

Development of sport policy and practice recommendations for pregnant, postpartum and parenting Canadian high-performance athletes

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ABSTRACT

Our objective is to describe the development of evidence-based policy and practice recommendations for pregnant, postpartum and parenting Canadian high-performance athletes. A community-based participatory research approach was employed as the study design, and data were generated via a rapid review of existing sport policy for pregnant and postpartum athletes, followed by an extensive consultation and engagement process with key sport stakeholders via survey and one-on-one and group interviews. 102 sport stakeholders participated via the survey (n=56), individual and group interviews (n=33), and follow-up interviews (n=13). Individuals represented a range of summer/winter Olympic and Paralympic athletes, medical and support staff, National Sport Organisations and Sport Canada representatives. Seven evidence-based policy and practice recommendations were developed for Sport Canada decision-makers. Recommendations include the need for Sport Canada to (a) establish two new cards for pregnant and parenting athletes, (b) develop a policy to support pregnant, postpartum and parenting athletes, (c) create new funding sources for facilities that accommodate the needs of pregnant, postpartum and parenting athletes, (d) create new funding source for athletes to train and/or compete during infants' first year, (e) develop training and educational modules related to pregnant, postpartum and parenting athletes, (f) increase visibility of pregnant, postpartum and parenting athletes and (g) invest in research on high-performance sport participation during and following pregnancy. The collaborative processes employed in this research serve as a model for sports organisations to develop evidence-based policies and practices that can support pregnant, postpartum and parenting athletes.

INTRODUCTION

With athletes training and competing at the elite level during their reproductive years, athlete-mothers are challenging societal notions of who can successfully compete on the global stage as an elite athlete.¹ Sport is a powerful platform for promoting gender equity. Still, there are necessary policies and practices related to pregnancy and parenting that must be applied in the sport context to

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Burgeoning literature has described the experiences of elite athletes training and competing during and following pregnancy; most studies highlight the lack of sport policy as a key barrier to continued sport participation following conception.
- ⇒ A limited number of sport policies have been developed worldwide, but details on how the policy was developed are not provided.

WHAT THIS STUDY ADDS

- ⇒ This study outlines the key steps taken to develop evidence-informed sport policy and practice recommendations that were refined and confirmed by sport stakeholders in Canada.
- ⇒ Key recommendations cover financial support, maternity and parental leave, facility requirements, education and research priorities.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

- ⇒ This study outlines key policy and practice recommendations for sport organisations to support pregnant and parenting athletes.

ensure that women and girls are afforded the same opportunities as their male counterparts.

Organisations worldwide have stated their strong commitment to gender equity in sport. For example, the International Olympic Committee (IOC) aimed to support the 'promotion of women in sport at all levels and structures'.² Furthermore, the Government of Canada is committed to achieving gender equity in sport by 2035.³ To promote gender equity and advance high-performance sport in Canada, there is a critical need for sport policies and practices to support pregnant and parenting athletes. Numerous academic and media publications have called out sport organisations for limited, or a lack of, policies specific to pregnant and postpartum athletes.^{1 4-6} Furthermore, researchers have noted that very few countries worldwide have

explicit maternity and parental leave policies to support their athletes.⁷ Policies and practices specific to pregnant, postpartum and parenting athletes are essential to ensure that women are not excluded from some of the highest levels of sport participation. Developing policies and practices that support and value pregnant, postpartum and parenting athletes is necessary to achieve gender equity in sport.

In Canada, eligible high-performance athletes can be financially supported through Sport Canada's Athlete Assistance Programme (AAP). This AAP financial support is known as 'carding'. Each National Sport Organisation (NSO) is required to hold a policy regarding illness, injury, pregnancy or other health-related circumstances that limit a carded athlete's training for at least 4 months (Section 9.1 of the Policies and Procedures set by the AAP).⁸ However, NSOs are not required to have a policy *specific* to pregnancy or parenting athletes. The lack of specific policies for pregnant and parenting athletes is a barrier to gender equity in sport.

This research aims to describe the development of evidence-based policy and practice recommendations for pregnant, postpartum and parenting Canadian high-performance athletes (ie, those who compete at the national, international or world-class level). More specifically, this manuscript provides an overview of a community-based participatory research (CBPR) approach, which involves a rapid review of existing sport policy and an extensive consultation process with sports stakeholders (athletes, healthcare providers, coaches/support staff, NSO administrators, Sport Canada representatives).

