Disability and Rehabilitation

ISSN: 0963-8288 (Print) 1464-5165 (Online) Journal homepage: http://www.tandfonline.com/loi/idre20

National approaches to promote sports and physical activity in adults with disabilities: examples from the Netherlands and Canada

Femke Hoekstra, Lynn Roberts, Caroline van Lindert, Kathleen A. Martin Ginis, Lucas H. V. van der Woude & Mary Ann McColl

To cite this article: Femke Hoekstra, Lynn Roberts, Caroline van Lindert, Kathleen A. Martin Ginis, Lucas H. V. van der Woude & Mary Ann McColl (2018): National approaches to promote sports and physical activity in adults with disabilities: examples from the Netherlands and Canada, Disability and Rehabilitation, DOI: 10.1080/09638288.2017.1423402

To link to this article: https://doi.org/10.1080/09638288.2017.1423402

DISABILITY AND REHABILITATION, 2018
https://doi.org/10.1080/09638288.2017.1423402

Taylor & Francis
Taylor & Francis Group

ORIGINAL ARTICLE

National approaches to promote sports and physical activity in adults with disabilities: examples from the Netherlands and Canada

Femke Hoekstra[a,b], Lynn Roberts[c], Caroline van Lindert[d], Kathleen A. Martin Ginis[e], Lucas H. V. van der Woude[a,b] and Mary Ann McColl[c]

[a]Centre for Human Movement Sciences, University of Groningen, University Medical Centre Groningen, Groningen, The Netherlands; [b]Department of Rehabilitation Medicine, Centre for Rehabilitation, University of Groningen, University Medical Centre Groningen, Groningen, The Netherlands; [c]Centre for Health Services and Policy Research, Queen's University, Kingston, Canada; [d]Centre for Research on Sports in Society, Mulier Institute, Utrecht, The Netherlands; [e]School of Health and Exercise Sciences, The University of British Columbia, Kelowna, Canada

ABSTRACT

Purpose: This study described how the Dutch and Canadian governments promote high performance sports, recreational sports, and physical activity (PA) among adults with disabilities on a national level.

Methods: An internet-based study was conducted to identify and select relevant documents and websites containing information about the national approach to promote disability sports and physical activities in the Netherlands and Canada.

Results: Both governments promote high performance sports in similar ways, but use different strategies to promote recreational sports and physical activities. The Dutch approach is characterized by using time-limited programs focusing on enhancement of sports infrastructure and inter-sector collaboration in which municipalities have key roles. The Canadian government promotes recreational sports in disabled populations by supporting programs via bilateral agreements with provinces and territories. Furthermore, the level of integration of disability sports into mainstream sports differs between countries.

Conclusions: The findings of this study may inspire policy makers from different countries to learn from one another's policies in order to optimize national approaches to promote disability sports and PA on all levels.

ARTICLE HISTORY
Received 21 June 2017
Revised 27 December 2017
Accepted 29 December 2017

KEYWORDS
Active lifestyle; adapted sports; people with disabilities; policy; rehabilitation; health promotion

➤ IMPLICATIONS FOR REHABILITATION

- It is recommended for policy makers of national governments to develop and implement policy programs that promote sports and physical activities among people with disabilities because of its potential impact on functioning, participation, quality of life, and health.
- Insight into national approaches to promote sport and physical activities is relevant for rehabilitation practice to understand ongoing opportunities for people with disabilities to stay physically active after rehabilitation through participation in home and/or community-based sport and physical activities.
- It seems worthwhile to integrate activities to promote sport and physical activities in rehabilitation in such a way that it fits with the current governmental approach.
- It is recommended to set up international collaborations to develop and share knowledge about effective and sustainable national approaches to promote sports and physical activities among people with disabilities.

Introduction

People with disabilities are less physically active compared to people without disabilities [1]. Moreover, participation in organized sports activities is lower among people with disabilities. To illustrate, national level data from the Netherlands show that 32% of people with a physical disability participate in sports on a weekly basis compared to 59% of people without a disability [2]. Since the (health) benefits of physical activity (PA)[1] are well-known and widely accepted [3–5], it is important to promote PA in people with disabilities [6]. In the last decades, several countries developed PA policies aimed to increase PA levels in the general population [7,8]. In addition, the importance of developing policies to promote PA was emphasized in the Global Action Plan for the prevention of non-communicable diseases published by the World Health Organization [9]. However, such PA policy approaches are mainly focused on the general population rather than on specific target groups, such as people with disabilities.

Since people with disabilities perceive different barriers to participate in sports and PA compared to people without disabilities [10], a different approach may be needed to successfully promote

CONTACT Femke Hoekstra f.hoekstra@umcg.nl Centre for Human Movement Sciences, University of Groningen, University Medical Centre Groningen, PO Box 196, 9700 AD Groningen, The Netherlands

Supplemental data for this article can be accessed here.

PA in disabled persons on a national level. The use of a nationwide approach initiated by governmental agencies may be effective to increase PA levels in disabled populations. It is, however, unknown what the most effective and successful way is, from a national level, to promote sports and PA among disabled citizens. As with PA and sport promotion in the general population, nationwide approaches to promote PA and sports in persons with disabilities may differ among countries [7,8]. Identification of different approaches might give the opportunity to learn from each other and share "good examples" of national approaches and/or elements of promoting sports and PA among people with disabilities.

The Netherlands and Canada are both developed Western countries that play substantial roles in increasing knowledge about rehabilitation, clinical medicine, and disability sports as illustrated by top positions in different rankings on most-cited countries and research output in these domains [11,12]. In addition, both countries had a top-10 ranking at one of the Paralympic games in the past decade (Winter 2014: 3rd and 8th; Summer 2016: 7th and 14th) suggesting that the circumstances for high performance disability sports are at least moderately good. Lastly, the Convention on the Rights of Persons with Disabilities (CRPD) was ratified by Dutch and Canadian governments indicating that both governments emphasize the importance to promote accessibility of sports and recreation for disabled populations and to create equal opportunities to do so.

