



Policy-influencer perspectives on the development, adoption, and implementation of provincial school-based daily physical activity policies across Canada: A national case study

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ABSTRACT

Objectives: School-based daily physical activity (DPA) policies represent a promising intervention for increasing physical activity levels among children. Between 2005 and 2010, five Canadian provinces adopted and implemented DPA policies. This national case study explored facilitators and challenges to developing, adopting and implementing DPA policies from the perspective of key stakeholders ('policy-influencers') in these five provinces. **Methods:** Development, adoption and implementation of DPA policies at the provincial level was the phenomenon of interest, with each province constituting a distinct case. Semi-structured interviews were conducted with 15 purposively selected policy-influencers across the five case provinces. Cases were first analyzed separately, and then concurrently in a cross-case comparison. Qualitative content analysis was used to code interviews and develop themes.

Results: Four themes related to the development, adoption, and implementation of DPA policies emerged: *existing resources and capacity for policy change*; *top-down policy development/adoption and bottom-up implementation*; *political will and windows of opportunity*; and, *ideology and policy change*. Each of these themes encompassed facilitators and challenges related to policy processes surrounding development, adoption and implementation of DPA policies.

Conclusion: These findings can inform development of future health-related policies in schools. Stakeholders can, for instance, remain attuned to the opening of political windows and capitalize on them as an opportunity to advocate for policy change or create communities of practice to enhance coordination among policy stakeholders. Future studies that explore why other jurisdictions have failed to adopt DPA policies might yield novel insights regarding leverage points to support widespread diffusion of DPA policies.

1. Introduction

Regular physical activity supports positive physical, cognitive and psychological/social health among school-aged children and youth (Poitras et al., 2016). As such, the Canadian 24-hour movement guidelines for children and youth (aged 5–17 years) recommend that young people participate in at least 60 min of daily moderate-to-vigorous physical activity for optimal health (Tremblay et al., 2016). However, only 40% of school-aged children and youth in Canada meet these

guidelines, with boys being twice as likely as girls to meet them (Colley et al., 2017).

School-based physical activity policies establish minimum physical activity standards that students must achieve during the school day or week, and as such may represent a promising means of reducing physical inactivity among children (Faulkner, Zeglen, Leatherdale, Manske, & Stone, 2014; Masse, Naiman, & Naylor, 2013). Between 2005 and 2010 five Canadian provinces adopted and implemented school-based daily physical activity (DPA) policies (Fig. 1): Alberta (AB) (Alberta

Abbreviations: AB, Alberta; BC, British Columbia; DPA, daily physical activity; MB, Manitoba; ON, Ontario; SK, Saskatchewan.

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Education, 2006), Ontario (ON) (Ontario Ministry of Education, 2005), Manitoba (MB) (Manitoba Education, 2007), British Columbia (BC) (British Columbia Ministry of Education, 2011) and Saskatchewan (SK) (Saskatchewan Ministry of Education, 2010). Each provincial strategy was unique, ranging from mandatory policies (BC, AB, ON), to a voluntary guideline (SK), to new physical and health education curricula (MB); Table 1 provides contextual information about each province. In each province, a DPA policy was adopted by the respective provincial Ministry of Education and implementation was expected (although not necessarily enforced) in all schools shortly thereafter.

Policy development, adoption and implementation are complex and dynamic processes that require participation and engagement from a variety of stakeholders, or 'policy-influencers'. Policy development is the policy step during which government decision-makers become aware of ideas or problems to be addressed, for example through the opening of policy windows (Howlett, Ramesh, & Perl, 2009). In this stage, the issue is formally added to a political agenda and policy makers then brainstorm potential solutions and a course of action to address the issue. Policy adoption is the one-time decision to move forward with one policy option (Howlett et al., 2009). At this stage, only those with the policy- and decision-making power have the authority to make the final decision on how to move forward. Policy implementation is the step that involves putting the decision into practice (Howlett et al., 2009). It requires planning and allocating additional funding and human resources. At this stage it is also important that policy details are clearly outlined and easy to understand by those who will be applying and affected by the policy.

