

**Identifying ‘real-world’ initiatives for knowledge translation tools: a case study of
community-based physical activity programs for persons with physical disability in
Canada (2018).**

Katrina A. D’Urzo¹, Kristiann E. Man¹, Rebecca L. Bassett-Gunter², Amy E. Latimer-Cheung¹,
Jennifer R. Tomasone¹.

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Abstract

Background: ‘Real-world’ initiatives represent an important source of information for evidence-based practice; however, accessing information about initiatives is often challenging. Casebooks are an innovative knowledge translation (KT) tool for researchers, practitioners, and end-users to address ‘research-to-implementation gaps’ through sharing ‘real-world’ experiences. Several casebooks have been published; yet, they remain inconsistent in their methodological approach for identifying ‘real-world’ initiatives. **Purpose:** The purpose of this project is to describe and apply systematic scoping study methods for the identification of ‘real-world’ initiatives relevant for the development of KT tools. Specifically, systematic scoping study methods were developed to identify community-based physical activity (PA) programs for persons with physical disabilities across Canada. **Methods:** To identify PA programs, a search strategy was developed and included five distinct search approaches: (1) peer-reviewed literature databases; (2) grey literature databases; (3) customized Google search engines; (4) targeted websites; and (5) consultation with content experts. **Results:** Title screening and hand searching identified 478 potentially relevant PA programs. Full record review identified 72 PA programs that met KT tool criteria. The most comprehensive search approach was targeted websites, which identified 25 (35%) unique PA programs, followed by content experts (n=12; 17%). Only four (5.6%) unique PA programs were identified via custom Google searching. No PA programs were uniquely identified through peer- or grey-literature database searches. **Conclusions:** This study describes and applies a systematic scoping study methodology that serves as a basis for identifying and selecting ‘real-world’ initiatives that are central to the development of evidence-based KT tools. **Keywords:** systematic scoping study, knowledge translation, methodology

Introduction

Casebooks that profile ‘real-world’ initiatives (e.g., programs, policies, organizations, etc.) are an innovative knowledge translation (KT) tool for researchers, practitioners and end users to share knowledge, build awareness and facilitate evidence-based best-practices [1–4]. Casebooks allow researchers to develop a more comprehensive understanding of ‘lessons learned’ from KT experiences through illuminating ‘ground-level experience’ [2; p.g. 2]; yet, the systematic and thorough identification of ‘real-world’ initiatives is a challenge in creating comprehensive casebooks as these initiatives are not always described in traditional peer-reviewed forums. Given this challenge, previous casebook methodologies that aim to identify relevant ‘real-world’ initiatives are inconsistent. For example, some have invited stakeholders working in health and other sectors to contribute to casebook development [5, 6]; others have incorporated database searches for KT research studies and requested the nomination of ‘in-the-field’ projects from partners [2, 7].

Systematic scoping studies are a knowledge synthesis strategy that may prove valuable in identifying ‘real-world’ initiatives that inform the development of KT tools for evidence-based practice. Whereas systematic reviews comprehensively identify, appraise and synthesize specific evidence in a particular field [8], scoping studies are designed to provide a more general overview of existing evidence and identify knowledge gaps that may impact policy and practice [9]. Together, systematic scoping studies extend systematic review and scoping study methodologies by including explicit, reproducible and comprehensive systematic review methodology recommendations [10] that clearly state the study objectives and eligibility criteria of all search results; thus, minimizing bias in the identification of results. Recommendations for conducting these studies are contributing to the development of standardized systematic scoping

study methodology frameworks. For example, Levac et al. [11] extend previous [12] recommendations for conducting scoping studies of peer-reviewed literature and Godin and colleagues [13] describe a framework for comprehensively searching the grey literature (i.e., literature not formally published in academic sources [13]); however, their application for identifying ‘real-world’ information has not been formally examined – a necessary step given that ‘real-world’ initiatives are not often described in traditional academic forums. Moreover, the frameworks must be extended to account for the use of systematic scoping study findings to inform the development of KT tools (i.e., casebooks, audit and improvement tools or guidelines etc.[14]), and ultimately evidence-based practice. Establishing a comprehensive, standardized casebook search methodology would enhance the quality of future casebooks and serve as a tool for improving the rigour of processes involved in developing evidence-based practices founded upon ‘real-world’ initiatives.

Thus, to extend previous frameworks [11, 12], the purpose of the present study is to describe and apply systematic scoping study methods for the identification of ‘real-world’ initiatives relevant for the development of KT tools. Identifying an efficient methodology to systematically identify and document “real-world” initiatives serves as a basis for developing KT tools and informing evidence based practice.

