



Exercise is Medicine® Canada on Campus Casebook: Evaluation of a novel knowledge translation tool and lessons learned

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ABSTRACT

The Exercise is Medicine® Canada on Campus (EIMC-OC) program aims to integrate exercise prescription into healthcare and encourage students to implement physical activity initiatives on campus. However, multi-site interventions like EIMC-OC are often challenged with communicating and sharing strategies across geographically dispersed groups. The EIMC-OC Casebook was created as an accessible method to enhance program success by sharing ideas and implementation strategies between groups, but its potential utility is unknown as few studies have evaluated casebooks. This study evaluated the usability and value of the EIMC-OC Casebook for promoting physical activity and established end-users' insight on Casebook future directions. The Casebook was shared and semi-structured interviews were conducted with established and developing EIMC-OC groups. Five themes discussing the usability, value, and future directions of the Casebook were identified. Participants implemented the Casebook to varying degrees, found it to be a valuable communication medium, and recommended revisions, which may enhance its implementation. The EIMC-OC Casebook is a valuable tool that exemplifies campus-based efforts to promote physical activity, augments between-group communication, and helps groups conduct effective initiatives. Program leaders and researchers may benefit from a similar Casebook approach, and recommendations are provided to evaluators aiming to enhance the effectiveness of multi-site programs.

1. Introduction

Despite convincing evidence supporting the importance of regular physical activity (PA) on health (Lee et al., 2012; Piercy et al., 2018), approximately 10 % of adults meet the recommended 150 min of moderate-to-vigorous intensity PA per week (Clarke et al., 2019; Zenko et al., 2019) and upwards of 62 % of university and college students are insufficiently active (American College Health Association, 2019, 2020). Thus, it is increasingly important for health practitioners at all levels to prioritize the implementation of evidence-informed knowledge translation (KT) initiatives that aim to close the gap between what we know about PA and how this knowledge is applied.

Exercise is Medicine® (EIM) is a global health initiative that was co-launched in 2007 by the American College of Sports Medicine (ACSM)

and the American Medical Association. Today, it consists of programs in 43 countries (ACSM, 2020), including the EIM Canada (EIMC) program launched in 2012 by the Canadian Society for Exercise Physiology. The goals of EIMC are to increase the number of healthcare professionals who are assessing, prescribing, and counseling patients in PA, and facilitate collaboration between professionals in the prevention and treatment of chronic disease (EIMC, 2020).

In 2013, the EIMC on Campus (EIMC-OC) program was launched and calls upon faculty, staff, and students from universities and colleges to foster collaborative relationships between exercise and healthcare professional trainees who support the EIMC philosophy. Currently, EIMC-OC groups are formally established at 38 universities and colleges across Canada (EIMC, 2020) and provide opportunities for students to plan and implement initiatives in any of the following four categories:

Abbreviations: ACSM, American College of Sports Medicine; DOI, diffusion of innovation; EIM, Exercise is Medicine®; EIMC, Exercise is Medicine® Canada; EIMC-OC, Exercise is Medicine® Canada on Campus; PA, physical activity.

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PA awareness and promotion; educational workshops for students and/or community members; consulting with campus Student Health Services or primary care networks; and curriculum development for healthcare professional trainees (e.g., medical students, nursing students) that includes PA as a chronic disease prevention and management strategy (EIMC, 2020). While groups are encouraged to develop initiatives from all four categories, group implementation varies greatly due to local context and group member interests, strengths, and resources (McEachern et al., 2019). Indeed, groups face unique barriers and facilitators, which is common among multi-site groups within and outside of EIMC-OC (Forman et al., 2009; Hall et al., 2014; McEachern et al., 2019). Furthermore, the geographical distance between groups makes regular communication difficult. Resultantly, the Director of EIMC expressed a need for a communication tool that could optimize interactions between the national body and EIMC-OC groups, as well as between EIMC-OC groups. An information-sharing resource highlighting factors that influence the implementation success of EIMC-OC groups was desired to increase unity and enhance program success.

