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Research

Identifying priorities for sport and physical activity research in Canada: an iterative priority-setting study

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Abstract

Background: There is a need for better alignment between research on sport and physical activity and the needs of those who are in a position to implement the findings. To facilitate advancement and alignment, we identified the top research priorities of sport and physical activity knowledge users from various sectors.

Methods: For this priority-setting study, we used an iterative process of data collection and analysis. Sport and physical activity knowledge users from multiple sectors participated in a workshop (September 2019), which included small working group exercises followed by large-group syntheses leading to the identification of issues that required better understanding. We then sent an online questionnaire to participants for content validation and interim prioritization, to reduce the number of priorities (December 2019 to January 2020). A new questionnaire containing a shortened list of research priorities was sent to an expanded group of respondents to further streamline the list of priorities (January–March 2020).

Results: The 24 workshop participants identified 68 issues, of which 21 were retained by the 18 participants in the interim priority-setting questionnaire. The final prioritization questionnaire was completed by 33 stakeholder groups; this step produced a final list of 8 top research priorities. The final priorities identified for sport and physical activity research related to financial support, suboptimal promotion, dropout, best interventions, participation among Indigenous populations, volunteer engagement, safe and inclusive experiences, and knowledge exchange.

Interpretation: The 8 priorities identified in this study provide guidance to Canadian sport and physical activity researchers. Research efforts on these priorities will reflect pressing issues as identified by representatives of all sport and physical activity sectors.

Low levels of physical activity contribute to Canada's overwhelming levels of chronic diseases.[1] These suboptimal levels of physical activity represent a national crisis affecting all age groups.[2,3] Despite a rise in research pertaining to sport and physical activity policies, programs and practice,[4,5] the implementation of this evidence into practice has yet to bring about notable improvements in physical activity levels among Canadians. Both researchers and knowledge users have reported a gap between evidence-based research and policies and programming related to sport and physical activity.[4,6–8] Studies have also confirmed that many who work to promote participation in sport and physical activity feel ill-informed by current evidence-based research findings.[7,9–11]

The gap between knowledge creation and practice can be explained, in part, by researchers not adhering to the guiding principles of the knowledge-to-action framework.[12] In particular, researchers may pursue research without first obtaining confirmation that it represents a priority for practitioners.[7,13] Fullagar and colleagues[7] recently documented that research questions identified by sport and physical activity researchers may differ from the daily challenges experienced by stakeholders, practitioners and coaches. Similar research findings also indicate the need for more population-specific,[5] sport-specific[14] and context-sensitive[4] research that can be translated into local practices.[15]

Previous researchers have acknowledged that better alignment is needed between allocation of limited research resources and the priorities of those in a position to implement findings.[5,7,13,16] Yet most of the rare attempts to identify sport or physical activity research priorities did not involve

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consultation with potential knowledge users.[8,17,18] In contrast, Holt and colleagues[8] engaged in a rigorous consultation process with provincial sport organizations from across Canada to identify topics that these stakeholders viewed as top priorities for research. In addition to identifying useful research questions for the sport sector, Holt and colleagues[8] exposed highly ineffective knowledge translation processes, given their finding that the information most sought after by study participants was often already the subject of published research results. Nevertheless, as studies become more tailored to the specific needs of potential knowledge users[19] and as researchers involve these key players in their projects from the outset, sport and physical activity programs and practices may in turn become better informed by evidence-based research,[4] thus lessening the gap between evidence and practice.[16]

We aimed to identify top research priorities in sport and physical activity participation through the lenses of knowledge users from various sectors within and beyond sport.

Methods

Design

Although rooted in the James Lind Alliance priority-setting process,[20] this study was not intended to lead solely to health-related priorities; as such, it also drew on a variety of other methods of identifying research priorities. Nevertheless, and consistent with the James Lind Alliance, stakeholders were involved in all steps of the process. Specifically, we used a multistep approach that built on the strengths of purposefully sampling stakeholders from multiple sectors,[21–27] the Delphi method of congregating expert opinions,[21,23,28,29] and an iterative process of data collection and analysis to generate a final short list of research priorities.[21,23,28,29]

Initially, we generated a long list of issues deserving attention through in-depth discussions with a wide range of stakeholders and then conducted a series of priority-setting steps (Figure 1). This approach has been used in the past to help