Context

The systematic scoping study methods were developed and applied in the specific context of a Casebook project aiming to profile community-based physical activity (PA) programming for persons with physical disabilities across Canada. Compared to adults without disabilities, those with disabilities are more likely to be physically inactive [15]. Community-based physical activity (PA) programming fosters both community and PA participation for persons with

physical disabilities, and thus, improves health and quality of life [16]. Strategies aimed at developing, evaluating and improving adapted PA programming are an important step in addressing existing barriers to participation and represent an opportunity to better meet the needs of this population [17]. However, there is a paucity of information in peer-reviewed literature regarding how to foster participation within these programs [18] highlighting the need for researchers to look to ‘real-world’ initiatives for insight.

The Canadian Disability Participation Project (CDPP) is an alliance of university, public, private and government sector partners working together to enhance community participation among Canadians with physical disabilities (www.cdpp.ca). One focus of the CDPP is to develop, test and implement evidence-based best-practices, including PA programming, to increase the quantity and quality of PA opportunities for people with disabilities. To help achieve this goal, CDPP partners (i.e., knowledge users) were involved in the present study in one of three roles: (1) Content Experts (CE; i.e., an additional source of grey-literature information; see below for more details); (2) Community and Research partners (i.e., study design and execution); and (3) KT Advisory Committee members (i.e., KT tool development). In consultation with the KT Advisory Committee, it was decided that a Casebook would be developed as a KT tool to systematically document existing community-based PA programs for adults with physical disabilities across Canada. The Casebook will serve as an information sharing resource for three groups of end users: persons with physical disabilities, health care practitioners, and PA program developers. The development, dissemination and evaluation of the Casebook is adopting an integrated KT approach [17], whereby a KT Advisory Committee has been established to inform all stages of the KT project to ensure Casebook feasibility among targeted end users. The KT Advisory Committee consists of individuals with physical disability, health care professionals

whose scope of practice includes PA promotion for persons with physical disability (e.g., physiatrists, physiotherapists), researchers with expertise in PA programming and promotion among persons with physical disabilities, and PA program providers.

Methods

Building from existent frameworks [11–13], this study adopted the following six systematic scoping review components: (1) identify the research question; (2) identify relevant search records; (3) record selection; (4) charting the data; (5) collating, summarizing, and reporting results; and (6) consultation. In contrast to earlier work [11, 12], we refer to framework ‘stages’ as ‘components’ to acknowledge the iterative nature of this type of searching [11].

Identifying the Research Question

The research question guiding Casebook development, and thus the current systematic scoping study, was: ‘How do community-based PA programs for persons with physical disability foster quality participation among members?’. See Table 1 for the inclusion and exclusion criteria for community-based PA programs to be featured in the Casebook. In keeping with the mandate of the CDPP to increase full community participation for individuals with physical disability in Canada, the program criteria were refined to include PA programs specifically delivered within the community for individuals with physical disability (see Table 1). Furthermore, both the KT Advisory Committee and Research and Community partners informed the study scope to include only programs that facilitate the achievement of relevant PA guideline recommendations [19–21]; thus, capturing PA programs that enable participants to achieve meaningful fitness and health benefits (e.g., [19, 20, 22]).

Identifying Relevant Search Records

In line with Levac et al. [11] the present study included a peer-reviewed literature search approach to ensure the comprehensive identification of relevant PA programs published since a recent systematic review of program conditions that foster quality PA participation experiences for people with physical disabilities [18]. Consistent with previous recommendations [13], a grey literature search plan was developed in collaboration with a professional librarian to identify any records (i.e., websites, brochures, and/or reports) that identified a community-based PA program name and description. The grey literature search plan incorporated four different search approaches: grey literature databases (grey); customized Google search engines (CGS); targeted web-based searching (TWBS); and consultation with CE.

The following search term groupings served as keywords for all searches: (1) program (or community, service); (2) physical activity (or exercise); and (3) physical disability (or disabled persons, multiple sclerosis, cerebral palsy, spinal cord injury, stroke, Parkinson's disease, muscular dystrophy, polio, amputee). Nine unique search term combinations were applied to all databases included across the four search approaches (i.e., peer, grey, CGS, and TWBS). When possible, filters were applied to each search to sort records (i.e., search results) by relevancy and capture only English, Canadian records between the years 2000 and 2016 (Table 1).

Search Approaches

Peer Reviewed Literature Databases (peer). In consultation with a librarian, five peer-reviewed literature databases were deemed relevant to the scope of the review: (1) PubMed; (2) CINAHL; (3) EMBASE; (4) Cochrane Library; and (5) ERIC.

Grey Literature Databases (grey). The grey literature database searching included two databases: (1) Thesis & Dissertations – ProQuest Dissertations Online, to capture

full text access to theses and dissertations; and (2) Web of Science, to capture conference proceedings, a potential source of emerging PA program research.

