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Identifying Facilitators and Barriers in Quebec Schools to Promote Inclusive Physical Education

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Abstract: Inclusive physical education allows the development of social skills, attitudes, and awareness of peers about functional limitations and enhances the leadership skills of all children. However, the positive experience of children with functional limitations in inclusive physical education can be impacted by programs inadequate to their abilities and the limited training and knowledge of physical educators about teaching in consideration of their needs. The objective of this study was to identify the facilitators and barriers experienced by physical educators to include children with functional limitations in physical education in Quebec schools. A cross-sectional descriptive study with an online survey was conducted with physical education teachers and daycare educators. Descriptive statistics were used to analyze the data. A total of 149 participants (n = 130 physical education teachers) responded to the survey. Most respondents (79.5%) included children with functional limitations in activities with their classmates. However, 39.4% of respondents reported feeling not informed and not equipped to facilitate inclusion. This study identified the facilitators and barriers to physical education for children with functional limitations from the perspectives of physical educators, in Quebec schools, and the role of the latter to encourage inclusion.

Keywords: physical education teacher; inclusive education; children; functional limitations; physical education lessons

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1. Introduction

Regular physical activity in childhood has been linked to both physical and psychosocial benefits [1–4]. Nevertheless, studies have indicated that children with functional limitations (defined by the level of difficulty in six core functioning domains: seeing, hearing, mobility, communication, cognition, and self-care [5]) participate in physical activities less frequently than their healthy peers [6,7]. Consequently, most children with functional limitations do not reach the recommended level of physical activity required to benefit from its advantages. The consequences of reduced physical activity can lead to reduced health, social participation, and quality of life [7–10].

Individual, social, environmental, and political facilitators (e.g., a child's desire to be fit and active, parental or family support, adequate facilities, and skilled staff) and barriers (e.g., lack of physical or social skills in children, negative societal attitudes, inadequate facilities, and a lack of appropriate physical activity programs) have been shown to influence the participation in physical activity observed in children with functional limitations [11,12]. Educational institutions are often considered as an important environment for promoting physical activity and developing the skills necessary for regular physical

activity practice [13]. Indeed, optimal participation in physical education (PE) is considered a facilitator to increase physical activity in both typically developing children and children with functional limitations [14–16]. For children with functional limitations, the notion of inclusion in PE classes holds significant importance. Inclusion denotes integrating individuals with functional limitations within the same settings as their typically developing peers, offering them services tailored to their abilities and needs [17–19]. In the context of PE, this approach, known as inclusive PE, has demonstrated multiple benefits. It positively impacts the social skills, attitudes, and awareness of peers about functional limitations and enhances the leadership skills of all children [20–22].

However, a study showed that children with functional limitations perceived their experiences in inclusive PE as limited [23]. One of the cited reasons was the inadequacy of PE programs in effectively integrating children with functional limitations. In Canada, the provincial ministers of education regulate PE programs, leading to differences across the country. In Quebec, the Ministry of Education states that physical and motor development should be targeted at preschool (not mandatory; ages 4 to 5), while the development of a healthy and active lifestyle, movement skills in different physical activity settings and social interactions should be the focus for both elementary (ages 6 to 12) and secondary (ages 12 to 16) education [24–26]. PE teachers must complete a four-year undergraduate program before being allowed to teach at both elementary and secondary schools. Additionally, schools in Quebec also offer a school daycare where a high variety of activities are proposed to promote an active lifestyle and social interaction through different physical activity settings. School daycare educators require one to complete a professional study certificate to practice. To enable children with functional limitations to flourish in their education within a school environment, a school adaptation policy was implemented in 1999 to help children with functional limitations succeed in terms of education, socialization and qualification [27]. In this way, education is customized according to the child's needs by modifying existing curriculum or programs according to the abilities, needs and interests of students. The overall objective is to achieve the educational success of all students. Children with functional limitations are most impacted by this educational differentiation [28]. In addition, in the province of Quebec, families with children living with functional limitations sometimes have the options to attend either regular schools (i.e., shared classrooms with their healthy peers or specialized classrooms) or specialized schools.