Besides these similarities, substantial differences in (governmental) infrastructure can be identified among the Netherlands and Canada. For example, the Netherlands is a small country (33,718 km^2) in Western Europe with nearly 17 million people (population density: 512 per km^2), while Canada covers a huge land mass (nearly 10 million km^2) with more than 33 million people (population density: 3 per km^2). Furthermore, in contrast to the Netherlands, the Canadian national government delegates much of the authority for health, education and welfare to the provinces, including generating tax revenue to support such programs. As a result, governmental approaches to promote sports and PA in people with disabilities may differ among Canada and the Netherlands. The identification of similarities and differences in national approaches gives the opportunity to designate potential benefits from each approach and to further enhance national strategies for sport and PA promotion in people with disabilities. Moreover, these insights provide directions for other countries who want to improve on their promotion of sports and PA to people with disabilities.

Therefore, the aim of this study was twofold: (1) to describe how Dutch and Canadian governments promote high performance sports, recreational sports and PA among adults with disabilities on a national level, and (2) to identify similarities and differences between these governmental approaches.

Methods

Search and classification strategy

Definitions of key terms used in our research are presented in Supplementary Table S1. Web-based research was conducted to identify relevant documents and websites containing information about the Dutch and Canadian approaches to promote high performance and recreational sports and PA among people with disabilities. The search strategy was executed in the period between 1 May 2016 and 29 June 2016. Documents were included only if they contained information about the national approach, and applied to year 2016. If there were earlier versions of the document, only the most recent version was selected. Excluded from consideration in this study were laws or documents about sport and PA in educational settings or for children only. Relevant information and documents were identified and selected following the same procedure in both countries. The five key steps of this procedure are summarized in Figure 1 and further explained in the following section.

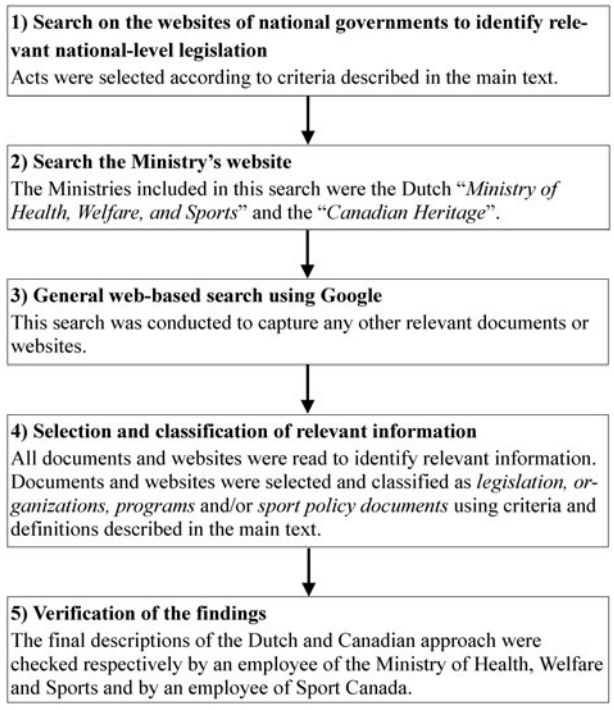

Figure 1. The key steps of the web-based search strategy to identify and select relevant information about the Dutch and Canadian governmental approaches.

1. National-level legislation governing sport and PA and/or disability was identified via **the websites of the two national governments** [13,14].
2. **Websites of the Ministries** responsible for sport and PA [15,16] were searched using the following keywords: PA, exercise, sport, recreational sports, high performance sports, active lifestyle, disabled, people with disabilities, Paralympic, athletics, fitness. Similar keywords were used in Dutch.
3. **A general web-based search** using Google was conducted to capture any other relevant documents or websites.
4. Documents and websites were read to identify relevant information. **Documents and websites were selected and classified** as legislation, organizations, programs, and/or sport policy documents using the following criteria and definitions:
    - *Legislation:* The Act should explicitly refer to "sports and/or PA" or "participation and disability". Excluded are Acts referring to promoting people with disabilities to participate in the labor market.
    - *Organizations:* The organizations should play an important role in promoting sports and PA among people with disabilities at the national level. Governmental or non-governmental organizations must be mentioned on the website of the government or Ministry and/or in the national budget. Government organizations refer to organizations or agencies within the national bureaucracy that oversee or govern programs offered by the national government. Staff of the organization are government employees, and the chief executive of the

organization reports to government. Non-governmental organizations refer to organizations or agencies outside the national bureaucracy. These organizations are included if they are mentioned on the website of the national government/Ministry and if they receive funding from the national government to promote sports and/or PA among people with disabilities.

- *Programs:* These programs are operated by the government to facilitate and/or promote high performance sports, recreational sports and/or PA. The included programs refer explicitly to both "sports and/or PA" and "disability" and are funded by the national government. Programs were classified according to whether they focused on high performance sports, recreational sports and/or PA.
- *Sport policy documents:* This category refers to the most recent versions of written documents that describe the national sport and PA policy. In order to be included, these documents must explicitly refer to "sports and/or PA" and "disability or Paralympics". These documents are published on the website of the national government or Ministry.

5. If there were uncertainties about information published on websites or documents, a person working for the concerning (non-)governmental organization was contacted by phone or e-mail **to verify the information**. The final descriptions of the Dutch and Canadian approach were checked respectively by an employee of Ministry of Health, Welfare and Sports and by an employee of Sport Canada.

Direct content analysis

A direct content analysis [17] was conducted to identify similarities and differences between the Dutch and Canadian approaches. For each group (legislation, organizations, programs, sport policy documents), similarities and differences were described by the first author (FH) and discussed with Canadian coauthors (LR, MMC). Afterwards, a meeting with the two Canadian policy experts (LR, MMC) and the two Dutch policy experts (FH, CvL) was undertaken to discuss the findings and to select the most important similarities and differences. Authors (KMG, LvdW) reflected on the findings.