Custom Google Search Engines. To capture relevant Canadian public health information and government records related to community-based PA programs for persons with disability, two search engines were included [13]: (1) Ontario Public Health Libraries Association (<http://www.ophla.ca/resources.htm>), which searches the websites of federal and provincial health departments as well as national collaborating centres; and (2) Carleton University's MADGIC search engine (<http://subjectguides.uwaterloo.ca/c.php?g=695548&p=4931873>), an online catalogue of Canadian and Ontario government publications.

Targeted Web-based Searches. Following recommended methods for browsing targeted websites (i.e., reviewing published lists of organizations, Google searching; [13]) and consultation with a librarian, it was decided that Google searches would be the most efficient method of identifying and selecting relevant PA programs for persons with physical disability in Canada. This method is supported by Godin et al. [13], who note that Google is an efficient tool for accessing up-to-date content on very specific topics such as PA program information.

Content Expert Consultation. As previously stated, consultation occurred with three distinct groups: (1) CEs; (2) Community and Research partners; and (3) KT Advisory Committee members. Descriptions of each form of consultation are in Table 2; however, specific to the component "Identifying Search Sources", only CE consultation is considered a distinct search approach to capture PA program awareness [13] and thus will be described here.

A CE was defined as an individual knowledgeable about PA programs for persons with physical disability in Canada. In addition to contacting CDPP partners who were not involved in either the KT Advisory Committee or the study design, any organizations, researchers, or individuals involved in PA program development for persons with disabilities identified through hand-searching in the other four search sources were also contacted (see below for details). Sixty-eight CEs were contacted by email or phone in April and May of 2017. When available, an initial email was sent that requested CEs to: (a) identify any potentially relevant programs and/or (b) forward the request to colleagues who might be able to provide assistance. A second 'reminder email' was sent 7-days later, followed by a telephone call one week later. CEs whose e-mails were not available were phoned a maximum of two times.

Record Selection and Charting the Data

To balance search comprehensiveness with feasibility [13], the first 100 records from each unique search strategy underwent a title-screen, and record titles that were deemed relevant were entered into Excel along with the corresponding URL and considered for further screening. In some instances, the search strategies yielded fewer than 100 records, in which case, all records underwent title screening. A thorough characterization of relevant records and title screening of up to 900 of the most relevant records took place for each search approach (i.e., peer, grey, CGS, or TWBS). Each potentially relevant record was then hand-searched for information about an eligible PA program (Table 1). If hand-searching identified a potentially relevant program within two 'clicks' of the original record [13], the name and target audience for the program were recorded. If hand-searching identified potentially relevant CEs, the name/organization and contact information were recorded for future screening. All programs identified by CEs were

screened via hand-searching methods described above. All potentially relevant records identified underwent a full record review by two independent reviewers to assess program eligibility.

Collating, Summarizing, and Reporting the Results

All records that identified an eligible program were recorded. Programs identified in more than one search approach were counted only once. An eligible program identified by only one search approach (e.g., only in peer, or only in CGS, etc.) was considered ‘unique’. Data were summarized quantitatively using frequency counts and percentages according to search approach and disability population served.

Results

A total of 478 records were identified from all five search approaches during title- and hand- screening (i.e., peer, grey, CGS, TWBS, CE; Figure 1). Of the 68 CEs contacted, 23 participated and represented a range of stakeholders including community organizations that support people with physical disabilities (n = 12; 52%), PA program coordinators (n = 5; 22%), and disability researchers (n = 4; 17%). Two CEs identified as both a researcher and program developer (9%).

When categorized by population served, programs for individuals with general physical disabilities were most widely identified (n = 23; 31.9%) followed by individuals with stroke (n = 22; 30.6%), Parkinson’s disease (n = 15; 20.8%), spinal cord injury (n = 8; 11.1%), multiple sclerosis (n = 11; 15.3%), amputations (n = 2; 2.8%) and cerebral palsy (n = 1; 1.4%). No programs specifically serving individuals with muscular dystrophy or polio were identified.

Full record review identified a total of 72 PA programs that met criteria (See Supplementary Material for details about the programs that met criteria). All other records were excluded (See Figure 1). The most comprehensive search approach was TWBS, which identified

25 (35.0%) unique programs, followed by CE which identified 12 (17.0%) unique programs. Only four (5.60%) unique programs were identified via CGS. No programs were uniquely identified through peer or grey literature database approaches.

Discussion

To our knowledge, this study is the first to describe and apply a systematic scoping study methodology that serves as a basis for identifying and selecting ‘real-world’ initiatives for the development of an evidence-based KT tool. This systematic scoping study incorporated six systematic scoping study framework components ([11, 12]; Table 2) to comprehensively identify 72 community-based PA programs for persons with physical disability across Canada. Findings indicate that the most comprehensive search approach for identifying unique ‘real-world’ programs was TWBS, followed by CE and CGS. While academic literature approaches (i.e., peer and grey databases) did identify eligible programs, all programs identified from these approaches were also identified by the other remaining approaches (i.e., peer and grey databases did not identify any unique programs). Taken together, these findings suggest that integrating multiple search approaches is a worthwhile and feasible way to identify and select ‘real-world’ initiatives that inform KT tools.