Yet, current understanding of processes that led to the emergence of DPA policies as a viable solution to increasing physical activity levels among Canadian children is incomplete (Kohl & Cook, 2013; Olstad, Campbell, Raine, & Nykiforuk, 2015). A systematic review of implementation and impact of DPA policies in Canada was previously conducted, and this review also compiled timelines detailing key events that preceded adoption and implementation of DPA policies in each province (Olstad et al., 2015). While these timelines provided important data pertaining to the historical trajectory of DPA policies, in the absence of key informant interviews, the review could not discern the relative importance of these historical events in the emergence of DPA as a policy solution, or the associated facilitators and challenges. Given that eight Canadian provinces and territories have yet to adopt their own DPA policies, a better understanding of facilitators and challenges encountered during developing, adopting and implementing DPA policies can inform efforts to accelerate the spread of DPA policies both nationally and internationally. Thus, the purpose of this national case study was to explore facilitators and challenges to developing, adopting and implementing DPA policies from the perspective of key stakeholders ('policy-influencers') in the five Canadian provinces with DPA policies.

2. Methods

A multiple case study design allowed us to explore processes surrounding development, adoption and implementation of provincial DPA policies across Canada in an in-depth manner within a real-world context (Yin, 2009). Development, adoption and implementation of DPA policies at the provincial level was considered the phenomenon of interest, with each province contributing to a national case study of provincial DPA policies. Semi-structured interviews were conducted with participants from each of the five case provinces concurrently between November 2015 to January 2016.

2.1. Participant recruitment

Participants were purposively selected based on their direct involvement in developing, adopting and/or implementing DPA policies in their respective provinces to ensure information-rich responses. Policy-influencers from provincial government and physical activity organizations were identified through consulting government and organization websites and published policy documents. Participants were deemed eligible if they self-identified as having been involved with the DPA policy process in their province and if they were a past or current employee of the provincial government or a provincial physical activity promotion organization. Snowball sampling was also conducted to identify potential policy-influencers by asking for recommendations from study participants and other experts in the field (i.e., researchers and representatives from pertinent government ministries and physical activity organizations). Recruitment was completed when snowball sampling revealed no new policy influencers and/or interview responses did not reveal new themes and existing ideas were repeated across participants. This multi-pronged approach facilitated identification of the most knowledgeable policy-influencers, including individuals who had since moved on to other positions.

2.2. Development of the interview guide

The policy stages framework was used to inform development of interview questions, as the five policy stages (agenda-setting, formulation, adoption, implementation, and evaluation) aligned with our research objectives (Howlett et al., 2009). The interview guide requested information from participants pertaining to processes of DPA policy development, adoption, and implementation. Interview questions also focused on both the historical context and current status of each policy. Initial questions asked participants to describe processes surrounding development, adoption and implementation of DPA policies in their province. Subsequent questions probed why their organization/government ministry believed it was important to adopt a DPA policy, what internal and external factors facilitated or hindered policy development, adoption, and implementation, and if/how the policy had

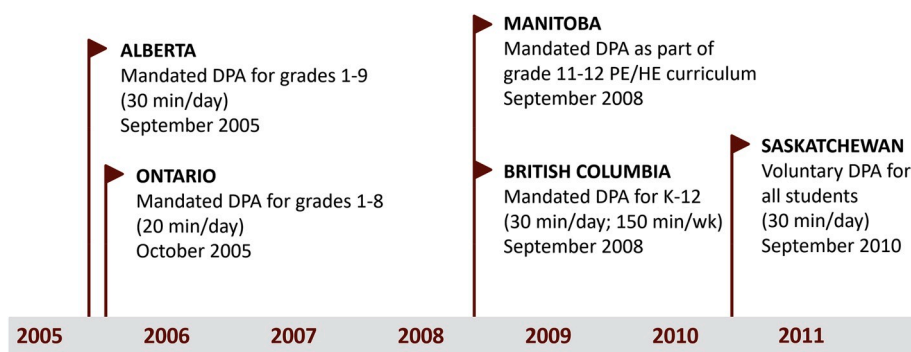


Fig. 1. Timeline of adoption of provincial daily physical activity policies across Canada
DPA: daily physical activity; HE: health education; K: kindergarten; PE: physical education.

Table 1
Characteristics of DPA adopter Provinces in Canada (Statistics Canada).

