feedback on the workshop.	Increased knowledge in some areas.

Reference	Aims	Innovation	Knowledge translation strategies	Outcome measures	Participants' evaluation of the knowledge translation approach	Impact of the knowledge translation approach
Occup Ther Int. 2015;22:141-151.			and training videos. Follow up visit 5 months post which focused on clinical implementation and case review. Between visits, supplies were sent and there was communication between the leaders of the KT approach and the hospital. The content of the sessions was adapted as the learning needs of the participants was identified.			
Colantonio A, Kontos PC, Gilbert JE, Rossiter K, Gray J, Keightley ML. After the crash: research-based theater for knowledge transfer. J Contin Educ Health Prof. 2008;28:180-185.	To evaluate the use of a drama production as an KT approach for health professionals.	Understanding the experience of patients who have had a Traumatic Brain Injury	A drama production exploring topics including TBI behavioral issues, the challenges and benefits of the engagement of clients and significant others in the rehabilitation process, and effective	Evaluation tool with five 5-item Likert scale questions and additional free text questions total about learning and perceptions of the medium.	Rated drama highly as a KT tool	Provided new knowledge and reinforced existing knowledge. Participants reported that it would impact future practice. Participants with less experience with TBI

Reference	Aims	Innovation	Knowledge translation strategies	Outcome measures	Participants' evaluation of the knowledge translation approach	Impact of the knowledge translation approach
			communication of medical information to clients.			survivors reported more gains in knowledge.
Doyle SD, Bennett S. Feasibility and Effect of a Professional Education Workshop for Occupational Therapists' Management of Upper-Limb Poststroke Sensory Impairment. Am J Occup Ther. 2014;68:e74-83.	To evaluate the impact of the KT approach on participants' knowledge, attitudes, perceived behavioral control, and behavioral intentions about Upper limb post stroke sensory Impairment management (ULPSSI) management, shared decision making, and research utilization.	ULPSSI, research utilization, and shared decision making	Two groups attended one 8 hr theoretically-based workshop. Written action plan sheets were used at the end of each module in the workshop. Workshop content included understanding ULPSSI, ULPSSI evaluation, potential for recovery post-stroke, evidence on the effects of interventions, survivors' perspective, understanding decision making under conditions of uncertainty, and resources.	Pre and post questionnaires about current practice behaviors, perceived behavioral control, knowledge, attitudes towards client-centered practice and evaluation of the workshop. Included 5-point Likert Scale questions, multi-choice questions, and Patient-Practitioner Orientation Scale.	All participations rated the workshop as excellent or good. Some stated that the workshop supported their clinical practice.	Intended behavior change, change in attitudes, increased confidence in their ability, increased pressure to implement, increased knowledge, and increased client-centered attitudes.
Forhan M, Law M. An evaluation of a workshop about	To describe the development, implementation,	Occupational therapy and obesity	Two groups attended one workshop.	Pre and post evaluation forms using the	High satisfaction rates for appropriateness,	Increased positive beliefs towards obese