Although the systematic scoping study strategy described in this article may be replicated for future studies that aim to identify ‘real-world’ initiatives, there are important challenges and recommendations for each of the six systematic scoping framework components that warrant discussion. Table 2 has specific details of our challenges and recommendations. Our overall reflections are presented below.

Identifying the research question. The nature of scoping studies is broad and requires researchers to synthesize and describe considerable evidence [11]. To clarify the focus of

scoping studies and hence, the effectiveness of the search strategy, it is recommended the concept, target population and outcomes of interest is clearly defined [11]. We contend that these recommendations are particularly important for systematic scoping studies that identify ‘real-world’ initiatives given that they synthesize evidence from several diverse sources (e.g., websites, brochures and/or reports). For example, the research question in this study was kept broad but the target population (i.e., individuals with specific physical disabilities) and PA program criteria (i.e., aligning with PA guideline recommendations [19–21]) were specified to create clear search parameters. We recommend that researchers conducting systematic scoping studies to identify ‘real-world’ initiatives consult with experts in the field throughout the early stages of identifying the research question to ensure that the purpose of the systematic scoping study: (1) aligns with the intended KT tool outcome; and (2) addresses relevant gaps in evidence-based ‘real-world’ practice. The present study accomplished this recommendation through consulting with Community and Research Partners who provided valuable insights regarding which disabilities to include within the scope of this study. Furthermore, defining the intended KT tool outcome (i.e., Casebook) at the onset of the study with assistance from a KT Advisory Committee facilitated decisions regarding the scope of the search strategy. For example, to develop a Casebook about PA programs, it was necessary that the systematic scoping study methodology allow for the extraction of information such as PA program name, description, population served, geographic location and program coordinator contact information.

Identifying relevant records.

Consistent with Godin et al. [13], the findings of this study suggest that there is value in incorporating grey-literature approaches (i.e., grey databases, CGS, TWBS, and CE) into systematic scoping studies that identify ‘real-world’ initiatives to inform KT tools. In the present

study, TWBS and CE consultation were the search approaches which identified the most unique initiatives. However, there was a disconnect between existing programs and CE program awareness. Specifically, CEs identified 30 eligible programs in total (12 unique), indicating that more than half (58%) of the programs identified via all other search approaches would not have been captured if only CEs were consulted (discussed further below under *Consultation*).

Although PA programs identified through peer-reviewed and grey-databases were not unique (i.e., they were also identified via other search approaches), we contend that the inclusion of these database searches is necessary as other ‘real-world’ initiatives in other contexts may be uniquely identified through these search approaches. In addition, in contexts where these searches are not a key source of information, they may be useful if applied as a validity check for other search sources (e.g., CGS, TWBS, CE). Together, these findings suggest that combining the frameworks employed in previous systematic grey-literature searches [13] and scoping studies [11] is effective for identifying, reporting and addressing important gaps in CE initiative awareness and thus facilitate the development and implementation of KT tools.

Record selection. In agreement with previous studies [11, 23, 24], we recommend that record selection incorporate a diverse team of Community and Research partners to discuss inclusion and exclusion criteria. Specific to identifying ‘real-world’ initiatives, we suggest that the team distinctly define inclusion and exclusion criteria *a priori* for both: (1) database search records, and (2) initiatives. In the present study, inclusion and exclusion criteria for search records aligned closely with those described by Godin et al. [13] and were agreed upon by the team of Community and Research partners during the national CDPP team meeting in May 2016. The findings of our study suggest that distinct database and initiative search criteria can refine

the scope of the search through: (1) tailoring search record inclusion criteria to the diverse search approaches; and (2) ensuring that the initiative inclusion criteria is unambiguous.

Godin et al. [13] describe in great detail the methodological difficulties associated with identifying and selecting records from grey-literature search approaches. We encountered many of the same challenges, such as the misleading nature of some record titles and lack of consistent formatting of grey literature titles, abstracts and/or summaries. We reiterate Godin et al.'s [13] recommendation to screen these records by table of contents, headings, summaries or abstracts, where possible. We further recommend that when uncertain about initiative eligibility, include the search record for additional screening.