As such, the EIMC-OC Casebook (herein “Casebook”) profiling 12 EIMC-OC groups was developed (as shown in Electronic Supplementary Material Item 1; also available from https://www.exerciseismedicine.org/canada/support_page.php/eimc-on-campus/). Casebooks, resources containing an array of information on a particular topic, have recently gained popularity as a novel KT tool for sharing ground-level experiences through an informal approach (Covvey et al., 2020; Providenza et al., 2017; Public Health Agency of Canada, 2015). For example, the *Casebook on Use of Intervention Evidence in Health Promotion and Chronic Disease Prevention* profiles five cases highlighting different approaches to gathering and applying evidence in health promotion practice and policy (Public Health Agency of Canada, 2015). However, there is a paucity of research evaluating the usefulness of casebooks as KT tools, findings of which could aid evaluators and program planners in improving their practice. To our knowledge, only one study has undertaken casebook evaluation (Bonder et al., 2020), though their evaluation was of an educational workshop that provided training on how to use their casebook. Thus, it is unclear whether the positive evaluation was due to the workshop or the casebook’s attributes alone. It is important to evaluate casebooks separately to decipher which casebook features facilitate their use among end-users.

The Diffusion of Innovations (DOI) framework is an effective guiding framework for examining how and why innovations, such as casebooks, are disseminated and implemented (Ashley, 2009). The diffusion process begins with innovation dissemination, but continues throughout five stages of innovation adoption (i.e., knowledge, persuasion, decision, implementation, confirmation; Rogers, 2003), which can help explain decisions to adopt an innovation. The DOI framework states that factors, such as communication networks and the social and institutional context, influence adoption and should be considered when evaluating an innovation’s effectiveness. Therefore, we deemed the DOI framework highly relevant in guiding our Casebook evaluation.

Accordingly, the primary purpose of this study was to conduct a theory-based evaluation on the usability and value of the EIMC-OC Casebook and establish end-users’ insight on Casebook future directions. These findings will inform future iterations of the Casebook so EIMC-OC groups may successfully meet their goals and fulfill the overall EIMC mission. The secondary purpose of this study was to share our evaluation process to benefit researchers, evaluators, and program leaders across disciplines in developing and implementing KT casebooks to multi-site programs, which may facilitate communication and sharing of experiences across sites and increase overall program success.

2. Methods

2.1. Participants and recruitment

Participants were sampled by voluntary response among

“established” EIMC-OC groups (i.e., groups featured in the Casebook) and “developing” EIMC-OC groups (i.e., groups established after Casebook development). Eligible participants were current executive members (i.e., President or Vice-Presidents) of an EIMC-OC group who could comment on the group’s current needs, goals, initiatives, and use of the Casebook, and who had provided an email address during the Casebook development phase (established groups) or were identified by the EIMC Director (developing groups). Ethical approval for this study was obtained and potential participants were invited to participate via email in October 2016. This study is reported in compliance with the Qualitative Research Review Guidelines (checklist shown in Electronic Supplementary Material Item 2; Clark, 2003).

2.2. Procedure

Prior to their interview, EIMC-OC group representatives were sent a preliminary electronic survey to gather group characteristics, and an electronic copy of the Casebook to review. Interviews were conducted by two undergraduate honours research students: one conducted all interviews with established EIMC-OC groups and the other conducted all interviews with developing EIMC-OC groups. At the start of interviews, interviewers offered general introductions to participants, expressed appreciation for their participation, and allowed time for questions. Subsequently, participants verbally consented to partake in the study prior to the interviewer beginning the recording. Representatives participated in one semi-structured interview over Google Hangouts. Informed by the DOI framework, the interview guide (shown in Electronic Supplementary Material Item 3) included 26 questions based on the five-stage decision-making process for innovation adoption (Rogers, 2003). Questions were framed according to the characteristics that enhance innovation diffusion (i.e., usability, compatibility, trialability, complexity, and relative advantage; Rogers, 2003) to explore the barriers or facilitators to Casebook use, which may inform future iterations of the Casebook, thereby increasing its value as a standalone KT tool.