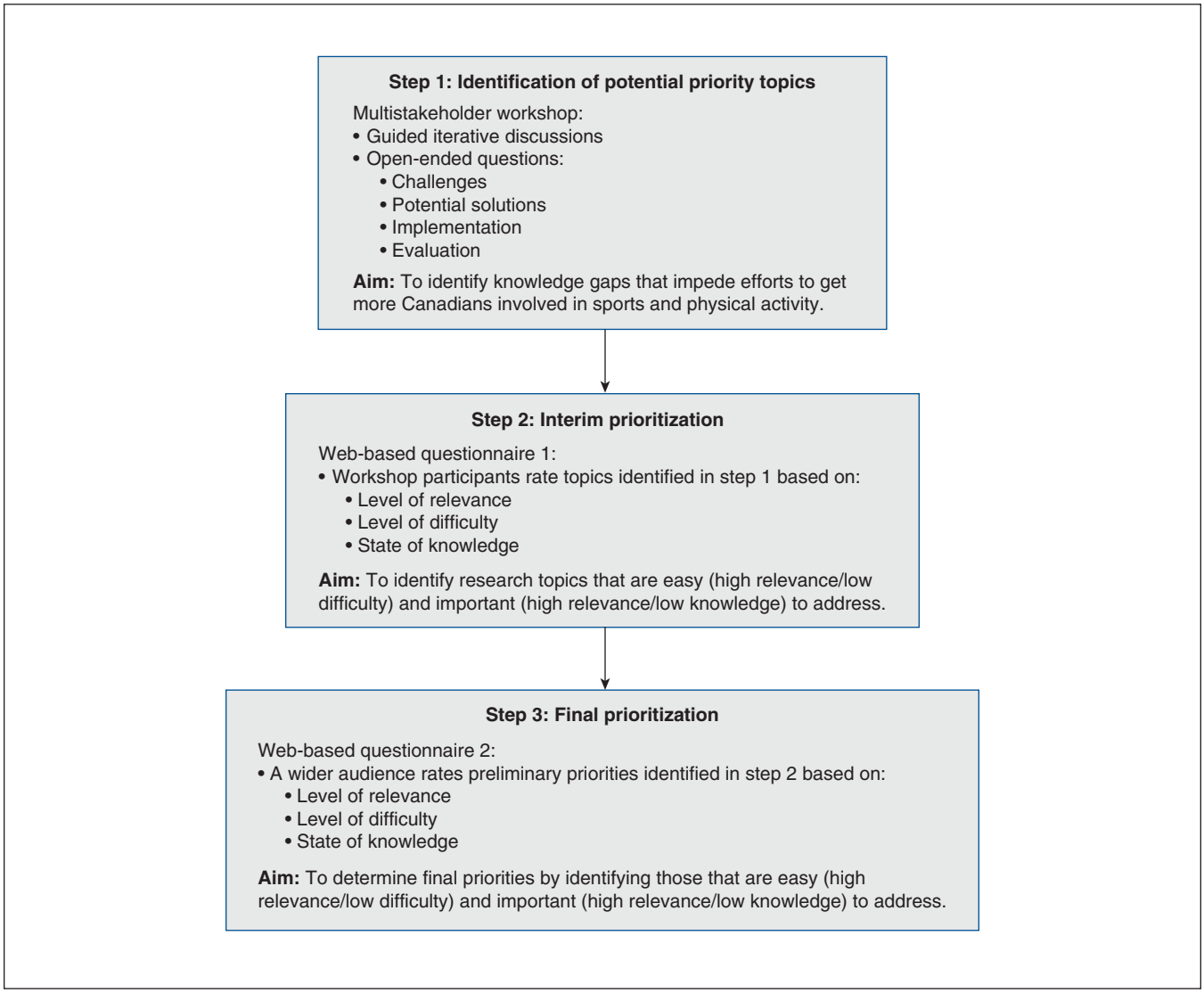

Figure 1: Process used to identify research priorities for research concerning sport and physical activity participation in Canada.

organizations identify the focus of their research agendas.[21,23,25] To facilitate and promote meaningful engagement of knowledge users, we abstained from using scientific jargon during steps 1 to 3.

Research team

The work presented here was led by a core group of 4 researchers with complementary expertise in sport and physical activity participation (M.B., C.M.S., I.D., J.O.), 3 end-users representing nonprofit agencies that promote participation in sport and physical activity (L.M.V. from ParticipACTION, C.T. from Sport for Life and a representative from the Public Health Agency of Canada [PHAC]), 1 research coordinator (J.G.C.) and 2 graduate students (F.G., V.T.) working with M.B.

Data collection

Step 1: Identification of potential priority topics

On Sept. 12, 2019, the research team hosted a group of knowledge users from across the country, who represented all sectors of sport and physical activity promotion in Canada. The goal of this workshop, held in Moncton, NB, was to identify priorities that should be the focus of sport and physical activity research to better inform policies, programs and practices in Canada. The list of invitees was developed in collaboration with the Sport Information Resource Centre, a nongovernmental organization recognized as the country's leading broker for knowledge related to sport and physical activity research. Specifically, we invited leaders of governmental and nongovernmental organizations that advocate for greater participation in sport or physical activity.

The workshop was moderated by a public health researcher with experience in public speaking and health promotion, who was not a member of the research team. Following the Delphi method of congregating expert opinions, we launched an iterative series of small working group exercises and large-group syntheses. Through this process, workshop attendees identified a list of issues and problems that required better understanding.