Charting the data. For the present study, two authors developed the data-charting form with guidance from the team of Community and Research partners. We recommend clearly defining which variables are relevant to: (a) extract for screening purposes and (b) the resulting KT tool. For example, “program descriptions” and “target audiences” were extracted during screening to determine program eligibility, whereas “province” and “program contact information” were extracted to inform the future KT tool development. Data-charting is an iterative process [11] that involves continuously updating the data-charting form. Adopting this approach can reduce the time burden of charting the data, whilst resolving many uncertainties regarding the nature and extent of data to be extracted for the systematic scoping study and the intended KT tool outcome. We also recommend keeping detailed records of missing information that may only be identified through contacting the initiative (i.e., program providers in this study). Logic models outlining how programs are implemented may also provide variables to consider when creating the data charting form [25].

Collating, summarizing and reporting the results. Previous recommendations [11] were useful in clarifying the analysis, reporting and implications of the systematic scoping study results. In addition, we suggest that the purpose of the KT tool determine the degree to which the systematic scoping study summarizes the characteristics of included initiatives. We recommend that systematic scoping studies conducted as the basis for developing KT tools provide explicit detail about how the findings relate to the intended KT tool. For example, the findings of this study systematically identify a comprehensive list of programs that will guide the development of a Casebook describing how community-based PA programs for persons with disability foster quality participation across Canada.

Consultation. Consultation with stakeholders should be considered an essential component of scoping study methodology [11] and we suggest that decisions regarding who to consult occur at the onset of the study. Furthermore, to effectively engage stakeholders, researchers should clearly establish a purpose for the consultation [11]. We recommend that systematic scoping studies differentiate between consultation with: (1) CEs (i.e., a distinct grey-literature search approach); (2) Community and Research partners (i.e., research design and execution) and (3) KT Advisory Committee members (i.e., KT tool developers). We believe these distinctions offer several opportunities.

First, the present study, along with Godin et al. [13] clearly demonstrate the usefulness of considering CEs a distinct source of grey-literature. In both studies, 42-60% of the included results were identified via CE consultation. Importantly, while Godin et al. [13] report that no items were uniquely identified via CE consultation, in the present study, approximately 17% (n = 12) of the included programs would not have been captured without consulting CEs. As suggested by Levac et al. [11], methodologies that consult experts specifically to validate the

scoping study findings risk not capturing important gaps in CE awareness - information that is particularly useful for researchers interested in closing research-to-practice gaps. Our finding highlights that a meaningful gap in ‘real-world’ initiative awareness may exist among CEs in the field; however, it is possible that a more comprehensive method of selecting CEs for consultation may have more adequately captured CEs’ awareness. Indeed, while pre-determining the type of experts to consult proved useful, we report challenges associated with systematically identifying CEs. Future studies may benefit from developing clear search methodology and inclusion criteria for identifying and selecting CEs to ensure diverse perspectives are represented.

Second, in the present study Community and Research partner perspectives were consulted throughout each component of the systematic scoping study methodology, which allowed the authors to adopt an integrated KT approach [26]. Importantly, knowledge users of the KT tool (i.e., CDPP partners) were able to contribute to each component of the research process and facilitate the development of research relevant to those likely to apply it. Academic and community partnerships in this context may provide valuable information relevant to program design.

Finally, while earlier frameworks have considered stakeholder consultation a knowledge transfer mechanism [11], we suggest that distinct KT tool development and dissemination can serve the purposes of knowledge transfer following systematic scoping studies that identify ‘real-world’ initiatives. Therefore, consultation with an established KT Advisory Committee throughout KT tool development is warranted to provide informative insights into what additional ‘on-the-ground’ information should be collected and disseminated.

Conclusion

Utilizing a systematic scoping study methodology is a worthwhile and feasible approach to comprehensively identify and select ‘real-world’ initiatives and thus, provide the foundation for the development of evidence-based KT casebooks. This paper extends previous systematic scoping study methodology frameworks by providing thorough recommendations for the implementation of this methodology for the identification of community-based PA programs for persons with disabilities across Canada. Programs identified using this search strategy will be included in the development of a Casebook describing how quality participation is fostered among members within community-based PA programs

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Table 1. Criteria for Search Records and PA programs

Inclusion Criteria	Exclusion Criteria
A. Search Record Criteria	
Available in English	Unavailable in English
Published from 2000 – 2016	Published before 2000 or after 2016
Intended audience is practitioners, health care providers, clients (e.g. fitness sector)	Intended audience is policy makers.
B. Community-Based PA Program Criteria	
Appropriate for PA among adult (18+ yrs) persons	Specifically targets children (<17 yrs)
Intended specifically for persons with physical disabilities	Specifically targets persons with developmental/cognitive disabilities
Intended for community-dwelling individuals	Intended for individuals in assisted living
Delivered in Canada	Delivered outside of Canada
PA programs were described as any group or individualized program that can provide the opportunity for participants to meet either the aerobic and/or resistance training recommendations in PA guidelines for special populations	Described PA guidelines/recommendations only
	Described information resources only
	Described training resources only
	Intended as therapy of rehabilitation only
Offered weekly sessions ^a	Did not offer weekly sessions

Notes. PA, Physical Activity; yrs, years. ^a Inclusion criteria was selected to allow participants to meet the PA guidelines on a weekly basis (i.e., programs allow for maintenance of PA behavior).