2.3. Data analysis

Interviews were audio-recorded and transcribed verbatim prior to a six-phase thematic analysis (Clarke & Braun, 2014). As mentioned, and in support of fostering trustworthiness, two researchers undertook the thematic analysis to add complexity and richness to our findings (Tracy, 2010). Researchers first familiarized themselves with the data, generated initial codes, organized codes into preliminary themes, and categorized relevant data for each theme for their respective group’s interview transcripts (i.e., one researcher analyzed and coded for developing EIMC-OC groups, and one analyzed and coded for established EIMC-OC groups). An inductive, “bottom-up” approach was used to establish purely data-driven patterns unconfined to a pre-existing framework. The data was then coded at a semantic level to identify themes that were explicitly stated by participants. Preliminary themes were reviewed to ensure they encompassed information from the coded excerpts and the entire data set, then underwent further analysis and refinement. As the DOI guided the interview, themes were then mapped deductively to the five decision-making stages (see Table 1 for operationalization to our study). At each step, the second researcher acted as a critical friend (i.e., someone familiar with the research topic who supports the researcher in being reflexive and self-aware; Clarke & Braun, 2014) to strive for sincerity in our findings (Tracy, 2010). Critical friends also helped to clarify meaning between their approaches and collaborate on the thematic analysis iteratively. Participant quotations were anonymized to ensure confidentiality.

3. Results

Executive members from 6 established and 5 developing EIMC-OC groups participated in the study (see Table 2 for group

Table 1

Illustrative quotations for each of the five themes and associated subthemes, and Rogers' (2003) Diffusion of Innovation (DOI) theory definitions including their operationalization to this study.

DOI Domain/ Theme	Rogers' (2003) DOI Definition	Operationalization	Subthemes	Illustrative Quotations
Knowledge	Individual is aware of the innovation and its function	Group is aware of the Casebook and how it functions	Improved marketing of the Casebook	<p>"[had received an] email just kind of highlighting that the Casebook was available... [but] were not really sure what it was" (D01).</p> <p>"[had heard about] the possibility of developing [the Casebook, but had] never actually received it" (D02).</p>
Persuasion	Individual has a positive or negative attitude toward the innovation	Group develops a positive or negative perception of the Casebook	Low complexity of layout	<p>"pretty easy read" (E05)</p> <p>"I really don't know if things could get better or not" (D05).</p> <p>"It's a little long. I don't know how you would make it smaller. The information that's there is all good" (E06).</p>
			Acceptable length	<p>"[Users could read] chunks that are relevant to [them] and avoid the things that [they] may not think are as relevant" (D01).</p> <p>"[the] ratio of charts and visual aids versus text [helped reduce the] feel[ing] that there's too much text" (E02).</p> <p>"it was nice to have the tables at the end to summarize" (D01).</p>
			Appropriate visual aids	<p>(suggestion: webinars) "[to] see what everyone is doing currently and...if they are struggling with something and they want input from other groups" (E01).</p> <p>(suggestion: interactive online forum) "[to provide an] evolving source of information [in] real-time [versus a] stagnant book" (E02).</p>
			Alternative mediums of knowledge dissemination	
			Value as a communication tool	<p>"knowledge sharing tool" (E04, E07)</p> <p>"[providing a] group message [rather than] individual on campus groups...because it is very easy to feel disconnected" (E04).</p> <p>"[learn] what really worked" (D02).</p>
			Relative advantage of viewing group barriers and facilitators	<p>"even the bigger schools have barriers" (E06).</p>
			Relative advantage of viewing group initiatives	<p>"you could see 'oh this group does x, y, and z, this is how they run their club, their structure and this is how they run their events.' And then here is a club on the other side of the country doing similar initiatives in a completely different way" (D03).</p> <p>"know what the different schools were doing depending on their size and specialties." (D02).</p>
Decision	Individual engages in activities that lead to a decision to adopt or reject the innovation	Group performs activities that result in their decision to use or not use the Casebook	Incompatibility with needs and goals of groups	<p>"I think it is very useful for groups that are just starting or in the beginning stages of their group development, but for us, we didn't find it useful...we are usually the people that the groups come to ask for information to get started, so I think some of the information that we would gather may not be as pertinent to where our group is headed, except for general interest" (D02).</p> <p>"troubleshooting they [established groups] did, and the initial barriers that they faced, which would be very helpful for [developing groups] to have some guidance going forward and [to] avoid some of those missteps" (D01).</p>
			Additional information	<p>"how this group got funding...and contacted [their] community partners" (E02).</p> <p>"[The Casebook] did not really explain what was necessary, like what resources and connections... [like a] thesis with no methodology" (E03).</p>
			Altered structure and organization	<p>"all of the ideas for events in one spot regardless of what schools have done it but list how many schools have done it" (D03)</p>
Implementation	Individual puts the innovation to use	Group begins to use the Casebook	Degree of utilization	<p>"we do like our volunteers to generate ideas as well...I think that giving them the opportunity [to brainstorm using the Casebook] does make them feel a little more included" (E04).</p> <p>"even with the turnover in students, the group will continue to be successful year after year" (E03).</p> <p>"[Those] in charge of planning, goal-setting, and events should re-read the Casebook" (D02).</p>
			Timing of utilization	<p>"I think it will...be helpful going forward just because it does a good job highlighting schools that are at different</p>