Independently of the educational institutions, it is important for PE teachers and school daycare educators (collectively referred to as "PE educators" from now) to have the tools and knowledge to include children with functional limitations into different activities. In a recent review examining the perspectives of students with functional limitations regarding physical education, the findings emphasized that children could have positive experiences in PE when teachers offer suitable modifications and accommodations, coupled with kind and supportive interactions [29]. However, children with functional limitations express that their experience in inclusive PE is limited because physical educators lack the training to teach in a manner that considers their needs [23]. Considering the important role of PE educators play in the physical activity practice of children with functional limitations, questions arise about their knowledge of inclusive PE. The Quebec government has acknowledged physical activity as a priority in its 2021 policy on physical activity, sport and recreation entitled 'Quebecers on the Move!' [30]. This policy targets children and adolescents, given that recurrent physical activity practice at this age will likely maintain this active lifestyle into adulthood. Thus, the Quebec Government have suggested a survey of PE educators across the province on how inclusive elementary and secondary are towards children with functional limitations. With the Quebec government, *Adaptavie* and *Défi sportif AlterGo*, a non-profit organization specializing in adapted physical activity, have designed the Inter'Actif project to support PE educators in including children with functional limitations.

At the request of the government of Quebec, the aim of this study was to identify facilitators and barriers experienced by physical educators to include children with functional limitations in PE classes.

2. Materials and Methods

2.1. Design

A descriptive cross-sectional online survey was conducted. This study design was chosen due to the descriptive objective of the study concerning physical education teachers and school daycare educators. Ethical approval for this study was obtained from *Centre Intégré Universitaire de Santé et de Services Sociaux de la Capitale-Nationale* research ethics committee (approval number: 2021-2064).

2.2. Participants and Recruitment

A convenience sample of French-speaking PE teachers and daycare educators working in elementary and secondary (regular and specialized) schools in the province of Quebec (Canada) was recruited. An email containing the purpose of the study, the eligibility criteria and a link to the survey was sent to all Quebec school service centres, the 250 schools on the *Défi sportif AlterGo* mailing list, as well as to the direction of the *FÉÉPEQ (Fédération des éducateurs et éducatrices physiques enseignants du Québec)*, Quebec's daycare services as well as to all members of the Minister's Table on Active Living and the Ministry of Education Motor Development Committee. Respondents provided informed consent by completing and submitting the survey. Our sample size of 149 accounted for 3.1% of the 4797 PE educators registered in elementary and secondary schools in Quebec, based on a government report in 2015 [31].

2.3. Survey Construction

The survey was co-constructed by our research team and the members of Inter'Actif project, *Adaptavie* and *Défi sportif AlterGo*. All team members had expertise in adapted physical activity, rehabilitation and/or social inclusion through their training and professional experiences. A one-hour video conference was held to co-create the survey items, which were then reviewed by a PE teacher to ensure comprehensibility and applicability. The final version was based on iterative feedback from the research and the members of the Inter'Actif project. Additionally, a pilot testing of the final version was reviewed by two committee members. The pilot participant engaged in discussions with two members of the research team to assess the clarity and relevance of the questions. This phase allowed us to validate the questionnaire we had created. To ensure that responses were based on shared definitions, the survey defined PE and PA content as including core knowledge and the current continuum education. The questionnaire was designed based on the 7-step process recommended by the Association for Medical Education in Europe [32]. This process facilitated the questionnaire design to ensure questions were structured, clear and cohesive. The survey was posted on the *LimeSurvey* platform.

The survey comprised four sections and included 36 questions in total. The response formats included yes or no dichotomous choices and closed-ended simple and multiple-choice questions. Section 1: Sociodemographic Data *(number of questions = 19)* included information on the characteristics of the respondents, of the schools where they work, and of their educational backgrounds (academic or not). Section 2: Integration of students with functional limitations in PE classes *(number of questions = 8)*. This section included questions about the proportion of students with functional limitations participating in PE classes, but also about the reasons why some children did not participate from these classes. Section 3: Teaching strategies *(number of questions = 6)*. These questions addressed teaching and motor planning strategies used with children with functional limitations. Section 4: Additional training *(number of questions = 3)*. In this section, respondents were asked about information or resources that they would need to improve their inclusion in PE as well as the format of additional training they might be interested in attending.