Table 2. Summary of ‘real-world’ initiative systematic scoping study challenges and recommendations.

Arskey and O’Malley [12] Framework	Levac et al. [11] Scoping Study Framework Recommendations	‘Real-world’ Initiative Search Methodology Applicability	Challenges	Evidence-based ‘Real-world’ Initiative Search Methodology Recommendations
1. Identifying the research question	<p>1. Clearly articulate the research question that will guide the scope of inquiry. Consider the concept, target population, and health outcomes of interest to clarify the focus of the scoping study and establish an effective search strategy.</p> <p>2. Mutually consider the purpose of the scoping study with the research question. Envision the intended outcome (<i>e.g.</i>, framework, list of recommendations) to help determine the purpose of the study.</p> <p>3. Consider rationale for conducting the scoping study to help clarify the purpose.</p>	<p>1. Research question and target population were clearly defined prior to study start with input from CDPP partners. Effective search strategy was established with assistance from a librarian with expertise in health science.</p> <p>2. The purpose of the present study is to describe and apply systematic scoping study methods for the identification of ‘real-world’ initiatives relevant for the development of KT tools.</p> <p>Programs identified using this search strategy will be included in the development of a Casebook of community-based PA programs for persons with physical disability across Canada.</p> <p>3. Rationale closely related to intended outcome of systematic scoping study. Conducting the systematic scoping study was identified as a necessary first step in identifying and selecting ‘real-world’ initiatives for evidence-based practice.</p>	1. Defining the target population to ensure applicability of the intended KT tool while also balancing study feasibility was difficult.	<p>1. Consult with Community and Research partners throughout components 1 to 3 to ensure the defined target population is broad but feasible.</p> <p>2. In addition to systematic scoping study purpose, consult with a KT Advisory Committee to clearly define intended KT tool prior to study start.</p> <p>3. Include rationale for conducting evidence-based search methodology for compiling KT tools.</p>
2. Identify relevant search records	<p>1a. Research question and purpose should guide decision-making around the scope of the study.</p> <p>1b. Assemble a suitable team with content and methodological expertise that will ensure successful completion of the study.</p>	<p>1a. Clear research purpose of systematically identifying Canadian community-based PA programs for future Casebook development helped refine study scope. Identifying ‘real-world’ initiatives necessitated that peer and grey-literature search approaches be included in the review [13].</p> <p>Decisions regarding academic databases deemed most relevant for identifying ‘real-world’ PA programs were made in consultation with a health sciences librarian.</p> <p>As per recommendations from Godin et al. [13] a ‘two-click’ cut off was implemented, whereby only programs identified within two webpage clicks of the initial search record were considered for inclusion.</p> <p>1b. Multiple Community and Research partners contributed to the selection of search-terms. Search strategy methodological decisions were made primarily by two authors and involved consultation with a health sciences librarian.</p>	<p>1a. Limiting the number of databases included in the study was difficult and required consultation with a health sciences librarian.</p> <p>Each search approach (peer, grey, CGS, TWBS) had unique search functions and filtering options which made searching consistency difficult between search approaches.</p> <p>Several academic databases originally deemed relevant did not result in any record ‘hits’ using the nine pre-determined combinations of search terms and were, therefore, excluded from the study.</p> <p>1b. Time constraints made assembling a team of experts difficult.</p>	<p>1a. Incorporate several search approaches including peer-reviewed and grey-literature databases, TWBS, CGS and consultation with CEs.</p> <p>Record and discuss decisions made regarding search functions and filtering with two authors.</p> <p>Consider continuous re-evaluation of relevant peer- and grey-databases.</p> <p>1b. Explicitly define what is meant by ensuring successful completion of the study prior to study start. **</p>