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Table 1 (continued)

DOI Domain/ Theme	Rogers' (2003) DOI Definition	Operationalization	Subthemes	Illustrative Quotations
Confirmation ¹	Individual evaluates outcomes of prior decisions to use the innovation	Group evaluates the outcomes of their decision to use the Casebook	—	—

Note: Any words added to participants' quotes to clarify meaning are presented in square brackets.

E = Established group (e.g., E02).

D = Developing group (e.g., D02).

¹ No groups were found to have reached the Confirmation stage. Therefore, there are no representative subthemes or quotations for this theme.

Table 2

Characteristics of Exercise is Medicine® Canada on Campus groups who participated in the current study.

Characteristic	Established groups n = 7	Developing groups n = 5
Type of Institution		
College		1 (20.0)
University	7 (100.0)	4 (80.0)
Province		
Alberta	1 (14.3)	1 (20.0)
British Columbia		2 (40.0)
Manitoba		
Nova Scotia	1 (14.3)	
Ontario	5 (71.4)	2 (40.0)
Quebec		
Campus Population		
< 10,000	2 (28.6)	2 (40.0)
10,000–20,000	1 (14.3)	1 (20.0)
20,000–30,000	3 (42.9)	
> 30,000	1 (14.3)	2 (40.0)
Group's Launch Year		
2013	2 (28.6)	
2014	3 (42.9)	
2015	2 (28.6)	
2016		5 (100.0)

characteristics). In total, 18 individuals from 12 groups participated across 11 interviews (i.e., some interviews had >1 participant), which lasted an average of 39:18 (ranging from 27:00 to 1:00:15). Previous research has suggested that this number of interviews is sufficient for data saturation (Ando et al., 2014; Guest et al., 2006). In total, there were 5 interviews that involved >1 participant (i.e., 4 involved 2 participants, 1 involved 3 participants), in which responses were provided as a group (i.e., participants offered similar responses within a group or built upon each other's responses in agreement). Five separate themes emerged, each with their own subthemes. Each theme is titled after one of the five stages of the DOI decision making process, whereby each subtheme highlights whether and how the groups reached the stages, potential reasons they could not progress to subsequent stages, and ways the Casebook (i.e., the innovation) could be altered to promote stage progression. As researchers' analyses were similar to each other, no reconciliation between analyses was required. Table 1 provides illustrative quotations for each subtheme.