METHODS

Study design

A CBPR approach was employed as the study design. CBPR involves participants in all aspects of the research process, including data generation, analysis and mobilisation of findings.⁹ This research approach supports the inclusion of those often under-represented in sports research,¹⁰ including high-performance women athletes, coaches and administrators. Importantly, research is conducted *with* participants rather than *on* participants, and CBPR results in practical outcomes for participants. Consistent with our CBPR approach, specifically our efforts to involve sports community members in all aspects of the research process, a research advisory board (RAB) was formed. The all-women RAB included current high-performance athletes, clinicians and researchers with expertise in various quantitative and qualitative approaches. The various research members of the RAB also have experience as mothers, former elite athletes and clinicians. The RAB informed all data generation processes, including the rapid review and consultation. The RAB also played a significant role in data analysis and the mobilisation of findings.

Equity, diversity and inclusion statement

Recruitment for the various phases in this research was open to all winter or summer Olympic or Paralympic

stream athletes, support staff, coaches and NSO administrators in Canada. An all-women Canadian RAB led this study; the RAB was diverse in race and ethnic origins. Both authors of this study identify as white women of North American and Western European ancestry. There was no public involvement in the study's conduct.

Data generation and analysis

Rapid review of existing sports policy

Identification of existing sport policy relating to pregnancy, postpartum and parenting athletes occurred via a multi-pronged approach. Structured searches of PubMed and Scopus using the various iterations of the keywords "pregnant", "postpartum", "athlete" and "policies" in PubMed and Scopus were performed until September 2021 to identify existing sport policies in published literature. We also created a list of all international federations for Summer and Winter Olympic and Paralympic sports and women's professional organisations. We searched relevant organisation websites to identify existing policies for pregnant, postpartum and/or parenting athletes.

In October 2021, Canadian NSOs were also surveyed by our research team to retrieve current parental leave policies and practices available to Canadian athletes. The RAB played a critical role in connecting with NSOs to have them complete this survey. Canadian NSOs (63 at the time of the survey) were contacted by email and phone and asked to participate in a 35-question survey online or by phone (see online supplemental appendix A) detailing their current parental leave policies. All Canadian NSOs (n=63) were contacted at least two times by email and at least two times by phone. Based on findings from this rapid review of existing sport policy and additional context provided by the researchers' previous research that is grounded in the voices and experiences of pregnant and parenting athletes,^{1 6} in March 2022, an initial set of nine evidence-based policy and practice recommendations for pregnant, postpartum and parenting athletes was developed.

Consultation and engagement process

With contract funding from Sport Canada, an extensive consultation and engagement process with key sport stakeholders was conducted to seek feedback and refine the initial nine evidence-based policy and practice recommendations for pregnant, postpartum and parenting athletes. The consultation and engagement process occurred via (a) survey and (b) one-on-one and group interviews. Recommendations were refined based on feedback obtained via surveys and one-on-one and group interviews. Then, a follow-up set of one-on-one and group interviews was conducted to confirm the revised recommendations.

Survey

Participants included Canadian-based Olympic or Paralympic stream athletes, coaches, medical/paramedical providers and NSO administrators. To ensure that

participants met the inclusion criteria, the survey was circulated via directed emails and electronic newsletters and was not publicly available. Specifically, the survey was circulated to athletes via established email lists and newsletters from AthletesCAN, the Canadian Paralympic Committee Athletes' Commission and the Canadian Olympic Committee Athletes' Commission. The survey was circulated to coaches, medical/paramedical providers and NSO administrators via direct email from the researchers, Sport Canada and Canadian Women & Sport.

The online survey (see online supplemental appendix B) included general demographic questions and presented the initial nine evidence-based policy and practice recommendations whereby respondents were asked to quantitatively indicate their support of each recommendation (from strongly disagree to strongly agree using the 1–5 scale). Respondents also had the opportunity to provide qualitative feedback via open-ended responses. The survey obtained basic demographic information about the respondents, including their primary sport, role in sport (eg, athlete, coach, administrator), sex at birth and involvement in Paralympic sport. The survey was anonymous, yet there was an opportunity for respondents to provide their email addresses to engage in additional consultation via interviews.