Results

The Dutch approach

Legislation

In the Netherlands, the Ministry of Health, Welfare and Sport is responsible for the health, PA, and sports policy on a national level, enrolls programs and provides funding for health promotion, including PA promotion. The Netherlands has no statute that specifically addresses sport and PA promotion. The "*Law of the outlines of funding from Ministry of Health, Welfare and Sports*" (1998) mentions that the Ministry of Health, Welfare and Sport can provide grants for activities related to sports or health promotion. This statute does not mention people with disabilities explicitly.

Furthermore, the statute "*Law of societal support*" (2014) is specially focusing on participation in people with disabilities. This statute describes regulations concerning the support that municipalities have to provide to disabled persons with respect to self-reliance, participation, housing and (day)care. It is developed to compensate for additional costs associated with person's disability. Although the statute does not mention sport or PA, municipalities might reimburse sport and exercise devices that contribute to self-reliance or participation of individual level.

Organizations

Figure 2 provides an overview of the national organizations involved in promoting sport and PA among people with disabilities in the Netherlands. As depicted in Figure 2, two national non-governmental organizations, partly funded by the Ministry of Health, Welfare and Sport, are key stakeholders:

- The Dutch Olympic Committee* Dutch Sports Federation (in Dutch: "Nederlands Olympisch Comité * Nederlandse Sport Federatie" or NOC*NSF)
- Knowledge Centre for Sport Netherlands (in Dutch: "Kenniscentrum Sport")

The NOC*NSF is the "umbrella organization of sports in the Netherlands" and promotes participation in sport and PA among Dutch (disabled) population, both on high performance and recreational level. The national sport federations ($N = 74$) who are a member of NOC*NSF, follow an integrated system in which sport federations are responsible for both mainstream and disability sports. To date, seven disability sports (boccia, bocce, goalball, blind soccer, wheelchair rugby, showdown, sledge-hockey) are an exception and administered by Disability Sports Netherlands, which is a national multisport organization and member of NOC*NSF.

The Knowledge Centre for Sport Netherlands has the mission "to increase the impact of sports and PA through knowledge" [18]. The involvement of this organization in the Dutch system ensures that (disability) sports policies of the national government are based on the best available knowledge and evidence.

Programs

Although not officially approved by law, the Dutch government is committed to promote sports and PA and aims "to achieve a sportive society in which there are sufficient and safe opportunities to participate in sports and PA for everybody and in which excellence in sports is stimulated" [19]. To achieve these goals, this Ministry focuses on promoting inter-sector collaboration and knowledge sharing/development and provides funding for several programs and initiatives regarding promotion of high performance sports, recreational sports and PA. To fulfill the goal regarding stimulation of excellence in sport, the following national programs exist to support and facilitate high performance athletes with and without disabilities:

1. "High performance athletes fund"
   This program provides financial support to high performance athletes with a "high performance" status."
2. High performance sports programs
   "The Ministry of Health, Welfare and Sports provides funding to NOC*NSF to execute, in collaboration with sport federations, several high performance sports programs promoting and supporting high performance (disabled) athletes. Examples include the Centers for Athletes and Education and the National Athletes Centers.
3. "Sports events" (2015)
   This program provides financial support for the organization of (inter)national sport events including sport events for people with disabilities. The government highlights the importance of organizing these sport events, because of its potential economic benefits and beneficial effects on recreational sports.

To fulfill the goal with regard to creating facilities for recreational sports and PA, the Ministry provides funding for the