3.1. Stage 1: knowledge

The knowledge stage requires awareness of the innovation's existence and how it may be used (Rogers, 2003). Groups were identified as reaching this stage if they were aware of the Casebook and its contents. This theme was only relevant to the developing EIMC-OC groups since

established EIMC-OC groups participated in Casebook development.

3.1.1. Improved marketing of the Casebook

Prior to this study, every developing EIMC-OC group had minimal knowledge about the Casebook. Many participants attributed their lack of knowledge of the Casebook's existence to its lack of promotion. Participants suggested a variety of ways to enhance the marketing of future Casebook versions, such as distribution through email, and further marketing through Facebook and other forms of social media. Moreover, groups emphasized the importance of marketing the Casebook as a resource that can provide a relative advantage when used; for example, highlighting Casebook content (e.g., initiatives and fund-raisers) that would be useful to groups rather than simply informing groups about its existence.

3.2. Stage 2: persuasion

In this stage, individuals develop a positive or negative attitude towards the innovation (Rogers, 2003). Participants who reached this stage were those who had formulated opinions on the Casebook's contents. Hence, this theme encompassed subthemes regarding the Casebook's layout, length, format, and medium of dissemination.

3.2.1. Low complexity of layout

Many participants stated that the simplicity of the Casebook's layout facilitated its use. Specifically, groups found the concise bullet points made the Casebook easy to read and the consistent, logical categories allowed users to quickly and easily find information. Many groups emphasized that the layout was ideal, suggesting a similar layout be considered for future Casebook versions.

3.2.2. Acceptable length

The length of the Casebook was cited as a deterrent to its use for many participants, especially those who lacked motivation to use it or faced time-constraints. However, the same participants also expressed that the Casebook's current length facilitated its comprehensiveness. Some participants described that the length was acceptable, relating it to a textbook such that they could choose to reference sections individually.

3.2.3. Appropriate visual aids

To increase usability, the Casebook was refined so that information was provided in alternative formats, including tables and flowcharts. This balance between text and charts appeared to enhance groups' options when using the Casebook. For instance, groups read the text when they wanted more detailed information and the tables when they wanted a summary. The general consensus was that groups would not change the visual aids henceforth.

3.2.4. *Alternative mediums of knowledge dissemination*

Participants suggested a variety of alternate Casebook mediums, such as releasing portions of the Casebook as newsletters. For example, a newsletter focused on group structure could be released in December since groups are typically well-established by this time. Other suggestions included a monthly or bi-monthly webinar and an interactive online forum.

3.3. *Stage 3: decision*

The third stage involves formulating an opinion about the innovation (Rogers, 2003). In other words, groups may choose to either “adopt” the innovation by deciding to use it or “reject” the innovation by deciding not to use it (Rogers, 2003). Groups were identified as having reached this stage if they considered using the Casebook. Subthemes identified focused on the value of the Casebook as a whole and the value of the Casebook’s contents and organization.

3.3.1. *Value as a communication tool*

Groups greatly valued the Casebook as it allowed them to communicate their experiences with one another and connect with geographically dispersed groups. As elaborated by one group, the Casebook reinforced group coherence by emphasizing the work of each group as part of the shared EIMC experience. Overall, one of the most helpful aspects of the Casebook was how it facilitated discussion and feelings of cohesion among different groups.