One-on-one and group interviews

Data were generated via semi-structured one-on-one or group interviews to derive optimal learning from participants' in-depth and experiential knowledge. The relational nature of interviews aligns with the CBPR approach of this study, and interviews have been successfully employed in sports research seeking to better understand the experiences of sports stakeholders.^{10 11} Canadian-based Olympic or Paralympic stream athletes, coaches, medical/paramedical providers, NSO administrators and Sport Canada representatives were purposefully recruited¹² to participate in this research. Purposeful recruitment of participants occurred in two primary ways: (a) interested participants provided their contact information on the survey and (b) information-rich participants were identified through the RAB, Canadian Women & Sport and Sport Canada representatives' professional networks.

All interviews were conducted via Zoom, and participants could participate in a one-on-one or group interview. The RAB co-developed the semi-structured interview guide (see online supplemental appendix C). It consisted of questions about the initial evidence-based policy and practice recommendations for pregnant and parenting athletes. Specifically, the recommendations were presented to participants, who were asked to provide feedback on the recommendation (eg, 'What additional information would you like to add or change to this recommendation?'). Given the semi-structured nature of the interview guide, the interviewers had the flexibility to ask probing questions that allowed participants

to elaborate on their responses and their perspectives on the feasibility of the recommendations and challenges to implementation. More specifically, having the room to ask probe and follow-up questions supported the researchers in further exploring each participant's unique perspectives, which shaped their feedback on the policy and practice recommendations.

Interviews lasted an average of 60 min (45–80 min), were audio-recorded, and transcribed verbatim by Zoom audio transcription or Otter.ai. All transcripts were checked and edited for accuracy by the researchers. With over 25 hours of audio-recorded interviews, 372 pages of single-spaced transcripts were produced. Using the interview transcripts as raw data and the qualitative data generated from the open-ended questions on the survey, the RAB conducted a three-phase process of content analysis (ie, preparation, organisation and reporting)¹³. Content analysis is often used when knowledge about a phenomenon is limited and when text constitutes the primary form of data. This form of data analysis is ideal for developing relatively straightforward, comprehensive summaries. Our team has extensive experience employing content analysis in sport research.¹⁶

Follow-up one-on-one and group interviews

Drawing on the extensive feedback provided through the survey and one-on-one and group interviews, the evidence-based policy and practice recommendations were refined. Two follow-up one-on-one and group interviews were conducted to *confirm* these newly refined recommendations. Participants included NSO administrators and Canadian-based Olympic or Paralympic stream athletes, including representatives from AthletesCAN, the Canadian Paralympic Committee Athletes' Council, and the Canadian Olympic Committee Athletes' Commission. Purposeful recruitment of participants occurred in the following way: (a) participants who previously completed either the survey or initial round of one-on-one or group interviews provided their contact information on the respective consent form, and (b) participants were contacted by the RAB and invited to participate in the follow-up one-on-one and group interviews.

All interviews were conducted via Zoom, and participants could participate in a one-on-one or group interview. A specific interview guide was not developed for this phase. Instead, each of the seven refined evidence-based policy and practice recommendations was presented to the participants, and they were provided with the opportunity to provide further feedback on the newly refined recommendations. Interviews lasted an average of 55 min (40–70 min), were audio-recorded, and transcribed verbatim by Zoom audio transcription. All transcripts were checked and edited for accuracy by the researchers. With 10 hours of audio-recorded interviews, 225 pages of single-spaced transcripts were produced. Like the data analysis process described above for the initial one-on-one or group interviews, interview transcripts served as the raw data. A content analysis¹³ was

conducted to identify pertinent content to refine and confirm recommendations.

RESULTS

Rapid review of research and existing sports policy

The initial review of PubMed, Scopus and Google in September 2021 identified 10 International policies from amateur and professional sports organisations (see online supplemental appendix D). Of the 63 NSOs contacted, responses were received from 28 (see online supplemental tables 1 and 2). Critically, many NSOs reported they could not answer some or all of the questions in our survey as they were not certain how maternity or parental leave requests from athletes would be handled. More specifically, NSOs indicated they were unsure what policies would apply to such requests. Our results largely demonstrate a lack of understanding from NSOs on policy for pregnant and parenting athletes and support from Sport Canada to implement policy successfully. Most NSOs indicated the current AAP carding (ie, funding) policies would be used for pregnant and postpartum athletes who wish to take leave; however, very few NSOs have implemented additional policies for pregnant or parenting athletes.