To ensure this list represented top priorities from the perspective of knowledge users, our approach capitalized on a priority-mapping exercise template developed by the World Health Organization.[30] Specifically, we held 7 iterative, small-group (7 or 8 participants per group) round table exercises during which participants engaged in semistructured discussions, each led by M.B., J.G.C., F.G. or V.T. The discussions, guided by open-ended questions formulated by the research team, progressed from general topics related to problems (defining the challenge), causes (causal agents, factors, determinants of the issues) and solutions (new interventions, policies, campaigns), to more specific issues related to implementation (knowledge translation into policy and practice) and evaluation (monitoring, evaluating the effectiveness of interventions or programs) (Appendix 1, part 1, available at www.cmajopen.ca/content/10/1/E269/suppl/DC1).[30] During the small-group discussions, participants were invited to jot down their ideas on adhesive notes and to "park" these ideas on poster boards. The boards were used in presentations during large-group syntheses to highlight topics that warranted more attention from researchers, and they helped the discussion leaders in preparing detailed summaries of their groups' discussions.

Step 2: Interim prioritization

Following the workshop, we (M.B. and J.G.C., in consultation with the research team) created a questionnaire to allow workshop participants to rate each topic identified, using 3 criteria: relevance, difficulty and current level of knowledge. According to advice that final research priorities be "relevant and represent noteworthy advances,"[19] the questionnaire was based on a prioritization methodology[31] where relevance measures the extent to which respondents perceive each issue as important in contributing to the low levels of sport and physical activity participation in Canada, difficulty measures the degree of difficulty in addressing each issue, and present knowledge represents the extent to which respondents perceive that more research is needed for each issue.

For this interim priority-setting step,[20] we sent a link to the online questionnaire to workshop participants by email and asked them to rate the topics (issues and challenges) identified during the workshop. Specifically, participants were asked, "Considering the current trend of low physical activity and sport participation in Canada, please rate the following issues/problems according to what you perceive to be their level of relevance, difficulty and present knowledge" (Appendix 1, part 2). The criteria (relevance, difficulty, knowledge) were measured using 5-point Likert scales ranging from very low to very high,[31] with the aim of identifying topics judged as the easiest and most important to address. The questionnaire was pilot tested by 3 graduate students and 1 knowledge user before workshop participants received the link, which remained active from Dec. 10, 2019, to Jan. 28, 2020.

Step 3: Final prioritization

For the next step,[20] we expanded the group of respondents to include other sport and physical activity knowledge users. We invited participation from delegates at the Sport for Life Canadian Summit (held Jan. 28–30, 2020), an event bringing together practitioners, researchers, graduate students, professional athletes, policy-makers and other leaders working to enhance the quality of sport and physical activity in Canada. Specifically, we handed out a pamphlet describing our study to summit attendees, asking them to complete our online questionnaire. We also invited our workshop attendees to share this second questionnaire with other knowledge users. This second online questionnaire was active from Jan. 30 to Mar. 31, 2020, and aimed to identify final research priorities by asking representatives from special interest groups to rate each of the priorities retained from the previous step, and to do so using the same methodology and rating criteria as outlined for step 2 (Appendix 1, part 3).

To present and describe the issues identified by stakeholders, during steps 1 to 3, as deserving the most research attention to the scientific community, the summaries of the step 1 workshop discussions were reread by the group-exercise facilitators (M.B., J.G.C., F.G., V.T.) to obtain clear background information and

context relating to each of the priorities retained with results of the final priority-setting questionnaire. The facilitators worked collaboratively to formulate a description and questions for each of the final research priorities, which were then submitted for validation to the other research team members. The final formulation of research priorities and associated questions was achieved during a video-conference (attended by M.B., J.G.C., C.M.S., L.M.V., C.T., F.G., V.T. and the PHAC representative) and then unanimously agreed upon by all authors.

Data analysis

Step 1 (identification of potential priority topics): Because the issues and challenges identified were many and varied, we used thematic analyses to organize and report the potential research priority topics identified at the workshop.[32] We (M.B., J.G.C., F.G., V.T.) cleaned and collated statements documented on poster boards and in discussion summaries by combining them into common topics. We then used an inductive approach to identify overarching themes representing the nature of issues within each group of topics. The themes were then used to organize items in subsequent questionnaires and to summarize results.

Step 2 (interim prioritization): We calculated mean levels of relevance, difficulty and knowledge for each of the interim priorities, across all respondents in this step. The relevance, difficulty and knowledge means of each priority were plotted on a 3-dimensional figure, which allowed the identification of priorities that would be easy to address (high relevance, low difficulty) and important (high relevance, low knowledge). Specifically, and consistent with the approach developed by Rondinelli and colleagues,[31] easy priorities represented pressing issues for which the level of difficulty associated with implementing the solution was perceived as low (mean relevance score ≥ 2.5 and mean difficulty score ≤ 2.5). Similarly, important priorities represented issues and problems that are relevant and for which the current level of knowledge was perceived as low (mean relevance score ≥ 2.5 and mean knowledge score ≤ 2.5).

Step 3 (final prioritization): For this step, we applied the same process of obtaining the mean levels of relevance, difficulty and knowledge using responses to the final priority-setting questionnaire. We then established the final research priorities using the same process of applying cut-offs of 2.5.