	Alberta	Ontario	British Columbia	Manitoba	Saskatchewan
Year of DPA policy adoption	2005	2005	2008	2008	2010
Population size	3,321,768	12,528,663	4,349,336	1,197,775	1,051,443
Percent of population living in Urban vs Rural areas	82%/18%	85%/15%	85%/15%	72%/28%	65%/35%
Gross domestic product (GDP) x 1,000,000	248,615.4	596,629.2	195,789.1	51,668.8	68,913.4

been monitored or evaluated.

2.3. Data collection

Semi-structured interviews were conducted with 15 key informants from each of the five provinces between November 2015 and January 2016, with the breakdown as follows: British Columbia (n = 4), Alberta (n = 5), Saskatchewan (n = 2), Manitoba (n = 1) and Ontario (n = 3). Participants included both past and current employees of provincial governments (i.e., bureaucrats within the Ministry of Education or Ministry of Health, n = 8), and provincial organizations supporting physical activity in schools (n = 7). In general, there were very few people *directly involved* with DPA policy development in provinces across Canada, resulting in small pool of possible interview participants. Furthermore, many staff that were involved in DPA development had since retired or moved on to other positions: their current contact information was not available at the time of this study. However, there was sufficient information power (Malterud, Siersma, & Guassora, 2016) because: i) the aim was narrow: DPA policy is a specific, well-defined topic; ii) the specificity was dense: we only interviewed highly knowledgeable policy influencers that are experts in the field; iii) theory was applied: the policy stages framework was used to inform the interview guide; iv) the dialogue was strong: interviews lasted on average 52 min, participants were able to elaborate on all interview questions, and there was repetition of ideas and themes across participants; and v) analysis involved provincial-level coding followed by a national-level case study analysis. The lead author conducted all interviews by telephone. Interviews were digitally recorded and transcribed verbatim, and lasted on average 52 min. Ethical approval was granted by the University of Alberta Research Ethics Board. Participants were provided with an information letter describing the study in advance of the interview. Voluntary, informed consent was obtained from all participants verbally using a script approved by the research ethics board.

2.4. Data analysis

Qualitative thematic analysis was used to code interview transcripts in a mixed inductive and deductive manner (Hsieh & Shannon, 2005) and was informed by procedures described by Mayan (Mayan, 2009) and Saldana (Saldana, 2009). NVivo qualitative analysis software was used to organize the data (QSR International; Burlington, MA USA; Version 11). Using this pragmatic approach, each provincial case was analyzed separately, followed by a national case study analysis of provincial-level policy processes, as described below.

First, the lead author read each transcribed interview to become familiar with participant responses. Codes were generated inductively and deductively, using the policy stages framework, to assign meaning to portions of text within each transcript. Next, codes relating to similar concepts were grouped into larger categories. A different set of categories was created for each province based on codes from province-specific participants. To substantiate the coding and grouping process, internal and external homogeneity were examined to determine if codes and categories were aligned within (internal homogeneity) and between groupings (external homogeneity) (Mayan, 2009). Finally, an analysis of a national case study was conducted to organize categories from individual provinces into themes that were common to all cases. The

comparison involved reviewing all categories to identify similarities, differences, and relationships between categories across cases to discern overarching themes. Codes, categories, and themes were reviewed by the corresponding author to reduce single-investigator bias. When there was disagreement between the two coders, the authors reviewed the original transcript for additional quotes that supported the code and held a discussion to determine if the code was appropriate. Consensus was reached on all disagreements. DPA policy documents were used to verify timelines and alignment with participants responses during interviews.

Strategies to enhance rigour included maintaining an audit trail of decision-making processes throughout data collection and analysis, concurrent data generation and analysis, constant comparison of codes, categories and themes with raw data, linking interpretations with raw data by presenting participant quotes, and peer debriefing to promote dependability during the analytic process.

3. Results

Four themes related to facilitators and challenges with the DPA policy process emerged from the analysis: *existing resources and capacity for policy change*; *top-down policy development/adoption and bottom-up implementation*; *political will and windows of opportunity*; and *ideology and policy change*.