Of the responses received, 36% of the NSOs reported previous or current pregnant athletes, 32% reported previous or current postpartum athletes, 0% reported previous or current adoptive parent athletes and 11% reported previous or current athletes who wished to take spousal parental leave. Half of NSOs indicated that athletes had the same access to trainers and coaches during (50%) and following (50%) pregnancy. In comparison, 43% indicated pregnant, postpartum and new adoptive parent athletes have the same access to medical and paramedical staff that they had pre-conception. More NSOs reported they had no accommodations in place for breastfeeding athletes (no accommodation (32%), accommodation in place (21%), no information provided (46%)). Further, most NSOs indicated no support regarding pelvic floor training or other obstetric specialists for pregnant and postpartum athletes (no supports (36%), supports (18%), no information provided (46%)). Of the responses received, 39% of NSOs indicated that a pregnant or postpartum athlete would receive support to adapt their training programme appropriately, and such training would be handled on a case-by-case basis with no specific policy.

Drawing on findings from the rapid review of policies and additional context provided by the research team's previous research with pregnant and parenting high-performance athletes,^{1 6} an initial set of nine evidence-policy and practice recommendations for pregnant, postpartum, and parenting athletes was developed in March 2022 (see [box 1](#)).

Survey

The online, confidential survey was completed by 56 individuals representing athletes (24), medical and support

Box 1 Initial evidence-based policy and practice recommendations for pregnant and parenting Canadian high-performance athletes

Initial recommendations

1. Develop a pregnancy and parenting card

The Athlete Assistance Programme is recommended to develop a Pregnancy & Parenting card that provides financial support for pregnant, postpartum and parenting athletes, separate from injury and illness cards.

2. Develop policies for pre-conception, pregnancy, postpartum and parenting athletes

Sport Canada is recommended to develop comprehensive policies for National Sport Organisations regarding (a) pre-conception, (b) pregnancy, (c) return to sport postpartum and (d) parenting.

3. Protection of athlete status and ranking during pregnancy/parental leave

Athlete player status on the team and competitive ranking should be maintained during pregnancy/parental leave.

4. Provide accommodations for pregnant and postpartum athletes

Training and competition adaptations for pregnant and postpartum athletes are informed by meetings with the athlete, medical team and coaching/training team.

5. Implement mandatory training and education

Implement mandatory training and educational sessions for athletes, coaches, trainers, governance, and other staff on supports and policies for pregnant, postpartum and parenting athletes.

6. Protect athletes from termination when disclosing pregnancy

Sport Canada is recommended to mandate explicit protection from termination at the point of pregnancy disclosure.

7. Increase the visibility of female and pregnant/postpartum/parenting athletes

Increase representation of female athletes who have successfully become pregnant and returned to elite sport.

8. Increase research into female athlete health

Encourage and support research into the implications of elite sport participation during and following pregnancy on maternal and fetal/infant health.

9. Increase knowledge translation of research findings to the sports community

Support opportunities for researchers to present findings relating to female athlete health and gender equity policies to athletes, coaches, staff and the general population.

staff (13) and representatives of NSO (19). An additional seven individuals (including five representatives of NSO) consented to participate but did not complete the survey. 12 respondents identified as Paralympians or staff working with Paralympians. The respondents represented 33 Olympic and Paralympic Sports, which included various individual and team sports, from summer to winter games. The initial recommendations garnered strong support across all groups. Between one and four

participants (2%–7% of respondents) ‘disagreed’ or ‘strongly disagreed’ with eight of the nine proposed recommendations. Seven individuals (13%) disagreed with the recommendation to implement mandatory training and education regarding pregnancy, postpartum and parenting athletes. However, their feedback for revision on the policy was that training and education should be available but not ‘mandatory’; having a strong policy ‘would be enough’.