2.4. Procedure

PE teachers and daycare educators were invited to complete an anonymous and self-reported online survey. The Tailored Design Methods was used as a guide for obtaining survey responses [33]. A first email containing the link to the survey was sent. In this e-mail, respondents were given two weeks to complete the survey. A reminder was sent after two weeks, and again two weeks later. The survey was launched in May 2021 and remained open until September 2021. Upon completing the questionnaire, respondents had the opportunity to enter a draw to win a gift card.

2.5. Data Analysis

Survey responses were collected online, and raw data were exported into Microsoft Excel 2021 (Microsoft Corporation, Redmond, WA, USA) for analysis. Descriptive statistics (means, standard deviations, frequencies and percentages) were used to describe the population and to summarize the data. The analysis of the responses was carried out by two members of the research team (M.H. and M.B.). Subsequently, the results were presented to the entire research team, allowing each member to contribute to the interpretation. Regarding questions about the ability and comfort level of including children with functional limitations in PE, responses choices were categorized as "very well" combined with "quite a bit" and "not very well" combined with "not at all". Additionally, for the question concerning respondents' satisfaction with the adaptation of PE classes, the response options were grouped into a single level, either agree or disagree.

3. Results

3.1. Sociodemographic Data

3.1.1. Respondents' Characteristics

A total of 149 respondents (55.70% women; 40.83 $\pm$ 8.6 years old) completed the online survey. Most respondents were PE teachers (n = 130; 87.2%) and the rest were daycare educators (12.8%). The characteristics of the PE teachers and school daycare educators are presented in Tables 1 and 2. Among the 149 respondents, most of the responders had between one and five years of experience with children with limitations (40.4%). PE teachers and daycare educators have reported teaching to children with, especially, autism spectrum disorder (79.2%), mobility impairment (specifically coordination disorders) (65.8%) and language disorders (55%).

Table 1. Physical education (PE) teachers' sociodemographic information.

Sociodemographic Information	
Gender (n = 130, n (%))	
Women	65 (50%)
Men	65 (50%)
Age, Years (n = 130, Mean (SD))	40.7 (8.9)
Level of education completed (n = 129, n (%))	
Secondary level	2 (1.6%)
Bachelor's degree in progress	1 (0.8%)
Completed bachelor's degree in PE	114 (88.4%)
Completed bachelor's degree in another subject	1 (0.8%)
Completed bachelor's degree in another field	1 (0.8%)
Master's degree	5 (3.9%)
PhD	1 (0.8%)
Other	4 (3.1%)
Profession (n = 130, n (%))	
Practitioner in regular classes only	62 (47.7%)
Practitioner in regular and special education classes	59 (45.4%)
Practitioner in special education classes only	9 (6.9%)

Table 1. *Cont.*

Sociodemographic Information	
Experience in teaching PE (*n* = 130, *n* (%))	
Less than 1 year	5 (3.8%)
1–5 years	16 (12.3%)
6–10 years	27 (20.8%)
More than 10 years	82 (63.1%)
Experience in teaching inclusive PE (*n* = 130, *n* (%))	
Less than 1 year	23 (17.7%)
1–5 years	52 (40%)
6–10 years	24 (18.5%)
More than 10 years	31 (23.8%)

Table 2. School daycare educators' sociodemographic information.

Sociodemographic Information	
Gender (*n* = 19, *n* (%))	
Women	18 (94.7%)
Men	1 (5.3%)
Age, Years (*n* = 19, Mean (SD))	41.8 (6.4)
Level of education completed (*n* = 19)	
Secondary level	13 (68.4%)
Completed bachelor's degree in another field	2 (10.5%)
Other	4 (21.1%)
Experience in teaching PE (*n* = 18, *n* (%))	
Less than 1 year	4 (22.2%)
1–5 years	3 (16.7%)
6–10 years	2 (11.1%)
More than 10 years	9 (50%)
Experience in teaching inclusive PE (*n* = 16, *n* (%))	
Less than 1 year	6 (37.5%)
1–5 years	7 (43.7%)
6–10 years	3 (18.8%)

3.1.2. Schools' Characteristics

In terms of place of work, 138 respondents work in a public regular school and 43 of them work in a regular school with special classes (i.e., classes offering adapted teaching for children with functional limitations). The respondents' school characteristics are presented in Table 3. The respondents were spread across all 17 administrative regions of the province of Quebec. The five most represented administrative regions were Montreal (18.1%), Montérégie (11.4%), Mauricie (9.4%), Laurentides (8%) and Lanaudière (8%) (Figure 1). Of all the respondents, 44.6% noticed that gymnasiums are not accessible for children with functional limitations. Gymnasium access was least frequent in regular public schools and schools with specialized classes. Most schools offer extracurricular physical activities and 73.8% respondents reported that their schools meet the recommended two hours of PE per week.