Ethics approval

This project was approved by the Education and Social Sciences Research Ethics Review Board of the Université de Sherbrooke.

Results

Identification of potential priority topics

We invited 24 organizations to participate in step 1, of which 20 were represented by at least 1 of the 24 stakeholders (excluding researchers and students) who attended the workshop (Table 1) (Appendix 2, available at www.cmajopen.ca/content/10/1/E269/suppl/DC1). The summation of priority items identified during the workshop fell within 6 themes:

Table 1: Characteristics of participants at each step of prioritization

Step 1 Workshop *n* = 24	Step 2 Interim prioritization *n* = 18	Step 3 Final prioritization *n* = 33*
Gender		
8 men	NA	NA
16 women	NA	NA
Level represented		
5 municipal	2 municipal	16 municipal
11 provincial	0 provincial	9 provincial
8 national	1 national	7 national
	15 unknown	1 unknown
Sector represented		
8 nongovernmental organizations	3 nongovernmental organizations	3 nongovernmental organizations
16 governmental organizations	11 governmental organizations	29 governmental organizations
• 8 health	• 3 health	• 4 health
• 4 education	• 3 education	• 2 social development
• 1 social development	• 3 leisure, sport and recreation	• 5 leisure, sport and recreation
• 3 leisure, sport and recreation	• 2 unknown	• 18 unknown
	4 unknown	1 unknown

Note: NA = not available (step 2) or not applicable (step 3).
*Data in this column do not represent numbers of individual participants; for many organizations, the questionnaire was completed by a group.

sociocultural factors; external barriers; internal barriers; community knowledge development; policies, resources and training; and interventions. After the process of cleaning and collating topics, 68 potential priorities were included in the interim priority-setting questionnaire used in step 2.

Interim prioritization

Eighteen (75%) of the 24 workshop participants completed the questionnaire in step 2. From the 68 general priorities, 10 emerged as being considered easy to address, while 15 were rated as important to address (Figure 2). Four items were identified as priorities falling within both the easy and important to address categories, resulting in 21 interim priorities carried forward to step 3.

Final prioritization

Representatives from 33 organizations participated in the final prioritization process. From the 21 interim priorities, participants retained 8 items as top research priorities (Figure 3). Our analyses classified 6 priorities as important and 2 as both easy and important to address. The 8 final priorities and their associated research questions are described in detail in Table 2 (in no particular order).

Interpretation

Using a rigorous, multistep process engaging stakeholders from various sectors, we identified 8 top priorities for Canadian sport and physical activity researchers to address. This list provides valuable guidance to researchers in this field, and could help to ensure that their work focuses on and addresses the needs of end-users.

Half of the priorities emerged under the theme of "community knowledge development," which highlights a general feeling among key sport and physical activity stakeholders in Canada that more needs to be done to improve the public's understanding about the powerful impact of participation in sport and physical activity and the urgency to intervene to avoid further dropouts from these activities. Partly related to this, 1 of the 2 priorities that emerged from the "policies,