Reference	Aims	Innovation	Knowledge translation strategies	Outcome measures	Participants' evaluation of the knowledge translation approach	Impact of the knowledge translation approach
obesity designed for occupational therapists. Can J Occup Ther. 2009;76:351-358.	and evaluation of an KT approach about obesity and occupational therapy.		Workshop activities included case scenarios, handouts, application of OT models and theories, and an opinion leader delivering the intervention.	Attitudes Toward Obese Persons (ATOP) Scale, the Beliefs About Obese Persons Scale and 5-point Likert Scale questions to evaluate the workshop.	relevance, and overall learning.	people (for one group of participants), no change in attitudes towards obese people (for one group), increased understanding of obesity, increased confidence and intention to change practice.
Glegg SMN, Holsti L, Stanton S, Hanna S, Velikonja D, Ansley B, Sartor D, Brum C. Evaluating change in virtual reality adoption for brain injury rehabilitation following knowledge translation. Disabil Rehabil. 2017;12:217-226.	To evaluate the impact of a multi-faceted KT intervention on the factors influencing participants' use of Virtual Reality (VR) for brain injury rehabilitation and to identify the additional support needs of participants.	VR-based therapy	Delivery of evidence on the use of VR in neurorehabilitation, a framework for assessing clients, instructions on use of the VR, advice on selecting activities for the client, setting goals and measuring client outcomes. Participants were provided with a clinical protocol manual, and technical and	Assessing determinants of Prospective Uptake of Virtual Reality (ADOPT-VR) pre and post. ADOPT-VR provides a means of evaluating the relative influence of a broad range of factors on therapists' use of VR across settings. Post feedback survey.	Positive feedback about the intervention included the thoroughness of the content, the organization and evidence dissemination. Suggested improvements for the educational intervention included further content to inform clinical reasoning,	Gained general knowledge

Reference	Aims	Innovation	Knowledge translation strategies	Outcome measures	Participants' evaluation of the knowledge translation approach	Impact of the knowledge translation approach
			clinical support. For eight months after this intervention, participants provided VR-based therapy with their clients with an ABI.		information on goal setting, and using VR with complex clients.	
Jeong Y, Law M, DeMatteo C, Stratford P, Kim H. Knowledge translation from research to clinical practice: Measuring participation of children with disabilities. Occup Ther Health Care. 2016;30:323-343.	To increase the knowledge of participants and change practice in relation to children and disability.	Measuring participation	A webinar which included presentation material and audio recording. Included content from selected articles on PowerPoint. The video was approximately 25 minutes long.	Post-survey online about appropriateness and usefulness of webinar, and potential use of practice measures.	Over 50% rated content and delivery as quite or extremely appropriate. Almost all participants indicated that the webinar was useful for their practice.	Majority of participants reported that the webinar made them think differently about their practice. 75% of OTs were willing to use the practice measures in their practice.
Kristensen H, Hounsgaard L. Evaluating the impact of audits and feedback as methods for implementation of evidence in stroke rehabilitation. Br J Occup Ther. 2014;77:251-259.	To evaluate retrospective clinical audits of therapists' medical records with feedback as a KT approach on participants' attitudes, and knowledge.	Clinical guidelines - activity-based intervention, client-centred practice, Assessment of Motor and Process Skills (AMPS), Arnadottir OT-ADL	Audits were conducted of all participants' documentation in two separate settings on four and five occasions, respectively, over a period of 15 months. Feedback was provided to the groups, both	Daily self-reported recordings, audits with feedback and three focus groups with participants to gain a differentiated and thorough evaluation of		Change of practice for some clinicians for some of the clinical guidelines, reduced use of some measures in practice (explained as due to increase no. of patients

Reference	Aims	Innovation	Knowledge translation strategies	Outcome measures	Participants' evaluation of the knowledge translation approach	Impact of the knowledge translation approach
		Neurobehavioral Evaluation (A-ONE) and the Canadian Occupational Performance Measure (COPM)	verbally and in writing, in the audit sessions.	factors that influence implementation of evidence-based occupational therapy in stroke rehabilitation.		and shorter LOS).
LaBerge L, Sangster B, Brown CA. Evaluation of a sleep knowledge translation strategy for occupational therapists working with persons who have dementia. Open J Occup Ther. 2015;3:1-15.	To evaluate the impact of an online presentation as a KT approach to improve occupational therapists' knowledge about the relationship between Blue Spectrum Light (BSL) and dementia.	Knowledge about BSL, sleep and dementia.	10.5 min online presentation explaining the relationship between BSL and sleep disorder in persons with dementia.	Pre and post-tests including multiple choice questions and Yes/No questions. Post-test asked for evaluative feedback about the presentation including their perceptions of the effectiveness, relevance, clinical applicability, and scholastic grounding of the KT strategy.	Majority of the material was new information. Participants reported that the KT approach was relevant to their practice, useful for acquiring new knowledge, evidence-based, and accessible. Majority reported that it was an effective use of their time.	Increased score on the post-test indicating an increase in knowledge.
Levac D, Glegg SMN, Sveistrup H, Colquhoun H, Miller	To evaluate the impact of the educational	Virtual Reality-based therapy	Conducted over 5 months at each site. For one month,	The pre and post survey included 7-point Likert	Therapists liked the structure of the KT	Increase in confidence, increased self-