3.1. Existing resources and capacity for policy change

The type and extent of a province's *existing resources and capacity for policy change* influenced the DPA policy process by either facilitating or hindering policy development, adoption and/or implementation. For example, in both British Columbia and Manitoba, there was evidence of existing efforts to address the issue of childhood health and physical inactivity from provincial reports at the time. One participant from British Columbia indicated that: "Our provincial health officer had issued a report ... in 2003 called An Ounce of Prevention. And it ... helped to kick-start a cascade of different initiatives where there was a stronger focus on health in the school setting" (BC). Participants from Alberta described how having a relatively larger and resource-rich province positively influenced development and adoption of their DPA policy. For example, a participant suggested that Alberta Education had "a larger number of people working, permanent staff working than other ministries" (AB). This was regarded as having supported policy development, adoption and implementation because more staff were available to plan and actualize the policy. However, having such resources available was not a consistent predictor of policy success. For example, in the populous and relatively resource-rich province of Ontario, the fact that "Ontario's a massive province" (ON) was seen as a challenge to DPA implementation as participants indicated that it was not possible for the provincial government to adequately oversee implementation of DPA in all 72 of its school boards and nearly 4000 elementary schools. Furthermore, one participant suggested that provincial ministries did not often communicate with one another and instead worked in 'silos', resulting in overlapping policies and initiatives: "I think that's probably one of the biggest issues that we face in the province, is just the overlapping policies and initiatives versus focusing on deeper implementation of existing policies" (ON). Meanwhile, one participant from the less populous province of Saskatchewan claimed that the small number of staff within

their Ministry of Education received significant support from non-governmental groups and organizations, which facilitated development, adoption, and implementation of their DPA policy. Thus, although having a relatively larger and well-resourced province was important in some contexts, the level of coordination and collaboration between stakeholders was more important in supporting policy development, adoption and implementation in others.

3.2. Top-down policy development/adoption and bottom-up implementation

DPA policies were developed and adopted in a top-down approach by each province's Ministry of Education with implementation downloaded to educators in schools. However, the connection between policy expectations at the provincial government level and front-line implementation in schools varied across cases. In the provinces of British Columbia, Alberta, and Ontario, some participants indicated that DPA policies were developed and adopted at the provincial level, but implementation was the responsibility of individual school boards to allow for flexibility in meeting the needs of local educators and students. For example, in Alberta one participant stated: "The policy was ... created by Alberta Education, but it's the responsibility of the school jurisdictions and the superintendents within those jurisdictions to ensure that the policy is being mandated" (AB). In some provinces, this gap between provincial government policy expectations and challenges related to actual implementation in schools was filled by the support and involvement of provincial physical activity organizations. In British Columbia, Alberta, and Ontario, provincial physical activity organizations acted as liaisons and advocates to coordinate resources and support for DPA between Ministries of Education and school boards. For example, following adoption of DPA policy in Ontario, a provincial physical activity organization took the initiative to coordinate DPA funding across the school boards in the province to develop centralized educator training and resources to support implementation. Furthermore, in the province of Manitoba, participants indicated that schools and educators experienced fewer challenges during implementation because the Ministry of Education had consulted educators during policy development, and "by doing that [teacher consultation] we also got buy-in right from the start. So it was a pretty smooth implementation" (MB).

Challenges described included power imbalances between the provincial government and educators responsible for DPA implementation. In Ontario, DPA was colloquially referred to as a 'thou shalt' policy, demonstrating the authority of the provincial government: "It's part of the curriculum and it's a part of the Education Act, so it is a requirement. It's not voluntary. It's not optional. It is a mandatory requirement" (ON). The top-down mandating of DPA by government contributed to implementation challenges in schools because educators felt pressured to provide DPA, but often lacked the resources to do so.

3.3. Impact on implementation success

Despite the mandatory nature of most DPA policies, all provinces faced challenges with implementing DPA in schools and no province reported complete implementation in schools. For example, in British Columbia participants estimated that "60–65% of the school and school administrators legitimately implement the DPA policy ... but there's still a long way to go" (BC). Similarly, a participant from Manitoba stated that "continued implementation is a problem too ... the continued support could use a little more attention" (MB). In Saskatchewan, challenges to DPA implementation included contradictory expectations from the Ministry of Education that educators simultaneously implement core curricula and DPA. For example, one participant suggested that DPA was no longer a priority in schools because "the expectation from the Ministry [of Education] level is get those language arts scores up ... that's all they do is language arts at the expense of everything else" (SK). Overall, participants from all provinces shared similar sentiments

that "[DPA had] maybe just not lived up to expectations" (ON) in that the policies were poorly implemented and there was little to no evidence of increased student physical activity levels post policy implementation.