3.3.2. *Relative advantage of viewing group barriers and facilitators*

Multiple EIMC-OC groups mentioned that a primary benefit of reading the Casebook was learning about other groups’ barriers and facilitators. This information helped groups learn from other groups’ challenges and plan successful initiatives. The inclusion of schools with diverse characteristics (i.e., campus size) was also cited as particularly useful because it ensured that barriers and facilitators of different groups were represented. Moreover, the barriers and facilitators sections aided groups’ motivation, as seeing both small and large groups face challenges when implementing initiatives validated smaller groups’ struggles.

3.3.3. *Relative advantage of viewing group initiatives*

Another commonly cited benefit of the Casebook was the inclusion of initiatives and events that groups have implemented. This section offered with new ideas and insight on the range of EIMC-OC efforts based on school size and specialty. It portrayed the various settings and constraints different groups faced, which alluded to what is possible within one’s own setting. For instance, developing groups could view other schools’ events to see a range of potentialities (e.g., funding ideas) that could be facilitated within their own group, which instilled confidence and motivation among group members.

3.3.4. *Incompatibility with needs and goals of groups*

The Casebook was not compatible with the needs and/or goals of established or developing EIMC-OC groups, which reduced its adoption. For example, group goals included creating a bond with the Faculty of Medicine at their respective schools to influence medical curriculum changes. Although the Casebook listed that some of the universities had established these changes, there was little information about the process and strategies used. Hence, groups still had to alter these ideas to enhance feasibility at their schools, suggesting that the Casebook’s generality reduces its utility and compatibility with groups’ goals.

Established and developing groups had opposing perspectives on who could benefit most from the Casebook. Multiple developing groups suggested that many barriers they faced are not addressed in the Casebook (e.g., limited money, space, members); thus, they felt the Casebook would be more valuable to established groups. However, established groups suggested they were already too evolved to need and implement

the Casebook. Indeed, one established group did not find the Casebook entirely pertinent.

3.3.5. *Additional information*

Several groups proposed that additional content included in a revised Casebook would enhance their decision to use it. Groups elaborated on the need for greater step-by-step instructions in two categories. Firstly, developing groups could benefit from more specific information about the early stages of group development to better understand group establishment. Secondly, groups expressed interest in detailed instructions for implementing initiatives. Smaller schools yearned to see advice from larger schools discussing what they should focus on in current and future stages. Though the “barriers” section was useful, its usability would have been increased by including steps to overcome the listed barriers. For instance, a common barrier was a lack of funding, but the Casebook did not explicate how groups addressed this issue. To see groups progress to Casebook implementation, a revised Casebook should include strategies for recruitment, advertising, funding, overcoming barriers, and making connections with community partners.

3.3.6. *Altered structure and organization*

As mentioned, the general consensus was that the Casebook structure was low in complexity and well laid out; however, some groups provided suggestions to enhance readability. The most common suggestion was to organize the Casebook by initiatives and events rather than school profiles, such as through a summary table. Groups stated that using this altered format in future Casebook versions may help to direct group members’ reading, thereby enhancing uptake of the innovation.

3.4. *Stage 4: implementation*

Implementation requires individuals to put an innovation to use (Rogers, 2003) instead of simply considering its use, such as in prior stages. Groups were categorized as reaching this stage if they had previously used the Casebook in any capacity. While some groups reported implementing the Casebook, many did not for reasons detailed in the subthemes below.

3.4.1. *Degree of utilization*

EIMC-OC groups varied greatly in their use of the Casebook. Some groups found no use for the Casebook, while others found it to be a useful tool for themselves but not for their members as they did not find it “necessary” for group development. Alternatively, certain groups thought disseminating the Casebook to all members would encourage greater brainstorming of initiatives and group inclusion. Lastly, groups described the Casebook as a convenient tool for transitioning to a new executive team.

3.4.2. *Timing of utilization*

Developing groups suggested the Casebook could be beneficial to implement once they become established, as it is hard to implement in early stages of group development. Furthermore, one participant mentioned that ongoing Casebook revisions will help ensure its relevancy.