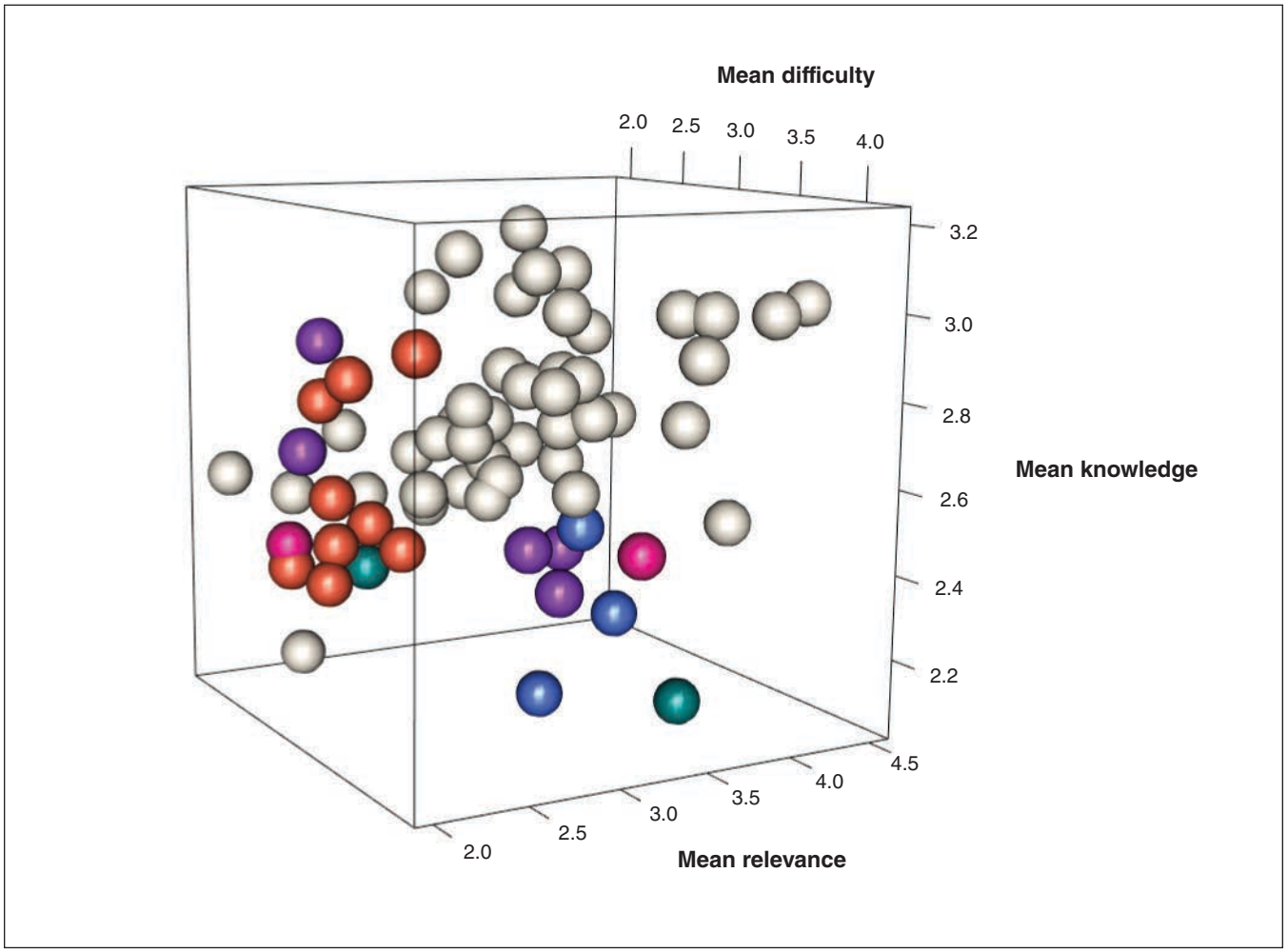

Figure 2: Mean relevance, difficulty and knowledge scores of items during the interim prioritization. Note: Coloured points represent the top 21 interim priorities, where blue = sociocultural factors, green = external barriers, pink = interventions, purple = policies, resources and training, and red = community knowledge development.