3.4. Political will and windows of opportunity

Political influences including *political will and policy windows of opportunity* associated with provincial elections facilitated policy development and adoption by putting DPA on the political agenda. In Ontario and Saskatchewan, DPA was outlined in election party platforms and DPA policies were announced shortly after provincial elections. In Ontario, this type of policy development was described as typical within the province: "It's a political decision. The political team would have done their research and their consultations ... It's similar to many of the policies that we have in that it's part of a guided direction from the government at the time" (ON). Although not directly part of a commitment made during a provincial election, one participant from Manitoba suggested that their DPA policy was occasioned by a change in the provincial governing party: "When the new government came in, I think there was a quite a lot of support for promoting active healthy lifestyles in schools" (MB). Similarly, in the provinces of British Columbia and Alberta, political influence from leaders and bureaucrats within the Ministry of Education facilitated policy development and adoption. For example, in British Columbia, "Our minister at the time ... was quite supportive of [DPA] ... there was definitely a lot of political will around it" (BC). Meanwhile, in Alberta, the Minister of Education was a key champion for a DPA policy due to his belief in the importance of childhood physical activity and his views on the existing physical education program of study: "[The Minister of Education] had been very clear: he hated phys ed ... he wanted it to be fun, he wanted it to be engaging" (AB).

However, political will and influence were also described as a challenge in some cases where DPA was deployed for political advantage. In Alberta one participant suggested that politics, rather than evidence, drove DPA adoption there: "DPA could be done and it could make the Minister look good" (AB). Similarly, one participant from Saskatchewan indicated that the DPA policy announcement may have been made to gain political support during an election. This policy announcement was described as a shock to educators and other education stakeholders who had not been involved in policy development: "It just happened. It was in an election time and all of a sudden [DPA] was just there ... we had no idea it was coming" (SK).

3.5. Ideology and policy change

DPA policies were framed as a solution to the problems of chronic disease (British Columbia and Ontario), childhood obesity (Manitoba), and physical inactivity (Alberta, Saskatchewan, and Manitoba). In British Columbia, one participant claimed that "the government saw this [DPA policy] as our way of prevention and reducing the number of chronic diseases that will be seen from our children" (BC). The framing of DPA around promoting child health was also described as aligned with the values and beliefs of participants and other policy-influencers. For instance, in Saskatchewan, one participant stated: "I never ran across anyone, I'll just speak from the ministry level. I never ran across anyone that disagreed that physical education and physical activity wasn't important" (SK). Similarly, the ideology in Alberta and Saskatchewan was that DPA policies were considered "the right idea" (AB) and had "real value" (SK). Despite the belief in the importance of DPA for students, participants acknowledged that DPA implementation was incomplete. Nevertheless, all participants felt that their respective provincial DPA policies would likely remain in place, although participants in British Columbia, Alberta, and Ontario indicated that discussions were underway within Ministries of Education to consider revising their policies.

A challenge to policy change and revision was the tension between

policy-influencer ideology and the evidence of incomplete policy implementation in schools. The strong belief in the importance of physical activity and health promotion in children was demonstrated as a moral attachment to the DPA policy by participants from British Columbia, Alberta and Ontario. For example, despite evidence of ongoing challenges related to implementation of DPA policies, some participants expressed their reluctance to revise or revoke their policies. Participants from British Columbia and Alberta captured this idea when they said: "It would be too bad if [DPA] was just taken away ... even if it's not perfect" (BC); and "I'd rather have a DPA policy than not" (AB). Some participants perceived that revoking DPA policies was admitting to failure: "[DPA is] one of our signature policies ... it would take a lot of guts to basically say 'you know this whole DPA thing, yeah we kind of got that wrong'" (ON). However, participants also alluded to ideas and plans to update DPA policies, which was seen as an opportunity for policy improvement. Potential policy change options described by participants included: changing DPA from a mandated policy to a voluntary guideline (BC); changing the regulations to promote continuous physical activity throughout the school day rather than having a defined start and end time for activity (AB); and breaking down the DPA requirement into smaller segments throughout the day (i.e., a 20-min DPA requirement that could be met in two 10-min blocks) (ON). Overall, participants believed in the importance of DPA policies to improve child health, but felt that if policy change was to occur, it was important to revise rather than revoke policies.