In contrast, established groups stated that their main form of ‘implementation’ was sending the Casebook to other schools when contacted with questions, because while they valued the Casebook, they did not find it more advantageous than other resources. Although established groups were not currently implementing the Casebook, they stated that if revisions (listed in the above subthemes) were made, they would consider its use in the future.

3.5. *Stage 5: confirmation*

Confirmation requires individuals to evaluate the outcomes of prior

decisions to use an innovation (Rogers, 2003). Though some groups expressed interest in future revised versions of the Casebook, no group conveyed a final decision on whether or not to utilize the Casebook moving forward due to the novelty of the innovation. Thus, representative subthemes were not generated for this theme.

4. Discussion

This study aimed to evaluate the utility and value of the EIMC-OC Casebook and establish end-users' insight on future directions. A secondary aim was to share the process of our theory-based evaluation of a casebook as a standalone KT tool. The Casebook was intended to be a comprehensive KT tool that facilitates the sharing of ideas, 'on-the-ground' experiences, and best practices between EIMC-OC groups in a single resource; however, its purpose can only be achieved if appropriately disseminated and adopted. In evaluating the Casebook, we found multiple positive aspects pertaining to its value and relevance. Nonetheless, the need for future adjustments to enhance its adoption was also identified.

Prior to the Casebook, EIMC-OC groups did not have a means to learn from each other to fulfill the national EIMC organization's mission. This study highlights that while each group adopted the Casebook to varying extents (i.e., they were at different stages of the DOI decision-making process; Rogers, 2003), the Casebook was generally deemed a relevant and valuable tool. Groups felt that the length, balance between visual aids and text, and lists of initiatives, barriers, and facilitators should remain in future Casebook versions. However, multiple barriers to Casebook adoption were identified by group members and no group reached the DOI stage of confirmation (Rogers, 2003). Therefore, alterations including step-by-step instructions for group start-up and initiatives, a table of contents organized by initiative category rather than by school, and a more dynamic communication medium, may enhance implementation and adoption (i.e., progression in the stages of the decision-making process) moving forward. Indeed, engaging with end-users, such as EIMC-OC groups, after innovation dissemination can maximize KT (Ashley, 2009; Bhattacharyya et al., 2011).

4.1. Implications for practice and research

Profiling groups' experiences in a casebook can promote communication among groups and help other professionals in implementing multi-site programs. Further, the creation of the Casebook provides an example of extending traditional research methods, like this academic paper, to consider practical illustrations of knowledge. Importantly, this can offer new perspectives that may enhance the development and sustainability of multi-site programs and foster interest in evidence-informed initiatives (McKibbin, 1998). This study provides a number of recommendations that can be incorporated in future casebooks to enhance the dissemination and implementation of similar knowledge-sharing tools on college and university campuses, or elsewhere. Importantly, our evaluation methodology was rooted in theory and can be adopted by other translational researchers who want to evaluate the impact of their KT tool on end-users. Thus, this research may impart broader knowledge to researchers and practitioners across multiple fields (e.g., psychology, education) and sectors (e.g., public, private) through its exemplification of a theory-based evaluation process.

4.2. Strengths, limitations, and future directions

This study evaluated the utility of a casebook as a KT tool, which to our knowledge only one study has previously done (Bonder et al., 2020). Notably, our study contributed beyond Bonder et al. (2020) by evaluating a casebook as a standalone KT tool for PA promotion, rather than as used concurrently with other KT strategies (i.e., education). Moreover, this study equally represented established and developing

EIMC-OC groups, yielding a comprehensive perspective on the usefulness of the Casebook for groups at varying stages of adoption.