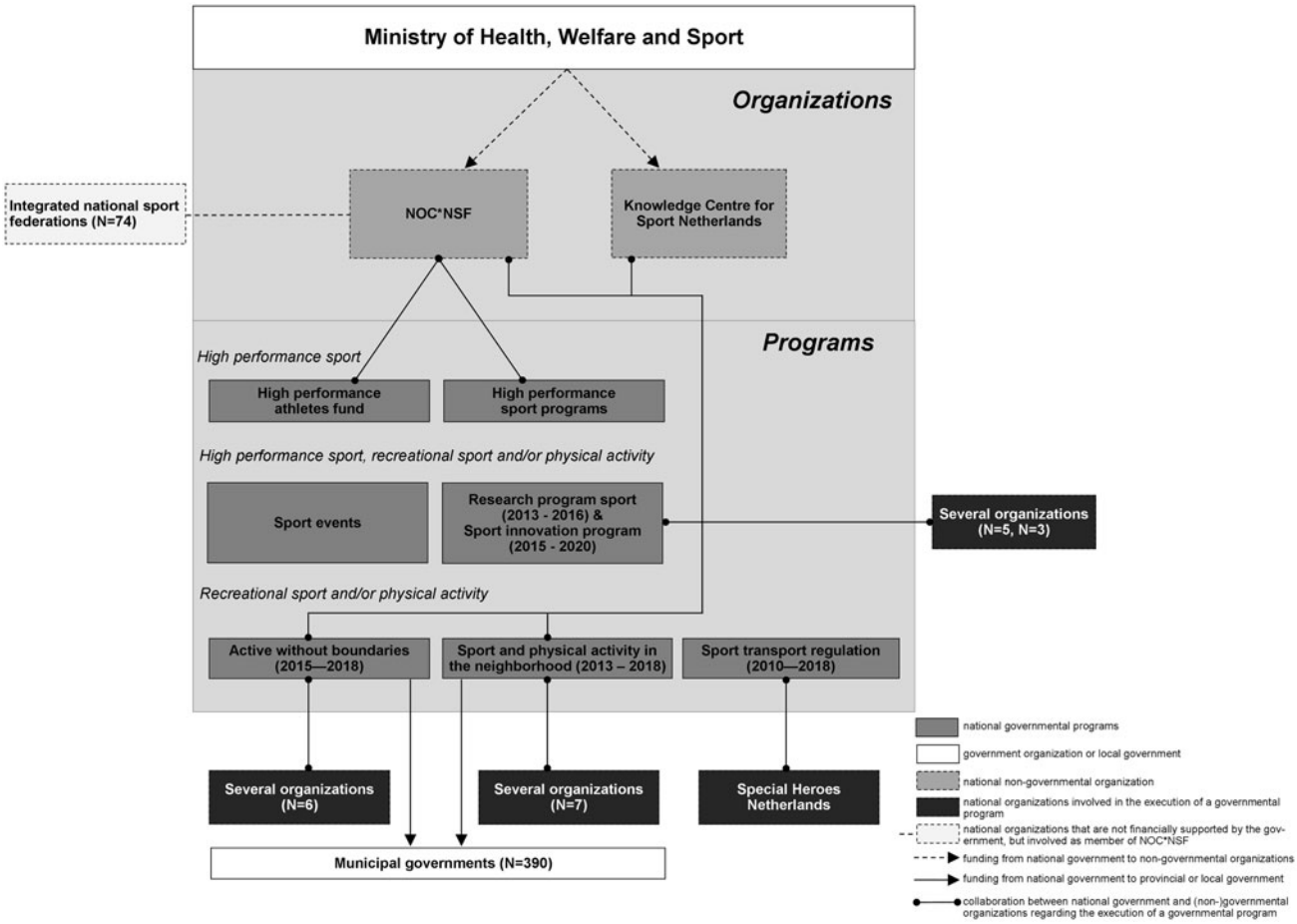

Figure 2. National programs and organizations involved in promoting high performance sports, recreational sports, and physical activity among people with disabilities in the Netherlands.

development and execution of national time-limited programs. The programs that explicitly focus on people with disabilities are:

4. "Active without boundaries" (2015–2018)
   This program is launched by the Ministry of Health, Welfare and Sports in collaboration with several partners (see Figure 2) and currently used as the national policy for disability sports [20,21]. The main goal of the program is to create better sports and exercise facilities in the community and making sports and PA available and accessible for all people with disabilities. Special attention is given to create sports and PA that are in line with needs and wishes of the target group ("match between demand and supply"). The program stimulates inter-sectoral collaboration by setting up regional partnerships on sports and disability in which different organizations (e.g., primary healthcare providers, rehabilitation centers, schools), sport and PA providers and local government agencies (e.g., municipalities, provinces) are working together.
5. "Sport and PA in the neighborhood" (2012–2018)
   This program was developed to make it easier for people to adopt an active and healthy lifestyle by providing sports facilities close to home or making PA easy to combine with work or school life. The following two key instruments are used:
   - Neighbourhood sports motivators
     These motivators (i.e., coaches) are appointed by municipalities to motivate people of all ages, including people with disabilities, to participate in sports and PA. The motivators are also connectors between primary care, sports, and PA. Municipal governments can receive subsidy from the Ministry to appoint these motivators, but only under co-financing preconditions.
   - Sport Impulse grants
     Sports clubs, fitness centers, or other sports providers can provide funding to set up local PA projects for inactive or low-participation subgroups, including people with disabilities [22], via the Sport Impulse grants. To apply for the grant, a collaboration between sport provider and local neighborhood partner (e.g., schools, healthcare providers, business community) is required and the use of "acknowledged interventions" (i.e., evidence-informed interventions) [23].
6. "Sports transport regulation" (2010–2018)
   Via this program, individuals with severe (physical) disability, who participate in team sports affiliated with a sport federation, can apply for a reimbursement for travel expenses incurred during travel to the sport facilities.

Furthermore, the Ministry invests in (knowledge) innovation and knowledge sharing regarding sports and PA by the following programs:

7. "Research program sport" (2013–2016) and "Sport innovation program" (2015–2020)
   The Research program sport aims to strengthen the scientific research on (high performance) sports and PA and to improve the transfer from science to sport practice and educational