4. Discussion

This study found that *existing resources and capacity for policy change; top-down policy development/adoption and bottom-up implementation; political will and windows of opportunity*; and, *ideology and policy change* were dominant themes that best captured facilitators and challenges to developing, adopting, and implementing DPA policies in five Canadian provinces. These themes align with findings from an international review of physical activity policy from select countries (Australia, Brazil, Canada, Netherlands, New Zealand, Switzerland, and Scotland), which included 11 criteria for successful physical activity policy development (Bull, Bellew, Schöppe, & Bauman, 2004). Specifically, the four themes aligned with the criteria; stable support, related to staff and resources; coalitions/alliances/partnerships, collaboration between government and physical activity organizations; different levels, policy development and implementation at the local, provincial and national level; integration, meaning alignment with other physical activity initiatives; and identity, to frame policy within a unified brand (Bull et al., 2004). Therefore, each of these themes may serve as a possible leverage point to influence the DPA policy process in Canada, and has implications for other health promotion policies in comparable countries.

Within the theme *existing resources and capacity for policy change*, provincial size, resource availability, and coordination among stakeholders influenced DPA policy adoption. We expected that larger, resource-rich jurisdictions and organizations would more readily adopt new policies due to greater availability of experts and supportive resources (Shipan & Volden, 2008), and indeed, participant responses from British Columbia and Alberta suggested that policy development and adoption was supported by the larger sizes of their governments and availability of resources. However, in the case of Ontario, the large size of government acted as an implementation barrier and more coordination was needed to support implementation at the district and school level. Coordination of stakeholders was also important for policy success, as exhibited by adoption of a DPA policy in the small province of Saskatchewan despite limited availability of supportive resources. Similarly, in studies of school-based physical activity policy adoption in the United States, financial grants and teacher training to delivery physical activity programming in school were deemed important resources to support implementation (Carlson et al., 2013; Story, Nannery, & Schwartz, 2009).

Consistent with the theme *top-down policy development/adoption and bottom-up implementation*, others have concluded that physical activity policies in Canada are, on the whole, fragmented and poorly coordinated (Loitz, Stearns, Fraser, Storey, & Spence, 2017; Spence, Faulkner, Costas Bradstreet, Duggan, & Tremblay, 2016). Similarly, the DPA literature also explicitly highlights the gap between policy expectations and implementation realities, as DPA has not been fully implemented in all schools across adopter provinces (Faulkner et al., 2014; Hobin, Leatherdale, Manske, & Robertson-Wilson, 2010; Leatherdale, 2010; Leatherdale, Manske, Faulkner, Arbour, & Bredin, 2010; Masse et al., 2013; Stone, Faulkner, Zeglen-Hunt, & Bonne, 2012; Watts, Masse, & Naylor, 2014). For example, in Ontario less than half of students were provided with opportunities for DPA every school day (Faulkner et al., 2014; Stone et al., 2012), and in British Columbia the estimates of DPA implementation in schools ranged from 14 to 90% (Masse et al., 2013; Watts et al., 2014). These findings align with our finding of a significant gap between the expectation of complete DPA implementation, and the reality that schools and educators were not adequately equipped to deliver DPA.

Implementation challenges described in the DPA policy literature include lack of educator time and resources, confusion regarding policy expectations, tension and misalignment between the Ministry of Education and educators, and lack of monitoring of policy implementation and physical activity outcomes (Masse et al., 2013; Middlemass Strampel, Martin, Johnson, & Ianca, 2014; Patton, 2012; Rickwood, 2014). We similarly found that limited and uncoordinated resource provision, educator training and support, along with tensions between educators and Ministries of Education, hindered implementation of DPA policies. However, the current study did not explore implementation challenges in an in-depth manner due to the focus on interviewing high-level policy influencers, rather than educators and students. The school-based PA literature in Canada and the United States suggests that strategies to improve implementation might include increasing educator resources and training, providing long-term resources that promote policy sustainability, and developing and executing policy evaluation plans (Carlson et al., 2013; Middlemass Strampel et al., 2014; Robertson-Wilson & Levesque, 2009; Robertson-Wilson, Dargavel, Bryden, & Giles-Corti, 2012).