Table 3. Participants schools' characteristics.

Sociodemographic Information	
School type (*n* = 149, *n* (%))	
Regular public school	95 (63.8%)
Regular private school	2 (1.3%)
Special public school	9 (6%)
Regular public school with specialized classes	43 (28.9%)

Table 3. *Cont.*

Sociodemographic Information	
Primary or secondary (*n* = 149, *n* (%))	
Primary	105 (70.5%)
Secondary	37 (25.8%)
Primary and secondary	7 (4.7%)
Gym accessible (*n* = 148, *n* (%))	
Yes	82 (55.4%)
School provides extra PA activities (*n* = 149, *n* (%))	
Yes	109 (73.2%)
School offers a minimum of 2 h of PE classes per week (*n* = 149, *n* (%))	
Yes	110 (73.8%)

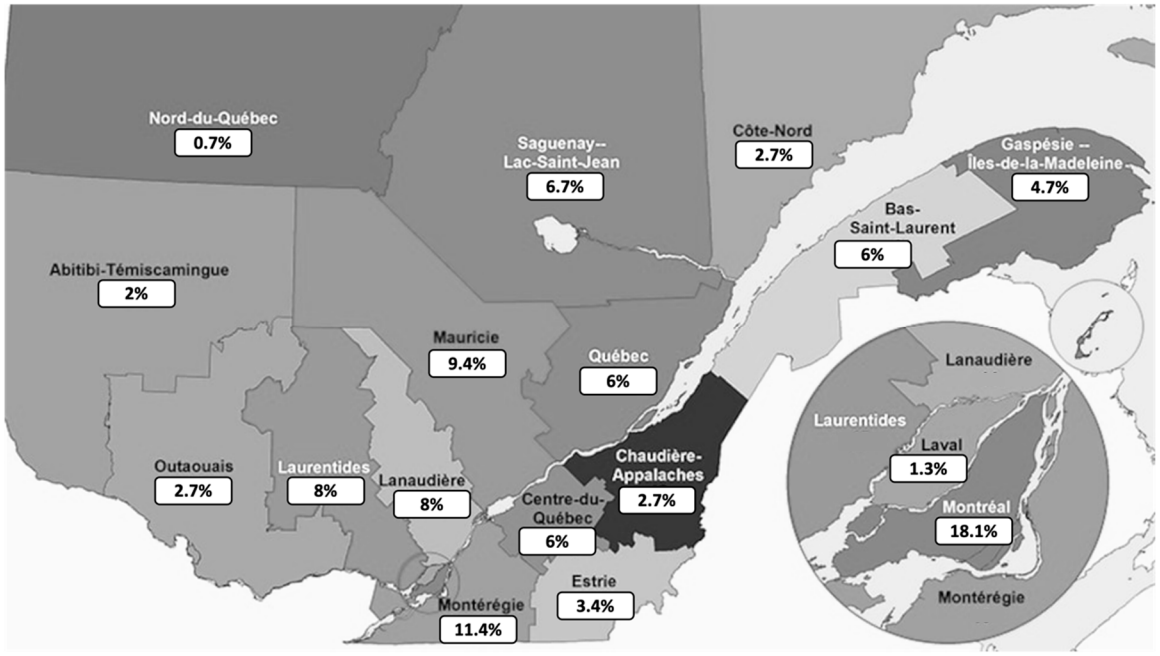

Figure 1. Representation of participants' administrative regions.

3.1.3. Academic and Non-Academic Training

Only 46.9% of the respondents having received training on PE adaptations during their university training. Among the respondents without university training in PE adaptation, 67.9% had a bachelor's degree in PE, 16.6% had a college diploma, and 5.1% had other diplomas such as a certificate in small-group animation, a specialized post-graduate diploma in school administration, or professional certificate in daycare. Following graduation from university, the number of individuals who did not take additional courses specific to inclusive PE is higher (77%). The main reason reported was the respondents' lack of knowledge about the existence of these courses (29.5%). For respondents who received academic (46.9%) or continuing training (23%) on inclusive PE, 33.6% reported having taken training offered by the school or school board and 25.5% carried out self-training or personal research.