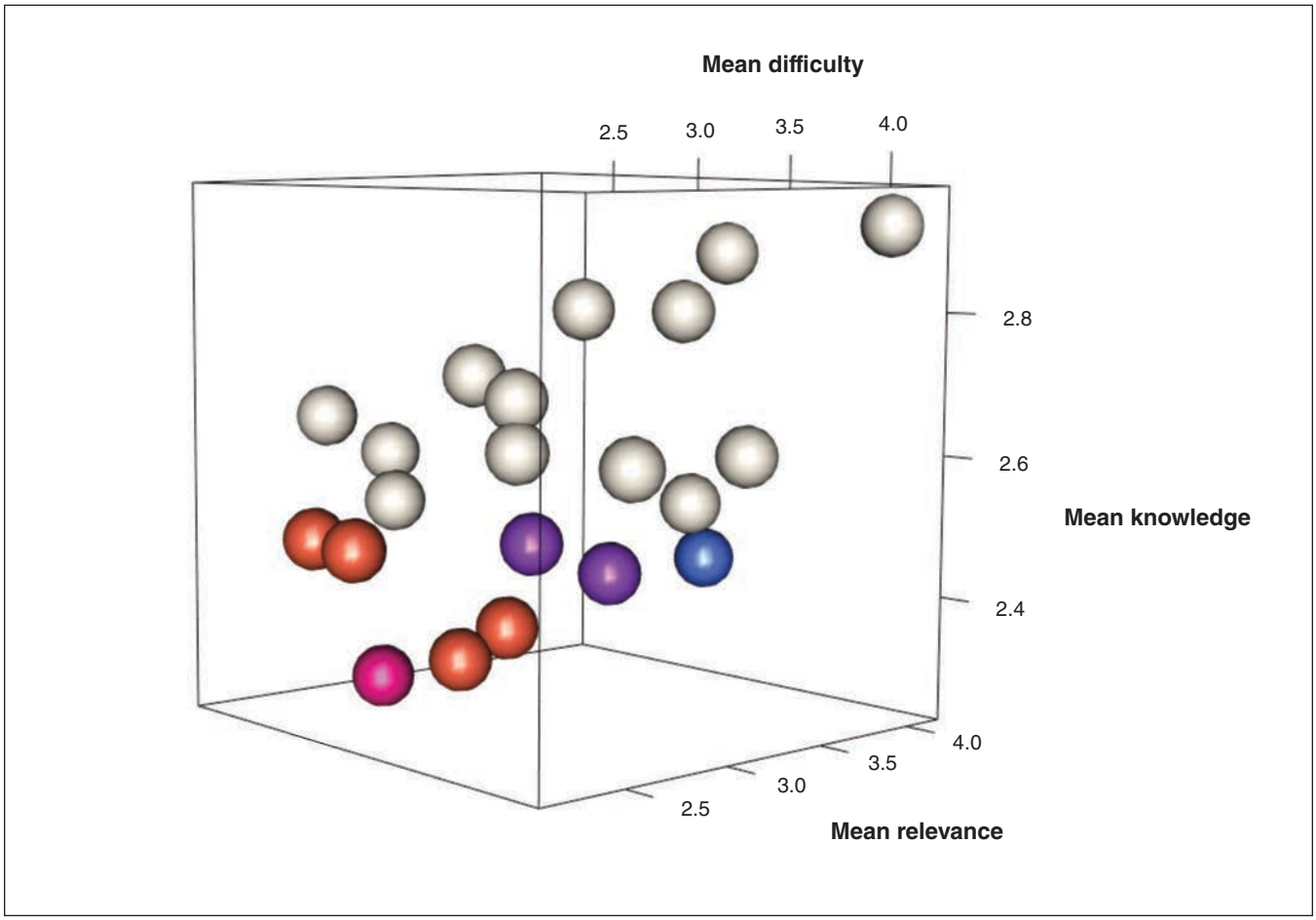

Figure 3: Mean relevance, difficulty and knowledge scores of items during the final prioritization. Note: Coloured points represent the top 8 final priorities, where blue = sociocultural factors, pink = interventions, purple = policies, resources and training, and red = community knowledge development.

resources and training" theme highlighted the need for better communication, given that the gap between researchers and knowledge users was identified as an area requiring prioritization. The other priority that emerged from the "policies, resources and training" theme related to challenges facing practitioner training in terms of action plans to confront bullying and intimidation as well as to promote inclusiveness. Engaging volunteers in the delivery of sport and physical activity initiatives also emerged as a top priority from the "interventions" theme. Finally, the challenge of recruiting and retaining Indigenous populations in sport and physical activity was also identified as a top priority.

Our methodologic approach and target population differed from the ones used by Holt and colleagues,[8] yet there was alignment between the studies in terms of the priorities they highlighted. In particular, the approaches and samples of both studies identified the need to conduct more research on dropouts from sport participation, on the promotion of sport and physical activity among specific subgroups, on the outcomes of sport-specific participation and on long-term volunteer engagement.[8] Similarly, the priorities that we identified align with those of Howie and colleagues,[18] in the sense that they call for more research to identify characteristics of interventions that are effective in promoting greater sport and physical activity participation over a sustained period, as well as more research on the outcomes of sport and physical activity participation from a variety of perspectives (e.g., physical health, mental health, society) and more research to support engagement of volunteers in sports. Finally, although the recommendations for future research published by the World Health Organization's Physical Activity and Sedentary Behaviour Guideline Development Group[36] focus more on methodologic approaches than on research topics, recommendations to pursue more longitudinal research align closely with the priority to gain a better understanding of the impacts of dropout.

Limitations

Although the methods used to identify research priorities adhere to best practice guidelines, the process can be subjective. Indeed, the process we used relies on individuals' own analysis and value judgments. To keep this influence to a minimum, and to ensure that the prioritization process was grounded in a rigorous approach, we recruited expert knowledge users from a variety of backgrounds and adopted a

Table 2: Priority research topics in sport and physical activity and associated research questions

Theme	Research priorities and definitions	Research questions associated with priorities
Community knowledge development	Financial support for sport and physical activity: Several government and community-driven financial aid programs aim to reduce barriers to sport and participation in physical activity related to ability to pay. Communicating availability of such programs to those who could benefit from them is a challenge.	• Are current government funding structures adequate to support participation in sport and physical activity? • Which mechanisms are the most effective in removing or minimizing financial barriers associated with participation in sport and physical activity? • What are the best ways to inform families and stakeholders about available financial aid programs? • How can we specifically target those most in need of financial aid programs, and how can we make it easier for them to apply?
	Communications for optimal promotion of sport and physical activity: Adopting targeted communication interventions will help to convey the importance of participation in sport and physical activity. Still, moving away from general promotion strategies requires identification of the communication strategies best suited for different subgroups.	• Which approaches are best for communicating the importance of sport and physical activity? • Are there communication strategies or tactics for specific subgroups that can be activated to ensure effective and accessible messaging regarding the importance of participation in sport and physical activity? • Which strategies are best for building awareness among specific subgroups regarding the benefits of participation in sport and physical activity?
	Consequences of dropping out of sport and physical activity: Many general, positive impacts of participating in sport and physical activity are considered common knowledge. However, information is lacking on the moderate- to long-term consequences of dropping out of sport and physical activity.	• What are the short-, medium- and long-term consequences of dropping out of sport and physical activity programming on physical health, mental health, social development, the environment, the community, etc.?
	Characteristics of best interventions for participation in sport and physical activity: Readily available information is lacking on 2 fronts: what constitutes proven intervention strategies, and what are the gaps in knowledge in terms of promoting sustainment of sport and participation in physical activity within various population groups.	• What are key characteristics of effective interventions to promote engagement of the population in sport and physical activity? • What are key characteristics of effective interventions to promote retention of participants in sport and physical activity?
Sociocultural factors	Participation in sport and physical activity among Indigenous populations: Low levels of sport and physical activity also affect Indigenous populations.[33,34] As the sample did not adequately represent Indigenous people, the study was unable to provide clear direction for this sector. However, the emergence of this topic highlights the need to investigate sport and physical activity research priorities in collaboration with members, leaders and elders of the targeted communities.	• What are the sport- and physical activity–related research priorities of Indigenous populations within their communities?
Interventions	Sustaining volunteer engagement in sport and physical activity: To function and deliver its programs, the sport and physical activity sector relies heavily on volunteer engagement.[35] Stakeholders therefore desire better understanding of how to engage and retain volunteers.	• What are the facilitators and barriers to volunteering in sport and physical activity? • What are the determinants of long-term volunteer engagement in sport and physical activity? • Which approaches are most effective for engaging and retaining volunteers in the delivery of sport and physical activity programs?
Policies, resources and training	Promoting safe, inclusive and quality experiences in sport and physical activity: There is a need for better knowledge on how to best promote values of equity, diversity and inclusion within sport and physical activity systems. Evidence-based strategies are needed to confront bullying and to promote safe, positive and inclusive experiences.	• Which approaches are effective in equipping sport leaders and participants with the skills needed to promote a positive and inclusive environment for all, including members of underrepresented and equity-seeking groups? • Which strategies are effective in reducing bullying and intimidation within organized sport and physical activity programming?
	Knowledge exchange between researchers and knowledge users: Engaging those who have the power to implement their findings or those most affected by research into research processes has the potential to more rapidly address the challenges of low levels of participation in sport and physical activity. There is a need to address the gap between researchers and stakeholders.	• What are the facilitators and barriers to building iterative and reciprocal collaborative relationships between researchers and knowledge users? • Which are the best approaches for engaging knowledge users in the knowledge-to-action framework?