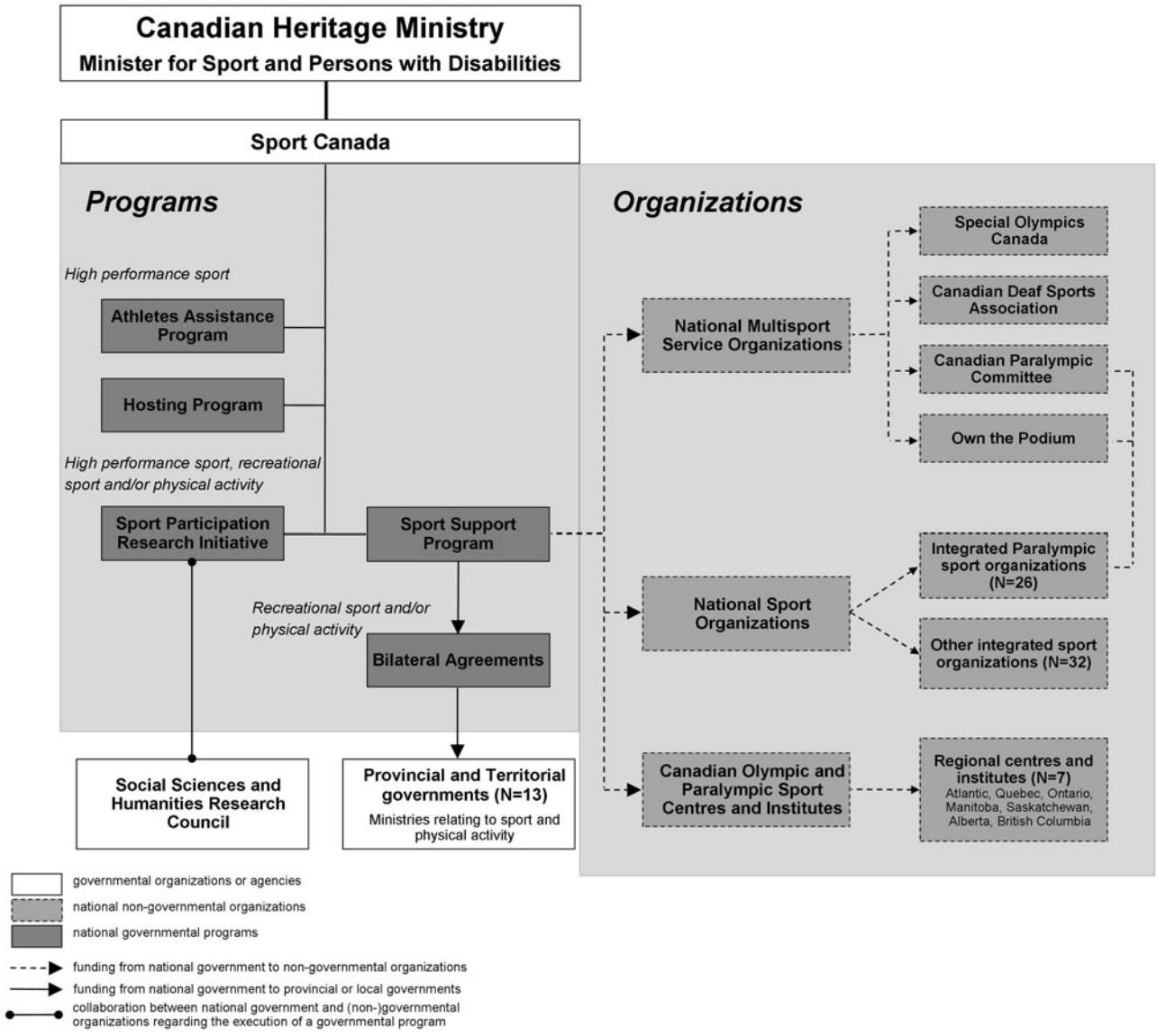

Figure 3. National programs and organizations involved in promoting high performance sports, recreational sports, and physical activity among people with disabilities in Canada.

programs. The Minister stimulates the involvement of the industry in the execution of these research programs.

Sport policy documents

The Dutch Minister of Health, Welfare and Sports emphasizes the importance of disability sports and PA in several government documents and letters to the Parliament. Supplementary Table S2 presents an overview of the selected documents.

The Canadian approach

Legislation

Policy governing sport in Canada is administered by the Canadian Heritage Ministry and falls under the responsibility of the Minister of Sport and Persons with Disabilities. Two statutes specifically address sport and PA:

- the *National Sports of Canada Act* (1994) designates hockey as the official winter sport and lacrosse as the official summer sport of Canada;
- the *PA and Sport Act* (2003) sets out government objectives for sport and PA in Canada; specifically to increase participation and support excellence in sport, and to build capacity in the Canadian sport system.

Neither statute mentions people with disabilities explicitly, but the latter empowers the Minister to take measures to promote PA among under-represented groups, of which people with disabilities are presumably included.

Canada does not have a single disability law at the national level, but rather has several levels of rights protections and numerous other statutes that deal with disability related issues across Ministries.

Organizations

Sport Canada is a branch of the Canadian Heritage Ministry, with a mandate to advance the sport objectives outlined in the PA and Sport Act – to promote participation, excellence and capacity building. Sport Canada fulfills its mission by administering programs itself, by transferring funds to the provinces for sports participation, and by supporting national organizations dedicated to sports. Figure 3 depicts an overview of national governmental and non-governmental organizations involved in promoting sports and PA among disabled Canadians.

Programs

The Government of Canada seeks to achieve two objectives with its sports policy: (a) to increase participation in the practice of sport and support the pursuit of excellence in sport; and (b) to build capacity in the Canadian sport system. Sport Canada administers a number of programs in order to fulfill this mandate.

1. "Sport Support Program"
   This program provides resources to athletes, coaches, and sport facilities to enhance the potential for world-class performance by Canadian athletes, and to promote Canadian interests, values and ethics regarding sport at home and abroad. The Sport Support Program provides funding to approximately 88 organizations.
   - There are 58 National Sport Associations, each governing a specific sport. Twenty-six of these associations relate to sports that are performed at the Paralympic level. Sport Canada has a policy to support only one organization per sport, flowing resources to a single organization that takes an integrated approach to its sport. There are four exceptions (the Canadian Wheelchair Basketball, the Wheelchair Rugby Association, the Canadian Cerebral Palsy Sports Association [for boccia], and the Canadian Blind Sports Association [for goalball]), where no non-disabled counterpart exists at the Olympic level. The remaining 32 National Sport Associations serve disabled as well as non-disabled athletes, although they do not relate to sports that are part of the Paralympic Games.
   - The Sport Support Program also provides funding to 23 national multi-sport associations. These include four organizations with an explicit mandate for disability sports (the Canadian Paralympic Committee, Special Olympics Canada, the Canadian Deaf Sports Association, and Own the Podium).
   - Finally, the Sport Support Program supports seven regional Olympic and Paralympic Sport Centers/Institutes across the country. All of these, by virtue of receiving federal government funding, must address the needs of disabled as well as non-disabled athletes, and must not discriminate against persons with disabilities.

The Sport Support Program also administers Bilateral Agreements with the 13 provinces and territories to promote sports participation. The bilateral agreements are cost-sharing programs with the provinces and territories, with the aim of: (1) introducing young people to sports, and (2) increasing opportunities for participation in sports by under-represented groups, including people with disabilities. Consistent with its relationship to other service sectors (such as health, education and welfare), the national government delegates operational responsibility for most population-level sport programs to the provinces. Each province must match the federal contribution, and is free to express provincial and regional priorities in fulfilling the two objectives.

2. "Athlete Assistance Program"
   This program provides direct financial assistance (living and training expenses) to qualified high-performance athletes. Funding for tuition and special needs for disabled athletes may be included in this support.
3. "Hosting Program"
   This program supports the hosting and organization of international sporting events held in Canada (including disability sports events), and the Canada Games.
4. "Sport Canada Research Initiative"
   The Sport Canada Research Initiative is a collaborative program with the Social Sciences and Humanities Research Council, to foster research regarding sport participation and performance, explore the benefits of sport, and address needs and issues in sport in Canada.

Government sport policy documents

In addition to administering the programs outlined above, Sport Canada has a duty to communicate with Canadians about government policy regarding sports and PA. Since 2000, a number of influential documents have been produced that express the government's priorities and commitments to the area of sport and recreation. The concept of "physical literacy" is prominent in these reports, referring to knowledge, skills and attitudes around sports and PA (see Supplementary Table S2).