One-on-one and group interviews

A total of 33 participants, including athletes (11) representing a range of summer and winter Olympic and Paralympic sports, NSO administrators (9), and Sport Canada representatives (13), engaged in one-on-one or group interviews to provide in-depth feedback on evidence-based policy and practice recommendations. Overall, findings from the interviews suggest widespread and strong support for all recommendations across all participant groups. Athletes and sports administrators highlighted the urgent need and potential benefits of developing policies to support pregnant and parenting athletes. As stated by one sports administrator, ‘You need almost like a crisis, or a situation or an emerging issue to create a policy. Okay, in reality, it works. But can we prevent it? Can we be proactive? Can we work in a system that we are more visionary around these things?’. A representative of an NSO emphasised the importance of creating policy, ‘It’s an important area. If you get it right, it’ll be really good for Canadian sport’.

Feedback across stakeholder groups highlighted the essential need to dissociate pregnancy and parenting from other health circumstances, such as illness and injury, covered under the ‘Health-Related Circumstances’ carding criteria. Although there was widespread support, individuals representing Sport Canada specifically emphasised the need for this change to reflect the changing demographic of athletes, ‘AAP needs to modernise their policy in some way kind of’ and ‘I think it’s part of the evolution of where we are going as a society to have a policy like that’.

Respondents also highlighted their strong belief that now is the time to make these pregnancy- and parenting-related changes in high-performance sports. As stated by an athlete, ‘The minister [in charge of sport in Canada], she does care a lot about the athletes, and you can see through the decisions that she’s made. So I would say if there’s a time where things could happen, we’re at the best point’. Individuals from all stakeholder groups emphasised that the funding necessary to support pregnant and parenting athletes would need to be supported by a separate ‘pot’ of funding. They cited that the main barrier to implementation is the limited funds available for carded athletes. As stated by an NSO, ‘That’s a prioritisation question, and if I was prioritising, that wouldn’t be my priority ... we’re a high-performance sport. But it’s an important area’.

Based on the in-depth feedback provided by participants via survey and one-on-one and group interviews, the initial nine evidence-based policy and practice recommendations were refined, and seven evidence-based policy and practice recommendations for pregnant and parenting high-performance Canadian athletes were developed (Online supplemental appendix E). Participants’ feedback informed the revision of the initial recommendations in several ways. Notably, participants’ feedback resulted in some of the initial nine recommendations being combined, resulting in seven newly refined recommendations. In addition, the in-depth feedback provided by participants through the survey and interviews supported much more detailed descriptions to accompany the specific policy or practice recommendations. For example, the refinement of Recommendation 1 resulted in specific details regarding the need to establish *two* new cards for pregnant and parenting athletes. Eligibility criteria and timeframes for leaves were developed based on feedback from participants. It is important to note that the specific timeframes that are included within the detailed descriptions of the recommendations (eg, duration of Pregnancy & Postpartum card outlined in Recommendation 1) align with current Government of Canada employment insurance maternity and parental benefits, and such alignment was requested by participants during this consultation process.

To provide a concise and accurate reflection of feedback provided by participants in the one-on-one and group interviews, online supplemental appendix E includes a description of (a) seven newly refined and confirmed evidence-based policy and practice recommendations for pregnant and parenting Canadian high-performance athletes and (b) select quotes from consultations that are related to the revised recommendations.

Follow-up one-on-one and group interviews

A total of 13 participants, including NSO administrators (4) and athletes (9) representing the AthletesCAN, Canadian Paralympic Committee Athletes’ Council and Canadian Olympic Committee Athletes’ Commission engaged in one-on-one or group interviews to provide feedback and ultimately *confirm* the seven refined evidence-based policy and practice recommendations to support pregnant and parenting athletes. Overall, findings from the follow-up interviews confirm the newly revised evidence-based policy and practice recommendations outlined in online supplemental appendix E. In referring to the need to establish two new cards for pregnant and parenting athletes (ie, Recommendation 1), an athlete said, ‘It’s brilliant. I love it’, and another athlete stated, ‘Okay, wow, I think this is an impressive recommendation’. Similarly, about the recommendation to develop a policy to support pregnant, postpartum and parenting athletes (ie, Recommendation 2), an NSO administrator stated, ‘I think it’s amazing. It will hold the whole [sports] sector accountable, and I think Canada

should play a leading role, right? We have a progressive policy and should do the same in sport’.