	1c. When limiting scope is unavoidable, justify decisions and acknowledge the potential limitations to the study.	1c. To ensure balance between feasibility and comprehensiveness, nine search term combinations were utilized and filtered by relevance (where possible) such that the first 100 records from each search underwent title screening [13].	1c. Grey-literature records that underwent title screening were at times ambiguous. Not all grey-literature search approaches allow filtering by relevance.	1c. When uncertain about search record eligibility, include search record for further screening. Pre-determine a 'title-screening' limit with research team and document search approach limitations [13].
3. Record selection	1. This stage should be considered an iterative process involving searching the literature, refining the search strategy, and reviewing articles for study inclusion. 2a. At the beginning of the process, the team should meet to discuss decisions surrounding study's inclusion and exclusion criteria. At least two reviewers should independently review abstracts for inclusion. 2b. Reviewers should meet at the beginning, midpoint and final stages of the abstract review process to discuss challenges and uncertainties related to study selection and to go back and refine the search strategy if needed. 2c. Two researchers should independently review full articles for inclusion. 2d. When disagreements on study inclusion occur, a third reviewer can determine final inclusion.	1. Discussion among two authors occurred throughout every stage of the review process to re-assess and refine the search strategy and program inclusion criteria when uncertainty arose regarding program inclusion. Additional perspectives were gathered from the Community and Research partners when necessary. 2a. Clear and specific search record and program inclusion criteria were defined by the authors and a team of CDPP partners at the start of the study. Two reviewers independently reviewed the records of one search term combination to ensure that records selected warranted a full record review. 2b. In collaboration with a health sciences librarian, two authors refined study selection and database search strategies at all stages of screening. 2c. Two reviewers independently reviewed full records for inclusion. 2d. The two researchers who independently reviewed full records for inclusion met to discuss and address screening disagreements. A third reviewer was not required in the present study.	1. Differences in how program information was presented made record selection time consuming. 2a. Inclusion criteria for programs differed from inclusion criteria for academic database search records (e.g. publication date, English language, and intended audience was only relevant for academic databases). 2b. Grey-literature approaches did not often have abstracts available for review. Inaccurate grey-literature titles were at times misleading and contributed to the time-consuming nature of record selection. Inconsistent reporting of program descriptions made it difficult to determine whether the programs allowed participants to achieve the recommended Canadian PA guidelines. 2c. Differences in how reviewers record program information made it difficult to cross-reference programs for inclusion/exclusion.	1. Limit screening to within 'two clicks' of the original search record [13]. Pre-determine data charting form to facilitate smooth data extraction. 2a. Differentiate between 'database search record' inclusion criteria and 'initiative' (i.e., program) inclusion criteria prior to study start. 2b. In accordance with Godin et al. [13] screen records by table of contents, headings, summary or abstract, where possible. When uncertain about initiative eligibility, include the initiative in the study for further screening. 2c. Consider two researchers independently reviewing full records for inclusion an essential component. Ensure both reviewers are clear on the interpretation of the initiative inclusion and exclusion criteria. Recognize this component as an iterative process that requires open discussion. Record and discuss decisions made in an effort to streamline future discussions regarding initiative inclusion and exclusion.

<p>4. Charting the data</p>	<p>1a. The research team should collectively develop the data-charting form and determine which variables to extract in order to answer the research question.</p> <p>1b. Charting should be considered an iterative process in which researchers continually extract data and update the data-charting form.</p> <p>1c. Two authors should independently extract data from the first five to ten included studies using the data-charting form and meet to determine whether their approach to data extraction is consistent with the research question and purpose.</p> <p>2. Process-oriented data may require extra planning for analysis. A qualitative content analysis approach is suggested.</p>	<p>1a. Two authors contributed to the development of a data-charting form. Variables to extract included program name, target audience, program description, contact information and province.</p> <p>1c. The nature of grey-literature record review makes consistent data-extraction difficult. This recommendation may not apply to scoping study methodologies that include grey-literature approaches.</p> <p>2. This recommendation may not apply to systematic scoping study methodologies that establish the foundation of KT tools.</p>	<p>1a & b. Variables for extraction were not presented consistently across grey-literature approaches. For example, the province of program delivery was not consistently identified within the ‘two-click’ cut off for all records. As a result, extracting provincial information was difficult as many programs are offered in several provinces and may have been excluded as a duplicate before provincial information was obtained.</p> <p>1c. Some information necessary to complete screening was not always clearly described in grey-literature records.</p>	<p>1a & b. Authors and a KT Advisory Committee should define variables to be extracted for the KT tool in the data-charting form so researchers can continuously add in relevant information. **</p> <p>1c. Keep detailed records of missing information that may be extracted after contacting initiative providers. **</p> <p>Consult with identified program providers to determine whether the program as described through peer- or grey-literature records accurately describes initiatives. Confirm with initiative providers that initiative meets inclusion criteria. **</p>
<p>5. Collating, summarizing, and reporting the results</p>	<p>Researchers should break this component into three distinct steps:</p> <p>1a. Analysis (including descriptive numerical summary analysis and qualitative thematic analysis);</p> <p>1b. Reporting the results and producing the outcome that refers to the overall purpose or research question;</p>	<p>1a. Numerical summary analysis was conducted to determine the number of programs identified across Canada. Other analysis included categorizing programs according to population served.</p> <p>1b. Program results identified by each search approach were reported separately to highlight usefulness of each source for identifying ‘real-world’ PA programs for person with physical disability across Canada.</p>	<p>1a and b. Removing duplicate search records was difficult due to inconsistencies in how program names were reported across various search sources; thus, delaying data analysis.</p>	<p>In agreement with Levac et al’s [11] recommendations, provide rigorous detail when describing the analysis and results sections.</p> <p>1a and b. Recognize how the quality of data charting impacts the ability to analyze the results.</p> <p>Consider what additional data is necessary to extract to facilitate more efficient data analysis. For example, including more detail regarding initiative description and location may facilitate the swift identification of duplicates.</p>