Comparison between both approaches

Table 1 presents the identified similarities and differences between the Dutch and Canadian approach.

Discussion

This study showed that the Dutch and Canadian governments share similarities in the way they stimulate and invest in high performance disability sports. Moreover, major differences were identified between both countries in the way recreational sports and PA are promoted among people with disabilities.

Similarities

The Netherlands and Canada are similar in that both countries invest in high performance disability sports not only to achieve high rankings in world championships (e.g., Paralympic games), but also to inspire participation in recreational sports among people with disabilities. This strategy is in line with the "double pyramid theory" stating that successes in high performance sports lead to increased sports participation on recreational level, and vice versa [24]. Although scientific evidence supporting these associations in disability sports is limited, a descriptive small sample-sized study conducted in the Netherlands confirmed that such a two-way association was present in disability sports, although it was different between men and women and between sports (team vs individual) [25]. To illustrate, the authors found a significant correlation between mainstream and high performance disability sport participation among team sports, but not among individual sports.

Differences

Some major differences were also identified in the way sports are supported by the Dutch and Canadian governments. The first difference concerns *national legislation*. Canada has a specific statute promoting sports and PA among Canadians, including under-represented groups. Legislation is one of the strongest policy instruments, and can be a major advantage in terms of promoting a secure and stable sport culture and infrastructure. In the Netherlands, the debate to develop a "Sports act" has been conducted several times [26,27]. In 2004, the State Secretary of the Minister of Health, Welfare and Sports declined the development of a "Sports act" on national level, because there was insufficient necessity to do so [27]. One of the reasons was that societal issues related to sports can be solved by using other existing laws and regulations, both on national and European level. This argument

Table 1. Similarities and differences between the Dutch and Canadian approach.

	Similarities	Differences
Legislation		• In contrast to NL, Canada has a sport and PA act. • Canada has a ministry dedicated to sport and disability, while NL has a Ministry of Health, Welfare and Sports.
Organizations *Government organizations*		• Canada has an organization within the bureaucracy to govern the national sport system, whereas the Dutch governing body is non-governmental.
Non-governmental organizations	• Both countries have several national sport federations governing both mainstream sports and disability sports.	• The view on the extent to which disability sports should be integrated into mainstream sports differs between countries. • In contrast to Canada, the Dutch government does not financially support disability-specific sport organizations (e.g., Special Olympics, the Deaf Sport Federations).
Programs *HP sports*	• Both governments support HP athletes with disabilities via several on-going programs (e.g., athletes' salary, sporting facilities). • Support and facilities for Olympic athletes are the same for Paralympic athletes. • Both governments provide funding for organization of (inter)national sport events with the potential benefits on recreational sports as one of the main reasons.	• The Dutch national government outsources the development and execution of HP sport programs to a non-governmental organization (NOC*NSF).
Recreational sports and PA	• Both governments provide funding to local governments for sports and PA promotion among disabled populations (i.e., decentralized approach). • Both governments establish standards and commitments to the development of sport and recreational opportunities for people with disabilities.	• In NL, the municipalities are assigned with major responsibilities regarding PA promotion, while in Canada these responsibilities are assigned to the provincial and territorial governments. • In contrast to the Canadian bilateral agreements, the Dutch national programs are time-limited. • While the Canadian government aims to increase PA levels among citizens, the Dutch government focuses more on improving the sport infrastructure. • The Canadian bilateral agreements are broad-formulated. The Dutch programs have a specific focus on improving inter-sectoral collaboration and knowledge sharing/development. • In contrast to Canada, the Dutch government provides funding to individuals with disabilities participating in teams sports at recreational level.
HP sports, recreational sports and PA	• Both governments invest in research and innovation projects about (disability) sports and PA.	
Sport policy documents	• Both governments are committed to promote and support sports and PA among disabled populations • National governments declare an emphasis on the importance of sport for national identity • Both national ministries aim to achieve a high-ranking on Paralympic games. • Both governments aim to use best available evidence as basis for their national approaches.	• Reports of the Canadian government about the role of sports and PA tend to explicitly translate general population guidelines specifically for application with disabled populations. • The Canadian system has a "Sport Funding Accountability Framework" to ensure responsible spending and outcome effectiveness. • The Canadian Ministry has specific targets on sport participation among Canadian population. • The Dutch Ministry developed their disability sports policies based on previous monitoring and evaluation reports.

HP: high performance; PA: physical activity; NL: the Netherlands.

was also in line with a general wish of the Dutch Ministry to limit the number of regulations and administrative burden in the sports sector [28,29].

The second difference concerns the *national governing organizations* in the two countries. In Canada, sport and PA is overseen by a branch of government (Sport Canada, within the Heritage Ministry). In the Netherlands, the oversight body is a non-governmental organization (NOC*NSF). The Canadian system is more directly accountable to government, and thus a more direct reflection of government priorities. The Dutch system, by contrast, operates at one step removed from government, and might be thus more free to make decisions in response to the authority of its own governing body.

Another difference pertains to the relationship of the national government to the many *non-governmental organizations* that operate the national sport system. In Canada, approximately 88 organizations have a direct relationship with the government through transfer payments from the Sport Support Program within Sport Canada. These funding arrangements are typically on-going and relatively stable.

In the Netherlands, the Ministry of Health, Welfare and Sports decided in 2003 to limit the number of subsidies to non-governmental organizations [30,31], and instead to fund time-limited national sport and PA projects. The idea is that such time-limited projects can more directly reflect the current governmental objectives. This system is arguably a more efficient and cost-effective way of meeting objectives and targets.

A result of such an "Impulse policy" is that the Dutch system is very dynamic making it less predictable and/or uncertain for the field. A major challenge for investing in time-limited projects is the continuation of the program after the funding period. A "good example" of a national evidence-informed program that received an "impulse grant" from the Dutch government for nationwide implementation and showed successful continuation after program period, is the program "Rehabilitation, Sports and Exercise" [32,33]. This program is developed to encourage people with disabilities to participate in sports and PA during and after their rehabilitation treatment. On the other hand, the Canadian system is more stable and transparent about its governmental spending.