3.2. Participation and Integration of Students with Functional Limitation in PE Classes

Most respondents who taught children with functional limitations during the past five years reported that children with functional limitations participated in the same activities as other students (79.5%). The potential reasons for excluding these students were mainly

related to the child's contraindications (e.g., heart failure, and chronic respiratory failure) (49.7%), the lack of human (4.7%) and physical (4%) resources, the child's inability to move around (4.7%) and the lack of knowledge about how to adapt the activity without compromising the progress of the other students (3.4%).

Fifty-eight respondents (39.4%) said that they felt little or not at all informed or equipped to include children with functional limitations in PE. Concerning respondents feeling inadequately informed and equipped, 38.9% of practitioners in regular and special education classes (23 respondents out of 59) expressed this sentiment. This feeling was also reported by 66.7% of respondents with less than one year of experience in PE (6 out of 9) as well as 36.3% of those with over 10 years of experience (33 out of 91). In the context of inclusive PE, 55.2% of respondents with less than one year of experience (16 out of 29) and 41.9% of those with more than 10 years of experience (13 out of 31) shared similar concerns. Additionally, 60% of respondents with a master's degree (3 out of 5) and 36.5% of those with a bachelor's degree in PE (42 out of 115) felt insufficiently equipped or informed. Notably, only 15 respondents had received university training in adapted physical activity. However, 85.8% respondents felt comfortable or very comfortable applying their knowledge to include children with functional limitations in PE activities, and 80.1% respondents were satisfied with the adaptations they offered in their PE classes.

From the practitioners' perspective, when offered adapted PE, children with functional limitations may choose to not participate for the following reasons: lack of self-confidence (36.9%), rejection of the activity or refusal to participate (28.9%), anxiety (24.2%), multiple questioning such as hesitation (19.5%), self-isolation from other students (18.1%), or deviant behavior (16.1%).

3.3. Educators' Knowledge of Inclusive PE

3.3.1. Teaching Strategies

A variety of teaching activities were used in PE classes, including direct instruction (e.g., lecture courses, demonstrations, explicit teaching) (89.3%), experiential learning activities (e.g., gym and outdoor activities, role-playing, excursions) (67.1%) and peer (team) work (65.1%). The most used teaching strategies for children with functional limitations were concise and precise verbal instructions (89.9%), followed by demonstrations (89.3%) and physical rehearsals either by segmenting the task (71.8%) or by simplifying the task (71.1%).

Activities with a low level of complexity (68.5%), PA in the form of a course consisting of motor tasks (59.7%) and individual PA (e.g., natation, athletics) (58.4%) were preferred for children with functional limitations. Ideas for PA mainly came from websites (83.2%), discussion among colleagues (81.2%), the personal experiences of PE educators (77.9%) or reference books (60.4%).

3.3.2. Additional Training

To better prepare PA for groups including children with functional limitations, respondents mentioned requiring four types of information or resources: (1) information related to the diagnosis and the child's state of health (59.7%) and in particular, the indications and contraindications related to their limitations (67.1%), (2) more appropriate material resources (52.3%), (3) human resources during PE sessions, like a specialized educator (51%), and (4) training resources for inclusive PE (63.8%).

In addition, 128 of the respondents (85.9%) would be interested in participating in inclusive PE training, especially if these trainings were in the form of virtual video vignettes (61.7%), online awareness webinars (59.7%), or digital materials kits (57.7%). Among the 28 respondents who had never received university or continuing education in adapted physical activity, 24 respondents were interested in participating in training. Finally, respondents identified different tools that could facilitate the implementation of inclusive PA: examples of games or workshops (45.6%), a directory of existing online resources (12.8%) and digital activity sheets (15.4%).

4. Discussion

As an important step towards facilitating the inclusion of children with functional limitations in PE, our survey identified the facilitators and barriers of PE educators in implementing inclusive PE across the province of Quebec (Table 4). Although children with functional limitations tends to engage in PA less frequently than their typically developing children [6,7], respondents noted a positive participation of children with functional limitations in their PE classes. Nevertheless, even in an environment that encourages inclusive PE for children with functional limitations, the respondents expressed a desire to enhance inclusivity further. This could be achieved through better resources, better knowledge of the child's needs, adapted equipment and training programs, and ensuring the inclusion of all children, regardless of their functional limitations.