Despite widespread support for all seven of the newly refined evidence-based policy and practice recommendations, the participants outlined four points to enhance the clarity of the recommendations further. Specifically, participants suggested the need to (a) stipulate that athletes who receive one of the two new cards are ‘unable to maintain full training and competition commitments due to pregnancy or parenting’ (ie, Recommendation 1), (b) stipulate that the 365 days stated in the policy (ie, Recommendation 2) is about ‘365 days after returning to their original Card (ie, National or Development Card)’, (c) clearly state that a new funding source is required for improvements to facilities (ie, Recommendation 3) and (d) include an educational module on athlete reproductive health (ie, Recommendation 5).

In addition to the four suggestions outlined above, participants in the follow-up interviews also highlighted the importance of further reconsideration to support athletes’ fertility expenses and access to fertility services. Participants shared a wide range of perspectives regarding fertility support. Specifically, some participants were adamant that recommendations should include fertility support for athletes, and others were adamantly opposed to this suggestion. Such discrepancies in perspectives suggest that some middle ground could be reached to support athletes. Therefore, it was suggested that Sport Canada further explore this topic. In addition, some participants highlighted the need for Sport Canada to consider pregnancy, postpartum and parenting supports that could be provided to staff at NSOs so as not to create inequities between the support provided to athletes and the support provided to staff. Indeed, the recommendations provided in this specific report are athlete-focused. Still, some of the recommendations could benefit staff, such as creating a new funding source for facilities that accommodate the needs of parents (ie, Recommendation 3).

DISCUSSION AND CONCLUSION

The collaborative processes employed in this research serve as a model for sports organisations to develop evidence-based policies and practices that can support pregnant, postpartum and parenting athletes. This research is one of the first published studies to use systematic research methodology to identify evidence to inform policy and practice recommendations for pregnant, postpartum and parenting athletes. Importantly, the evidence-based policy and practice recommendations that were developed in this research have been *confirmed* with a sample of NSO administrators and athlete groups in Canada, including representatives of the Canadian Paralympic Committee Athletes’ Council, Canadian Olympic Committee Athletes’ Commission and AthletesCAN. Most consultation participants expressed hope that Sport Canada will rapidly implement the recommendations outlined in the report. As stated by

one of the athletes, ‘I would say if there’s a time where things could happen, we’re at the best point’.

The seven evidenced-based policy and practice recommendations were submitted to Sport Canada in April 2023. In January 2024, our team received an update from Sport Canada indicating that an internal analysis of the recommendations had been conducted and that the recommendations were ‘spurring action’. By acting on the refined and confirmed recommendations, Sport Canada will be a world leader in supporting pregnant and parenting athletes while taking a major step towards achieving gender equity by 2035. As clearly stated by a sports administrator, ‘Can we be proactive? Can we work in a system that we are more visionary around these things? That’s the ideal state. And I think everybody has something to contribute and something to be responsible for’.

Through our in-depth consultation and engagement process, many participants, including NSO administrators and coaches, indicated that they do not have the capacity or expertise to develop evidence-based policy and/or practice recommendations to support pregnant and parenting athletes. This manuscript outlines key steps and consultation processes that other organisations and countries can use to develop evidence-based sports policy and practice recommendations. Despite the various strengths of this research, including its significant potential to positively impact sports policy and practice landscape in Canada, this research also has limitations. Most notably, the Canadian context in which this research is grounded is both a strength and a limitation. All countries, for example, have distinct funding models and national sports organisations that support high-performance athletes; grounding this study within a Canadian context allowed for very context-specific and detailed recommendations to be developed. However, the embeddedness in the Canadian system is also a weakness. The extent to which specific recommendations can and should be applied in other countries worldwide requires further investigation. The next step in this critical work to support pregnant, postpartum and parenting high-performance athletes is to analyse the transferability of these recommendations to sports organisations in other countries and to examine policy and practice recommendations that international sports organisations must address. For example, enacting a policy that protects an athlete’s international ranking in their respective sport when they take a leave due to pregnancy is beyond the scope of any individual country or national sports organisation. An international and concerted effort to support pregnant, postpartum, and parenting high-performance athletes is critical for ensuring the equitable participation of women in sports.

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