The Dutch and Canadian approaches also differ in the way governments promote recreational sports and PA among disabled populations. In the Netherlands, major responsibilities for recreational sports and PA are assigned to municipal governments via time-limited governmental programs. In Canada, the national government transfers funds to the provinces and territories through Bilateral Agreements, to support sport programing in line with provincial priorities and in collaboration with other service sectors. Typically, municipal governments in Western countries play important roles in creating accessible sports and PA infrastructure [34–36]. Decentralization is assumed to be an effective and efficient means of administering sport programing, because it is "closer to the citizen" [37]. In a small country like the Netherlands, it is feasible for the national government to relate directly to municipal governments. In recent decades, the Dutch national government has delegated responsibility to the municipal governments for sports and PA among disabled populations. In a large and diverse country like Canada, however, another layer of government exists between federal and municipal authorities – specifically, the provincial and territorial governments. Jurisdiction for recreational sports programing occurs at the provincial level, and municipalities are responsible to their respective provincial or territorial authorities. In both cases, municipal governments receive financial support to promote PA among disabled populations, and support sport and PA for citizens with disabilities according to local priorities.

Another difference between the Dutch and Canadian systems is the extent of national government participation in *inter-sectoral collaboration* in sport. Between 2008 and 2015, the Dutch Ministry of Health Welfare and Sport provided funding to implement programs in three different settings – specialized schools, healthcare settings and rehabilitation centers – in order to reach children with disabilities, people with intellectual disabilities and people with physical disabilities. Based on the experiences with these programs and information about the actual PA levels of Dutch citizens with disabilities, a national report, published in 2013 in commission of the Ministry, has recommended to strengthen the disability sport infrastructure by improving local collaboration [38]. As a result of this report, the current program "Active without boundaries" was launched. This illustrates how the Dutch government tries to develop their policies based on actual knowledge and previous experiences. In line with other European countries, improving sport infrastructure, accessible facilities and activities, and educated and trained staff, have been mentioned as key challenges for disability sport [39,40].

In Canada, the national government would not typically be involved in collaborations of this nature, because service sectors, like health, education and recreation, are all governed at the provincial/territorial level. Indeed there is evidence from Canadian provinces of this type of targeted programing for disability sport, but the national government is not involved in any direct way.

Perhaps the main difference between the two countries is the extent to which they view disability sports as benefitting from being integrated with mainstream sport, vs. benefitting from having its own dedicated focus. In the Netherlands, disabled and non-disabled high performance sport is governed by one organization – the NOC*NSF. In Canada, disability and mainstream sports are governed by separate organizations – the Canadian Paralympic Committee and the Canadian Olympic Committee. Furthermore, the Canadian government tends to publish reports about sports and PA for general population, and then to publish a special report interpreting the policy as it relates to athletes with disabilities. Also, in Canada, there are several disability-specific sport organizations that continue to exist and receive federal funding, in recognition of a historical relationship with the federal government, such as the Canadian Wheelchair Basketball Association.

Like other Western countries, Canada and the Netherlands embrace a social model ideology about disability and an integrated sports system. In the last decades, both countries have changed from a focus on the individual to a focus on society, and the extent to which it erects barriers or provides support to disabled citizens [41]. For both countries, changes in the sport system were necessary to achieve such an "inclusive society". In the Netherlands, the national government launched several programs to increase sport and PA levels in people with disabilities, provided money to integrate disability sports into mainstream sports and started national surveys to monitor changes in disability sport infrastructure and PA levels in disabled populations. In Canada too, significant movement has taken place to integrate single sport and multi-sport organizations and facilities.

And yet, the debate persists about the optimal level of integration to successfully promote high performance and recreational sports among disabled populations. Some authors advocate for a full integrated sport system both on high performance and recreational level, because it gives disabled athletes access to the same high-quality facilities, coaches and resources available to non-disabled athletes [41,42]. Integration of disability sports is also shown to have positive effects on sport participation levels among certain groups of disabled populations [43]. On the other hand, does the fully integrated system provide disabled athletes with what they need to compete at their optimum level? A recent systematic review on barriers and facilitators to PA among persons with disabilities [10] found that a lack of knowledge and skills of staff/professionals was a frequent barrier for successfully promoting PA in this population. Disability-specific organizations might play a role in overcoming such barriers.

The transition towards an "inclusive society" is not easy, because its success depends on both individual (i.e., view of life, personality) and societal factors (e.g., culture, accessibility) [44]. As illustrated by the Canadian and Dutch systems, a transition towards an "integrated sports system" takes time. Future studies are necessary to gain insight into the most successful and effective way to integrate disability sports into mainstream sports.

Supplementary Table S3 summarizes the key differences that we found between the Dutch and Canadian approach, including possible advantages and disadvantages. Our findings suggest that most differences can be explained by differences in culture, political system, and infrastructure between the countries. In other

words, the Dutch approach seems to fit the best with a small-sized country and European culture, while the Canadian approach seems to fit the best with a large-sized country and North-American culture.

Limitations and strengths

Some limitations of our study need to be addressed. First, we only focused on national governmental approaches to promote sports and PA among people with disabilities and excluded approaches initiated outside the bureaucracy. Since there are many other national non-governmental initiatives promoting disability sports and PA, the results of this study may not give a complete overview of all national initiatives. On the other hand, by focusing only on governmental approaches we were able to make a more straightforward comparison between the Dutch and Canadian approach.

Second, a web-based research strategy was used to select relevant documents and websites. Since we only selected documents published on governmental websites, it is possible that governmental websites were not up-to-date and that we missed some relevant information. However, to minimize the risk of missing relevant information, we verified uncertainties about documents or websites by persons working for the concerning (non-)governmental organization. In addition, the result-sections of the Dutch and Canadian approach were checked by governmental employees.