methodology anchored in interactions between individuals, working groups and iterative procedures to search for and arrive at a consensus. Nevertheless, it is possible that participants identified priorities that are not transformative, given a potential bias toward conserving current systems and infrastructures. Furthermore, it would be possible for researchers and stakeholders to collaboratively identify other relevant research questions to address.

The exact number of participants for step 3 (final prioritization) is unknown, given that many organizations' representatives completed the questionnaire as a group to avoid having multiple individuals from the same department complete the questionnaire.

Priorities can change over time. In particular, it must be noted that most steps in this study occurred before the onset of the COVID-19 pandemic in Canada. Had the study been undertaken later, it is possible that the identified priorities would have been different.

Conclusion

The 8 high-ranking priorities identified in this study provide much-needed guidance to researchers seeking to engage in meaningful and effective research about sport and physical activity from the perspective of knowledge users in various sectors in Canada. Participants called for more sport and physical activity research on how to reduce financial barriers, better communicate benefits, understand the consequences of dropping out, identify characteristics of effective interventions, engage Indigenous populations, create positive and inclusive experiences, and define successful strategies to engage and retain volunteers. Moreover, participants identified reducing the gap between researchers and end-users as an additional priority. Better implementation of these research findings into practice, while adhering to best practices in terms of knowledge exchange, will reflect the pressing issues identified by representatives of all sectors of sport and physical activity promotion.