Table 4. Identified facilitators and barriers in PE teachers and school daycare educators in the Province of Quebec (inspired by the barriers and facilitators identified by Haegele et al., 2018 [34]).

Categories	Facilitators	Barriers
Environment	• Facilities (Gym accessibility)	• Improper facilities (inaccessible gym)
Equipment	• Adapted equipment accessibility (to know the organizations offering rental of adapted equipment)	• Lack of adapted equipment (lack of material resources)
Personal	• Student's attitudes (positive interest in participating)	• Student's abilities (contraindication to physical activity, lack of physical abilities) • Student's attitudes (refusal to participate) • Student's behavior (self-isolation, anxiety, deviant behavior)
Program	• Personal support (presence of a human resource during PE classes) • Funding • Time (appropriate schedule to plan and organize PE classes)	• Lack of funding (cost) • Scheduling issues (lack of time)
Educator	• University and continuing education in adapted physique activity and inclusive PE • Teacher knowledge (knowledge of disabilities)	• Educator knowledge (educator training, lack of knowledge) • Educator attitude (fear of injury in children)

The level of knowledge and training among PE educators plays a crucial role in the inclusion of children with functional limitations in PE classes [34]. In agreement with previous literature, our research emphasized that training often serves as a key facilitator to promote inclusive PE. In Quebec, PE teachers are required to have a bachelor's degree in PE and health, a program accessible at seven universities across the province [35–41]. Most participants in our study hold this degree, suggesting they should have the necessary expertise to integrate children with functional limitations into PE classes. According to the curriculum requirements, PE teachers are expected to adjust their teaching methods to cater to students with learning challenges or disabilities [42]. On the other hand, daycare educators receive their training in professional training centers, obtaining a certificate of professional studies in daycare. The program aims to equip individuals with the skills to organize, prepare, and lead diverse activities that foster the overall development and well-being of preschool and secondary education students, aligning with the school's educational goals [43]. Although the program includes a course on intervention with children facing various challenges, there was no mention of specific training in adapting PE.

Despite these qualifications, a considerable number of PE educators feel inadequately prepared to effectively include children with functional limitation. This echoes a previous study, in China, in which PE teachers expressed concern about the difficulty they felt in integrating children with functional limitations into their classrooms [44]. This inadequacy could be related to a lack of specialized training in adapting physical activities. Some participants admitted to not having received comprehensive education in this area, despite the curriculum offering courses related to both adapted physical activity and adapted PE as well as introduction courses to various limitations. Additionally, only a small number of daycare educators and a limited proportion of PE teachers had participated in continuing education. Continuous professional development is crucial for PE educators, providing them with the knowledge and experience necessary to include students with functional limitations [22,45–47]. Despite the similarities between inclusive PE teachers and general PE teachers, there have been unique experiences noted during socialization [48,49]. Socialization theory can improve practice, especially when physical educators have undergone a complete acculturation phase thanks to observational learning from their physical education teacher during their training [50]. However, inclusive PE educators do not always receive an inclusive PE experience during their education, which may limit their socialization [48,49]. This may explain why participants in our sample felt under-equipped or under-informed. Indeed, interactions with students with functional limitations may be a powerful agent of socialization [48,51], such that the absence of inclusive PE experience hinders educators from developing a complete understanding of the requirements to be physical educator for students with disabilities. This may lead to challenges in applying theoretical knowledge in practical situations [52]. One way to overcome these challenges may be to promote internships in schools during physical educator training. Indeed, in a recent study, educators were interviewed before and after a school internship to determine if it had an impact on their believers regarding inclusive physical education [53]. Before the course, participants expressed that students in specialized schools were expected to follow the same educational activities as students in regular schools. After the internship, they highlighted that the PE program should be adapted to the needs and abilities of each student. This study, therefore, highlighted the potential influence of school internships on the beliefs of future educators. The authors concluded that such internships may serve as an important educational tool to enhance confidence, skills and empathy among PE teachers in order to provide inclusive PE [54,55].