Despite these strengths, small sample size and potential self-selection bias may impact representativeness across the other 18 EIMC-OC groups that were active at the time of recruitment and were not sampled. Further, since developing groups had not yet implemented initiatives, many interview questions required these participants to consider hypothetical scenarios, which may have potentially limited data accuracy. Lastly, no group reached the confirmation stage of the DOI, possibly due to time constraints in reviewing and implementing the Casebook. Future evaluations of KT tools should sample at various time points from innovation dissemination to capture a more holistic spectrum of participants' experiences across decision-making stages. Moreover, while the EIMC-OC Casebook is unique to Canada, it could be used to guide or enhance the effectiveness of EIM chapters in the USA as previous research has noted that, despite the variable local contexts of EIMC-OC groups, similar barriers and facilitators to program implementation (McEachern et al., 2019).

4.3. Lessons learned

The theoretical application of the DOI framework proved useful as it outlined the process of, and contributing factors to, how and why individuals decide to adopt a KT tool. The DOI was selected as a guiding theoretical framework in the present multi-site study because of its consideration of the social and institutional contexts in which this decision-making takes place. Still, evaluation methods guided by other theories, models, or frameworks could also apply to casebook evaluation efforts. Importantly, frameworks are not mutually exclusive (Field et al., 2014). Therefore, one possible avenue may be the concurrent use of the DOI and the APEASE (Affordability, Practicability, Effectiveness and cost-effectiveness, Acceptability, Side-effects and safety, and Equity) framework, whereby interventions (or innovations) can be assessed against the six criteria. Indeed, the APEASE may have been an apt theoretical addition to the present study as it aligns with some of the DOI's five characteristics of innovations that influence their adoption (Ashley, 2009; Rogers, 2003). For instance, Practicability (APEASE) and Compatibility (DOI) assess whether an innovation may be implemented within the current context and side-effects (APEASE) and Observability (DOI) encompass how an innovation may benefit its users and the degree to which this benefit is visible to others (Ashley, 2009; West & Michie, 2019). However, some APEASE criteria extend beyond the DOI. For example, the Affordability (i.e., how affordable an innovation is when delivered as intended) and Equity (i.e., how an innovation increases or decreases differences between advantaged and disadvantaged realms of society) criteria are not portrayed in the DOI (Ashley, 2009; West & Michie, 2019). Thus, using the APEASE when designing our interview guide and interpreting our results may have added depth to the insight gleaned on the DOI factors influencing EIMC-OC Casebook adoption. Using the DOI with another framework is an approach to evaluation that could help maximize the effectiveness of KT tools (Esmail et al., 2020) and is suggested for evaluators and program planners moving forward.

5. Conclusion

The EIMC-OC Casebook profiles 12 EIMC-OC groups striving to engage campus communities in the promotion and awareness of physical activity for health benefits. Evaluating the Casebook's usability and value was essential in determining the worthiness of updating and continuing its dissemination hereafter. The current study revealed that groups implemented the Casebook to varying degrees and revisions may encourage groups to progress through the DOI's five-stage process of adoption, thereby enabling shared best practices and enhancing EIMC-OC success. Additionally, elaborating on the process of our evaluation may assist researchers, evaluators, and program leaders when designing, implementing, and/or evaluating KT tools such as casebooks in similar

or other multi-site programs moving forward. Evaluation of future Casebook iterations could help to advance KT practices in health promotion by offering a practical resource for academics and health professionals wanting to conduct similar multi-site initiatives.

Author statement

Tamara L. Morgan: Writing - review and editing, visualization.
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 Priscilla Leung: Methodology, investigation, data analysis, writing - original draft preparation.
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 Susan Yungblut: Conceptualization, resources.
 Jennifer R. Tomasone: Conceptualization, supervision, methodology, project administration.

Research ethics and participant consent

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.
 Informed consent was obtained from all individual participants included in the study.

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Ethics approval

General Research Ethics Board, Queen's University, TRAQ #: 6016894 Ethics file number: GSKHS-212-15.

Declaration of Competing Interest

Please note that Susan Yungblut was the national director of Exercise is Medicine Canada at the time of the study. The authors have no other conflicts of interest to disclose.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.evalprogplan.2021.101992>.

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