Our findings revealed that DPA policy adoption was influenced by elected politicians and Ministers of Education, as captured by the theme *political will and windows of opportunity*. Similarly, an Alberta-based study found that the political influence of the Minister of Education facilitated adoption of its DPA policy, whereas a lack of political support prevented adoption of an alternative walk to school policy (Gladwin, Church, & Plotnikoff, 2008). With respect to Ontario's DPA policy, political influence was found to have facilitated agenda setting and policy adoption (Allison et al., 2014). However, the authors proposed that a challenge to policy adoption is that politicians tend to focus on short-term solutions to problems that may require longer-term actions. Given the long time frames required for policies to measurably increase physical activity participation in children (Craig, 2011), such short-term thinking may explain why other jurisdictions have so far failed to adopt DPA policies.

The influence of political leaders on DPA policy processes supports the notion that policy making is often limited to a few powerful elites (Bambra, Fox, & Scott-Samuel, 2005). This idea was reinforced by one participant who referred to DPA in Ontario as a 'thou shalt' policy, emphasizing the top-down nature of policy development and adoption. Bottom-up, community-based approaches to policy making could support development of policies that are more acceptable to stakeholders, and hence more likely to be fully implemented (Bambra et al., 2005). With respect to DPA policies, this could entail soliciting educator, parent, and student input during policy making. Involving community members in policy making may also promote greater policy accountability (Church et al., 2002). The tolerance, or social climate, for physical activity policies is quite high among Canadians, suggesting that

collaborative approaches to policy making could be highly successful (McGettrick, Kongats, Raine, Voyer, & Nykiforuk, 2019; Yun et al., 2018).

The theme *ideology and policy change* was concerned with policy-influencer and provincial government ideology towards DPA. In the present study, policy-influencers consistently expressed strong belief in the importance of promoting student physical activity to reduce the future burden of chronic disease. However, findings from other Canadian studies suggest that others, such as educators, vary in their perceptions of DPA. In British Columbia, DPA was perceived to align with school health philosophies, thereby facilitating policy uptake and implementation (Masse et al., 2013). Conversely, in Ontario some educators believed they were only responsible for academic programs of study and that parents and communities should assume responsibility for promoting physical activity among children (Middlemass Strampel et al., 2014; Rickwood, 2014). These findings highlight the importance of fostering a holistic approach to education, such as through comprehensive school health (Veugelers & Schwartz, 2010). Integrating health-related considerations throughout school curricula could also support school cultures that value opportunities for physical activity.

In alignment with the theme *political will and windows of opportunity*, our findings suggested that DPA was sometimes put on the political agenda to gain votes and to enhance the profile of Ministers of Education. This is consistent with the policy theory literature which suggests that ideology and values often influence policy development, both positively and negatively (Carter et al., 2011; Clavier & de Leeuw, 2013; de Leeuw, Clavier, & Breton, 2014). In particular, policy-influencer values can sometimes take precedence over evidentiary considerations (Carter et al., 2011). Alternatively, policies may simply entail symbolic projections of a government's concern, addressing a tangible yet insignificant element of a more complex problem (de Leeuw et al., 2014; Fotaki, 2010). In such cases the public may be led to believe that governments are acting on an issue of public health concern, when in reality little has changed. The findings from this study have largely focused on the challenges with policy development, adoption, and implementation. However, by applying ideas from the field of implementation science, there is an opportunity to present recommendations and describe factors that may enable future policy makers to make more informed decision around policy development and planning (Nilsen, Ståhl, Roback, & Cairney, 2013). This study focused on the larger context of DPA policy implementation within provinces and across Canada. In alignment with the field of implementation science (Nilsen et al., 2013), this study would benefit from an exploration of the local context within the school setting to better understand the organizational characteristics limiting implementation by educators, school administrators, and students. In particular, this would allow us to better understand (and develop solutions to) the resource gaps described in the theme *top-down policy*

development/adoption and bottom-up implementation. As well, to further study DPA policy development, adoption, and implementation, the application of theory, such as Diffusion of Innovations Theory (Rogers, 2003) or the Advocacy Coalition Framework (Sabatier & Weible, 2014), would provide a pragmatic approach to understand the processes influencing policy change, beyond the descriptions provided in this study. Findings from the study have been presented in Table 2 as recommendations or factors to consider related to the three policy stages explored in this study: development, adoption, and implementation.