	1c. Consider the meaning of the findings as they relate to the overall study purpose; discuss implications for future research, practice and policy.	1c. The comprehensiveness of different search approaches was identified, which allowed for the thorough identification and selection of relevant 'real-world' PA programs for person with physical disability.		1c. Future implications should relate back to the importance of implementing evidence-based systematic scoping methodology for identifying 'real-world' initiatives and thus, the development of KT tools. Provide detail regarding the intended KT tool that is generated from the systematic scoping study results.
6. Consultation	1. Consultation (with stakeholders) should be an essential component of scoping study methodology. 2a. Clearly establish a purpose for the consultation. 2b. Preliminary findings can be used as a foundation to inform the consultation.	1. Consultation was considered essential and occurred in three forms: (i) CE consultation: In accordance with Godin et al. [13], the present study included contacting CEs as an independent grey-literature source. This included contacting CDPP partners who were not involved in the study design or KT tool development as well as individuals identified via hand-searching. (ii) Community and Research partner consultation: A team of CDPP researchers and community partners were consulted throughout the study to ensure the methodology addressed relevant community needs. (iii) KT Advisory Committee consultation: An Advisory Committee of researchers, program providers, and participants was developed to provide guidance regarding KT tool development. 2a. CEs were contacted to determine their knowledge of PA programs for persons with physical disability. They were considered an independent source of important 'real-world' initiative information. Community and Research partners were contacted to guide systematic scoping study methodology. KT Advisory Committee members were contacted to provide guidance for the development of the KT tool that will emerge from systematic scoping study results. 2b. This recommendation did not apply to the present paper as the purpose of CE consultation was clearly defined as an independent source of relevant 'real-world' initiative information. Programs identified via other search approaches were not disclosed to CEs so that the programs identified by CEs could be evaluated independent of other search sources.	At times overlap between the expertise of the various consultation forms made distinguishing the roles for the consultation forms complex. Wait times associated with receiving feedback from various stakeholders extended the length of time required for each component of the study.	1. At study start, determine relevant experts to consult. Differentiate between CE consultation, Community and Research partner consultation, and a KT Advisory Committee consultation. Establish regular meetings in advance (e.g. one standing meeting per month) with relevant stakeholders to ensure updates and feedback are provided in 'real-time'. ** 2a. Clearly establish the purpose of (1) CE consultation; (2) the Community and Research partner consultation; and (3) the KT Advisory Committee consultation. To limit the time burden on relevant experts, ensure that there is no overlap between individuals contacted for the various forms of consultation. 2b. Consider CEs a distinct source of 'real-world' initiative information to allow for comparisons between their knowledge and content accessible to the public. Findings regarding CEs initiative awareness can be used as a foundation to inform KT tools addressing CE awareness.

2c. Clearly articulate the type of stakeholders to consult and how data will be collected, analyzed, reported and integrated within the overall study outcome.

2c. This recommendation is relevant for consultation with CEs. CDPP partners as well as other CEs (i.e., program developers, coordinators, researchers and/or organizations) identified throughout phase one of screening were contacted. Data extraction mirrored the other search sources. Program information obtained from CEs was collected, analyzed, reported and integrated with all other search sources to document all PA programs for persons with physical disabilities available in Canada.

2c. Applying systematic methods to identify CEs was difficult. No clear methodology exists to comprehensively select experts to contact; however, contacting existing partner organizations (i.e. CDPP) offered direction.

2c. Determine organizations, Advisory Committees and/or community organizations that are relevant CEs prior to study start.

Develop inclusion criteria and search methodology for identifying CEs throughout scoping study to ensure diverse perspectives are included.**

2d. Incorporate opportunities for knowledge transfer and exchange with stakeholders in the field.

2d. Study purpose was to systematically identify and select 'real-world' initiatives to provide guidance for the development of future KT casebooks and thus, evidence-based PA practice.

2d. Suggest incorporating KT tool development as a distinct outcome of 'real-world' initiative systematic scoping studies.

Notes. CDPP; Canadian Disability Participation Project, PA; physical activity, KT; knowledge translation, CGS; custom google search, TWBS; targeted web-based search, CE; content expert. ** Recommendations suggested as a result of lessons learned, but not implemented in the present study.