Despite lacking formal or additional training in adapted PE, some PE educators expressed confidence in their ability to include children with functional limitations in PE, possibly due to their professional experience. Studies have shown that less experienced teachers (novices) tend to have more inclusive attitudes than more experienced teachers [56–59]. The results of our study, however, do not establish this difference between novices and experienced educators. Novice educators often rely on their training internships, while experienced educators draw from their work experience. A study conducted in 2004 found a relationship between educators' prior experiences, knowledge about functional limitations and their attitudes towards inclusion. Positive attitudes toward inclusion are fostered by understanding disabilities and having hands-on experience with children with functional limitations [60]. However, it's noteworthy that some participants with extensive experience did not feel adequately equipped or informed to include children with functional limitations. For these individuals, the professional experience hypothesis may not be suitable. Indeed, a recent literature review emphasized that experiences alone were not enough to promote inclusive physical education. Instead, various interconnected contextual variables, such as background factors (e.g., teacher's personal attributes and school attributes), attitude, and self-efficacy, play a crucial role in positively influencing inclusion efforts [61]. Moreover, the children's self-confidence levels could either act as facilitators or barriers to inclusive PE. Moreover, it is plausible that existing or continuing training does not provide PE educators with the tools to effectively support children with low self-confidence.

In addition to PE teacher training and professional experiences, other educational strategies should be considered to promote the inclusion of children with functional limitations in PE. In a recent study aiming to describe PE and inclusive PE teacher's perspectives on how they attempt to have inclusive practice, participants highlighted the importance of working collaboratively to foster innovative educational approaches [51,62] and developing inclusive PE experiences in which children with functional limitations are likely to succeed [63].

Moreover, financial or material resources, along with personal experiences, are two of the multiple factors contributing to inclusive PE [34]. The availability of infrastructure resources can account for variances among participants in the inclusion of children with functional limitations. Access to appropriate infrastructure plays a crucial role in facilitating physical activity [34]. In this study, participants generally involved children with functional limitations in the same activities as their peers. Some PE educators had the advantage of the gymnasium accessibility for children with functional limitations within their schools, while others faced barriers due to the unavailability of adapted gymnasiums. The geographical location of schools also influences infrastructure accessibility. The province of Quebec is divided into 17 administrative regions, categorized as major urban centers, peripheral regions near the major urban centers, intermediate regions, and remote regions [64]. These regions exhibit socioeconomic disparities, with remotes areas frequently cited as having limited educational resources such as infrastructure and equipment, and potentially having lower education levels [65]. However, our study does not confirm this, as barriers to gymnasium accessibility were proportionally present across all region types. This uniformity could be attributed to the provincial education system's standardized resource allocation within the provincial education system, focusing on the overall inclusion of children with functional limitations in PE rather than identifying specific needs across the province. This approach could account for the diverse range of responses, regardless of educators' backgrounds, training, or experience.

Limitations

There are some limitations that should be considered when interpreting the study findings. Given the number of PE teachers in the province, the sample size was small. One possible reason for this limited sample size was that the questionnaire was sent during the end of the school year and during the summer holiday season. Therefore, the sample may not be generalizable to all PE teachers in Quebec. Unequal representation of all the administrative regions limited our ability to make comparisons between regions. Our recruitment strategy targeted regular public schools, which explains the over-representation of this type of school in the responses. A focus on private schools in a future study could be interesting, as different types of school may have different facilitators and barriers that influence the inclusion of children with functional limitations in PE. Finally, while our results can inform on how PE educators experience and view the inclusion of children with functional limitations in PE, the findings cannot be generalized beyond the province of Quebec to the rest of Canada due to the differences in the provincial school systems.

5. Conclusions

This study identified a range of facilitators and barriers affecting the inclusion of children with functional limitations in PE classes in Quebec schools. The results imply that inclusivity in PE classes for children with functional limitations is influenced by several factors, suggesting a combination of these factors rather than one affecting PE practices. While Quebec's PE educators have a structured system that may benefit several children with functional limitations, it might not be universally applicable. To ensure the inclusion of all types of functional limitations, additional training and hands-on experiences should be provided to all PE educators. Additional research is warranted to explore the effects of integrating tools or training into the curriculum, aiming to enhance the inclusion of all children with functional limitations in PE. However, as this research was developed in

the Quebec context, we hope that stakeholders in the education industry and community health policy development will be interested in the results of this study.

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