4.1. Strengths and limitations

This study provides a novel and in-depth perspective of facilitators and challenges to developing, adopting, and implementing DPA policies from the perspective of key policy-influencers. Given that we identified common themes across a variety of jurisdictions with varying DPA policies, findings may be transferable to other jurisdictions across Canada and similar developed nations.

Across Canada, there were limited policy experts who were eligible to participate in this study by virtue of having played key roles in DPA policy development, adoption and/or implementation. In the case of Manitoba, only one policy-influencer participated in an interview. The small participant pool was also partially due to staff having since retired or moved on from their role in government or provincial physical activity organizations. Nevertheless, key informants provided rich descriptions of the factors influencing DPA policy development, adoption, and implementation which allowed us to fulfill our research objectives. Moreover, similar themes were present across cases.

Future research is needed to better understand the perspectives of individuals outside of provincial government and physical activity organizations pertaining to facilitators and challenges to developing, adopting and implementing DPA policies. Some participants spoke about the important role that superintendents played during policy implementation. To expand the scope of the study and achieve a larger and more diverse pool of participants, it may be beneficial to interview school administrators, educators, parents, and students in subsequent studies to obtain their unique perspectives of factors influencing DPA policy processes.

5. Conclusions

This study contributes to an increased understanding of facilitators and challenges related to developing, adopting, and implementing school-based DPA policies across Canada. Findings suggest that *existing resources and capacity for policy change*; *top-down policy development/adoption and bottom-up implementation*; *political will and windows of opportunity*; and, *ideology and policy change* shaped development, adoption,

Table 2
Summary of themes and recommendations related to the policy stages framework.

	Policy Development	Policy Adoption	Policy Implementation
Existing resources and capacity for policy change	Staff support needed at the provincial government and community organization level to develop policy		Require sufficient, coordinated financial and human resources (staff and training) to implement and maintain policy over the long-term.
Top-down policy development/adoption and bottom-up implementation	Provincial governments are well suited to initiate and development policy in a top-down manner. Key stakeholders for school districts and community organizations should be included early in policy development planning.	Provincial governments have the resources and capacity to readily adopt policy. Efforts are needed to effectively communicate new mandates to the local level.	Implementation led by school districts and boards at the local level may be effective if appropriate resources are provided.
Political will and windows of opportunity	Launch policies around political changes (e.g., elections) and windows of opportunity to create new interest and/or align with current political climate.	Policy announcements tied to political elections may expedite the adoption process and support public buy-in.	To ensure meaningful and sustained implementation, plan long-term policy implementation strategies that extend beyond the short window of opportunity.
Ideology and policy change	Frame policies to align with health promotion and wellness as these are commonly accepted by the public.		Develop monitoring and evaluation plans to ensure policy continues to achieve goals.

and implementation of DPA policies in schools. Themes that emerged from this study can inform development of future health-related policies in schools. Stakeholders can, for instance, remain attuned to the opening of political windows and capitalize on them as a key opportunity to advocate for policy change; or they might form communities of practice or host networking events to enhance coordination amongst policy stakeholders. Future studies that explore why other jurisdictions have failed to adopt DPA policies might yield novel insights regarding key leverage points to support diffusion of DPA policies both nationally and internationally.

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Author contributions

EJC designed the study, collected, analyzed and interpreted the data and drafted the initial manuscript. DLO interpreted the data and produced the final version of the manuscript. JCS and KES interpreted the data and edited the manuscript. CLJN designed the study, supervised the research, interpreted the data, edited the manuscript and obtained funding. All authors read and approved the final manuscript.

Ethical approval

Ethical approval was granted by the University of Alberta Research Ethics Board (Pro00049723, June 26, 2015).

Informed consent

Informed consent was obtained verbally from all individual participants included in the study.

Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssmph.2020.100612>.

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