References

1. Physical activity. Geneva: World Health Organization; 2018 Feb. 23. Available: https://www.who.int/news-room/fact-sheets/detail/physical-activity (accessed 2020 Nov. 12).
2. Colley RC, Garriguet D, Janssen I, et al. Physical activity of Canadian children and youth: accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Rep* 2011;22:15-23.
3. Colley RC, Garriguet D, Janssen I, et al. Physical activity of Canadian adults: accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Rep* 2011;22:7-14.
4. Faulkner G, Taylor A, Ferrence R, et al. Exercise science and the development of evidence-based practice: a "better practices" framework. *Eur J Sport Sci* 2006;6:117-26.
5. Blamey A, Mutrie N. Changing the individual to promote health-enhancing physical activity: the difficulties of producing evidence and translating it into practice. *J Sports Sci* 2004;22:741-54.
6. Holt NL, Camiré M, Tamminen KA, et al. PYDSportNET: a knowledge translation project bridging gaps between research and practice in youth sport. *J Sport Psychol Action* 2018;9:132-46.
7. Fullagar HHK, McCall A, Impellizzeri FM, et al. The translation of sport science research to the field: a current opinion and overview on the perceptions of practitioners, researchers and coaches. *Sports Med* 2019;49:1817-24.
8. Holt NL, Pankow K, Tamminen KA, et al. A qualitative study of research priorities among representatives of Canadian provincial sport organizations. *Psychol Sport Exerc* 2018;36:8-16.
9. Dale LP, LeBlanc AG, Orr K, et al. Canadian physical activity guidelines for adults: Are Canadians aware? *Appl Physiol Nutr Metab* 2016;41:1008-11.
10. Zenko Z, Ekkekakis P. Knowledge of exercise prescription guidelines among certified exercise professionals. *J Strength Cond Res* 2015;29:1422-32.
11. Coutts AJ. Challenges in developing evidence-based practice in high-performance sport. *Int J Sports Physiol Perform* 2017;12:717-8.
12. Graham ID, Logan J, Harrison MB, et al. Lost in knowledge translation: Time for a map? *J Contin Educ Health Prof* 2006;26:13-24.
13. Estabrooks PA, Harden SM, Almeida FA, et al. Using integrated research-practice partnerships to move evidence-based principles into practice. *Exerc Sport Sci Rev* 2019;47:176-87.
14. Reade I, Rodgers W, Hall N. Knowledge transfer: How do high performance coaches access the knowledge of sport scientists? *Int J Sports Sci Coaching* 2008; 3:319-34.
15. Milat AJ, King L, Newson R, et al. Increasing the scale and adoption of population health interventions : experiences and perspectives of policy makers, practitioners, and researchers. *Health Res Policy Syst* 2014;12:18.
16. Jacobson N, Butterill D, Goering P. Development of a framework for knowledge translation: understanding user context. *J Health Serv Res Policy* 2003;8:94-9.
17. Longmuir PE, Tremblay MS. Top 10 research questions related to physical literacy. *Res Q Exerc Sport* 2016;87:28-35.
18. Howie EK, Guagliano JM, Milton K, et al. Ten research priorities related to youth sport, physical activity, and health. *J Phys Act Health* 2020;17:920-9.
19. Chalmers I, Bracken MB, Djulbegovic B, et al. How to increase value and reduce waste when research priorities are set. *Lancet* 2014;383:156-65.
20. Cowan K, Oliver S. *The James Lind Alliance guidebook*. Version 10. London (UK): National Institute for Health Research; 2021. Available: http://www.jla.nihr.ac.uk (accessed 2021 June 24)
21. Sivananthan SN, Chambers LW. A method for identifying research priorities for health systems research on health and aging. *Healthc Manage Forum* 2013;26:33-6.
22. Chapman E, Reveiz L, Sangalang S, et al. A survey study identified global research priorities for decreasing maternal mortality. *J Clin Epidemiol* 2014; 67:314-24.
23. Kelly B, King L, Bauman AE, et al. Identifying important and feasible policies and actions for health at community sports clubs: a consensus-generating approach. *J Sci Med Sport* 2014;17:61-6.
24. Rankin G, Summers R, Cowan K, et al.; James Lind Alliance (JLA) Physiotherapy Priority Setting Partnership (PSP) Steering Group. Identifying priorities for physiotherapy research in the UK: the James Lind Alliance Physiotherapy Priority Setting Partnership. *Physiotherapy* 2020;107:161-8.
25. Auais M, French SD, Beaupre L, et al. Identifying research priorities around psycho-cognitive and social factors for recovery from hip fractures: an international decision-making process. *Injury* 2018;49:1466-72.
26. Mathioudakis AG, Custovic A, Deschildre A, et al. Research priorities in pediatric asthma: results of a global survey of multiple stakeholder groups by the Pediatric Asthma in Real Life (PeARL) think tank. *J Allergy Clin Immunol Pract* 2020;8:1953-60.e9.
27. Wilson P, Gurusamy KS, Morley R, et al. Top research priorities in healthcare-associated infection in the UK. *J Hosp Infect* 2019;103:382-7.
28. Rushton AB, Fawkes CA, Carnes D, et al. A modified Delphi consensus study to identify UK osteopathic profession research priorities. *Man Ther* 2014; 19:445-52.
29. Wilson MS, Blencowe NS, Boyle C, et al. A modified Delphi process to establish future research priorities in malignant oesophagogastric surgery. *Surgeon* 2020;18:321-6.
30. Terry RF, Charles E, Purdy B, et al. An analysis of research priority-setting at the World Health Organization: how mapping to a standard template allows for comparison between research priority-setting approaches. *Health Res Policy Syst* 2018;16:116.
31. Rondinelli FJ, Cherif HS. A prioritization methodology to strategic planning process. In: *2009 International Nuclear Atlantic Conference*; 2009 Sept. 27–Oct. 2; Rio de Janeiro (Brazil). Associação Brasileira de Energia Nuclear (ABEN); 2009.
32. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77-101.
33. Findlay LC, Kohen DE. Aboriginal children's sport participation in Canada. *Pimatisiwin J Aborig Indig Community Health* 2007;5:185-206.
34. *First Nations Regional Health Survey (RHS) 2008/10: national report on adults, youth and children living in First Nations communities.* Siksika (AB): Alberta First Nations Information Governance Centre; 2012.
35. Wicker P, Hallmann K. A multi-level framework for investigating the engagement of sport volunteers. *Eur Sport Manag Q* 2013;13:110-39.
36. DiPietro L, Al-Ansari SS, Biddle SJH, et al. Advancing the global physical activity agenda: recommendations for future research by the 2020 WHO physical activity and sedentary behavior guidelines development group. *Int J Behav Nutr Phys Act* 2020;17:143.

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