Reference	Aims	Innovation	Knowledge translation strategies	Outcome measures	Participants' evaluation of the knowledge translation approach	Impact of the knowledge translation approach
PA, Finestone H, DePaul V, Harris JE, Velikonja D. A knowledge translation intervention to enhance clinical application of a virtual reality system in stroke rehabilitation. BMC Health Serv Res. 2016;16:557-557.	intervention on therapists' confidence related to the VR knowledge, skills, and perspectives of facilitators and barriers, and to obtain therapists' perspectives about the KT intervention		participants completed online modules outside of work hours (approx. 2hrs per module) and attended face to face sessions (1 individual and 2 times group), and audit and feedback sessions. For the next four months, each therapist completed up to four sessions of VR-based therapy with up to four clients. Site 2 therapists also had access to a site 2 therapist.	questions about confidence, the ADOPT-VR instrument about VR uptake and the System Usability Scale to understand the usability of IREX. Therapists completed the final outcome measures approximately 1 month after their final study VR-based therapy session. Focus group at the end of the intervention to understand their experience of the educational intervention. Therapists who participated in the sustainability phase recorded the frequency of	intervention with the combination of self-paced online learning with group and individual practice sessions. Reported the opportunity to trial was useful. Suggested that a refresher session would be helpful.	efficacy and increase perceived control. 50% of participants indicated intention to change their practice. After the KT intervention, there was a decrease in frequency of barriers. Participants reported low usability of the IREX.

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				their use of VR in therapy.		
Levac D, Glegg SMN, Sveistrup H, Colquhoun H, Miller P, Finestone H, DePaul V, Harris JE, Velikonja D. Promoting therapists' use of motor learning strategies within virtual reality-based stroke rehabilitation. PLoS One. 2016;11:e0168311-e0168311.	To evaluate the impact of a multi-faceted KT intervention about using a motor learning approach to VR-based therapy on physical therapists and occupational therapists.	Virtual Reality-based therapy	Conducted over 5 months at each site. For one month, participants completed online modules outside of work hours (approx. 2hrs per module) and attended face to face sessions (1 individual and 2 times group), and audit and feedback sessions. For the next four months, each therapist completed up to four sessions of VR-based therapy with up to four clients. Site 2 therapists also had access to a site 2 therapist.	Time 1 outcome data collection occurred after the first two clients and Time 2 outcome data collection occurred after the next 2 clients. One session for every second patient was videotaped for outcome measurement purposes. Participants rated confidence using a 7-point Likert scale, Chart-Stimulated Recall (semi-structured interview) was used to analyze clinical reasoning use and the Motor Learning Strategy Rating	Therapists felt that the knowledge about MLS was applicable to other aspects of therapy and that they were familiar with this knowledge, but indicated that the content provided during the KT intervention provided a good refresher.	Therapists reported improvements in MLS confidence. No change in practice.

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				Instrument behavior was used to evaluate how therapists were implementing MLS in their therapy. At the end of the KT intervention, participants took part in a 1.5 hr focus group to understand their experience of the educational intervention.		
Malinowsky C, Rosenberg L, Nygård L. An approach to facilitate healthcare professionals' readiness to support technology use in everyday life for persons with dementia. Scand J Occup Ther. 2014;21:199-209.	To evaluate the impact of a KT approach to support participants' use of technology with older adults with dementia.	Technology use with persons with dementia	One-day course which included the presentation of evidence on supporting the use of technology for older adults with dementia, and introduction of two clinical tools. After the educational intervention and the first focus group interviews,	Focus groups and telephone interviews.		Change in attitudes towards technology and importance of collaboration between health professionals. Intention to change practice.

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			participants considered, reflected on, and tried to use the knowledge and tools for approximately six weeks.			
Petzold A, Korner-Bitensky N, Salbach NM, Ahmed S, Menon A, Ogourtsova T. Increasing knowledge of best practices for occupational therapists treating post-stroke unilateral spatial neglect: Results of a knowledge-translation intervention study. J Rehabil Med. 2012;44:118-124.	To investigate the impact of a multi-modal KT intervention on occupational therapists' knowledge and self-efficacy towards the management of post-stroke clients.	Best practice in stroke rehabilitation	7-hr in-person interactive session run by 4 OTs included didactic lectures, hands-on sessions, use of online resources, and dissemination of summary information, best practice pocket cards and use of the PERFECT tool. A KT reinforcement period lasting 8 weeks followed the in-person session: each clinician was given access to online materials and discussion forums and were asked to access the online	Standardized 20-item Knowledge Questionnaire, EBP Self-Efficacy Scale and 47-item measure used to collect clinician- and work-related variables		Increased knowledge of the innovation. Change in self-efficacy.

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			materials. Email reminders were sent every 2 weeks to encourage use of the online resources. Participants logged their time spent on the activities over the 8 weeks.			
Salbach NM, Wood-Dauphinee S, Desrosiers J, Eng JJ, Graham ID, Jaglal SB, Korner-Bitensky N, MacKay-Lyons M, Mayo NE, Richards CL, et al. Facilitated interprofessional implementation of a physical rehabilitation guideline for stroke in inpatient settings: process evaluation of a cluster randomized trial. Implement Sci. 2017;12:100.	To evaluate the extent to which participants implemented the recommended treatments targeting upper extremity (UE) and lower extremity (LE) motor function, postural control, and mobility.	Recommended treatments targeting upper extremity and lower extremity motor function, postural control, and mobility.	Over 16 months, two facilitators provided 4 hr per week to support clinicians' guideline implementation. Stroke teams were provided with SCORE guideline booklets that included treatment recommendations and evidence-based treatment protocols and reminder cards designed for participants.	Comparison of patient outcomes related to walking capacity and manual dexterity post-intervention and self-report checklists to record clinician's implementation of 18 recommended treatments with each patient seen over a 2-week period pre- and post-intervention.		Change in practice for sit-to-stand training and walking practice. Active KT had a limited impact compared to passive KT.

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Willems M, Schröder C, van der Weijden T, Post MW, Visser-Meily AM: Encouraging post-stroke patients to be active seems possible: Results of an intervention study with knowledge brokers. Disabil Rehabil. 2016;38:1748-55.	To investigate the impact of KT approach, using knowledge brokers, on health professionals' practice, specifically physical activity-encouraging behaviour.	Stroke guidelines for exercise and physical activity	Conducted over 1 year. Two or three KBs for each stroke unit. KBs employed activities to implement the guidelines recommending physical activity of stroke clients and to support health professionals to encourage their clients to be active. The KBs were trained during four face-to-face meetings in knowledge and skills with regard to project management, neurorehabilitation, and implementation strategies. The KBs were encouraged to tailor their implementation activities specifically to the local needs and contexts. KBs	The level of encouragement patients perceived from the HPs to be physically active "in the past 2 days" was investigated using four questions with a 4-point scale. The amount of encouraging behavior the HPs engaged in was assessed with seven self-reported questions.		Change in practice. Patients in rehabilitation centers more often felt encouraged to be physically active than patients in hospitals. OTs reported a higher total score for encouraging behavior at T1 than at T0.

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			implemented a "do it yourself" exercise guide, and introduced training of functional tasks.			