Third, we excluded initiatives focusing only on sport and PA promotion among children with disabilities. As a result, we were not able to present the complete national approach covering all disabled populations. To further optimize national PA policy among all disabled populations, we recommend to conduct future research on the identification of cross-country differences in national approaches to promote PA among children with disabilities. Similarly, we excluded initiatives of local governments (provinces/territories, municipalities). Since changes should be made at the local level, we strongly recommend to replicate our study but with focusing on initiatives of local governments, both between and within countries.

Besides these limitations, our study has several strengths. To our knowledge, this study is the first that described two up-to-date examples of national approaches to promote sports and PA among disabled populations, both at high performance and recreational level. We made a cross-country comparison by using similar internet-based search strategies for selecting relevant information about both countries. This study showed that by identifying differences and similarities between both approaches, good examples can be shared that may inspire other countries to pay (more) attention to persons with disabilities within their sports and PA policies. We hope therefore that this study may also inspire other researchers to share good examples of ways to successfully promote sports and PA among people with disabilities at a national level.

Future directions

Future studies are required to investigate and understand successful and sustainable ways to promote sports and PA among disabled populations from a national level. The Para-SPLISS project is a promising example of an international collaboration aiming to evaluate sport policies on Paralympic level by developing a conceptual model including both policy and contextual factors [45,46]. Future studies are needed to expand and intensify such international collaborations in order to develop and share knowledge about effective national approaches to promote disability sports and PA on a recreational level. Developing a model or framework, such as Para-SPLISS, to identify and explore cross-country differences in recreational sports and PA levels among people with disabilities might help to understand which national approaches are successful under which circumstances. Future studies should therefore focus on developing (standardized) methods to collect data in different countries about PA policies including contextual factors and PA levels among people with disabilities.

Conclusions

The Dutch and Canadian governments promote high performance disability sports via several national programs. Both countries use different approaches to promote recreational sports and PA among people with disabilities which correspond with their culture, political system and infrastructure. The level of integration of disability sports into mainstream sports differs between countries. This study may inspire policy makers from different countries to learn from one another's policies in order to optimize national approaches to promote disabilities sports and PA on all levels. Future international collaborations are necessary to develop and share knowledge about effective and sustainable national approaches to promote recreational sports and PA among people with disabilities.

Note

1. This paper focused on physical activities at light, moderate or vigorous intensity (see Supplementary Table S1 for a complete definition based on Caspersen et al. [47]).

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This study was conducted as part of a nationwide study on physical activity promotion among people with disability which was funded by the Dutch Ministry of Health, Welfare and Sport (grant number 319758). Additional funding for this study was provided from the Association for Canada Studies in the Netherlands, Stichting Nicolaas Mulerius Fonds, and the Graduate School of Medical Sciences of the University.

References

[1] McGuire LC, Strine TW, Okoro CA, et al. Healthy lifestyle behaviors among older U.S. adults with and without disabilities, behavioral risk factor surveillance system, 2003. Prev Chronic Dis. 2007;4:A09.

[2] Volksgezondheidenzorg.info. CBS in cooperation with RIVM; 2016; [cited 2017 Dec 2]. Available from: https://www.volksgezondheidenzorg.info/onderwerp/sport-en-bewegen/cijfers-context/huidige-situatie#node-sportdeelname-wekelijks

[3] Bize R, Johnson JA, Plotnikoff RC. Physical activity level and health-related quality of life in the general adult population: a systematic review. Prev Med. 2007;45:401–415.

[4] Li J, Siegrist J. Physical activity and risk of cardiovascular disease—a meta-analysis of prospective cohort studies. Int J Environ Res Public Health. 2012;9:391–407.

[5] Wannamethee SG, Shaper AG. Physical activity in the prevention of cardiovascular disease: an epidemiological perspective. Sports Med. 2001;31:101–114.

[6] Rimmer JH, Vanderbom KA, Bandini LG, et al. GRAIDs: a framework for closing the gap in the availability of health promotion programs and interventions for people with disabilities. Implement Sci. 2014;9:100.

[7] Bull F, Milton K, Kahlmeier S, et al. Turning the tide: national policy approaches to increasing physical activity in seven European countries. Br J Sports Med. 2015;49:749–756.
[8] Daugbjerg SB, Kahlmeier S, Racioppi F, et al. Promotion of physical activity in the European region: content analysis of 27 national policy documents. J Phys Act Health. 2009;6:805–817.
[9] World Health Organization. Global action plan 2013–2020 for the prevention and control of noncommunicable diseases. Geneva: World Health Organization; 2013.
[10] Martin Ginis KA, Ma JK, Latimer-Cheung AE, et al. A systematic review of review articles addressing factors related to physical activity participation among children and adults with physical disabilities. Health Psychol Rev. 2016; 10:478–494.
[11] Coppen A, Bailey J. 20 most-cited countries in clinical medicine ranked by population size. Lancet. 2004;363:250.
[12] Stam HJ. Research in physical and rehabilitation medicine in Europe: how are we doing? J Rehabil Med. 2006;38:1–2.
[13] Government of Canada; 2016; [cited 2016 Jul 06]. Available from: http://laws-lois.justice.gc.ca/eng/acts/
[14] Government of the Netherlands; 2016; [cited 2016 Jul 06]. Available from: http://wetten.overheid.nl/zoeken
[15] Canadian Heritage; 2016; [cited 2017 Jul 06]. Available from: http://www.pch.gc.ca/eng/1266037002102
[16] Ministry of Health Welfare and Sport; 2016; [cited 2016 Jul 06]. Available from: https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport
[17] Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. Qual Health Res. 2005;15:1277–1288.
[18] Knowledge Centre of Sport Netherlands; 2016; [cited 2017 Jan 09]. Available from: https://www.kenniscentrumsport.nl/knowledge-centre-for-sport-netherlands/
[19] Ministry of Health Welfare and Sport. National Budget 2016 XVI Ministry of Health, Welfare and Sport's Gravenhage: Ministry of Finance; 2015.
[20] Schippers EI. Letter to the Parliament 'Disability sports' on 16-10-2014. In: Ministry of Health Welfare and Sport's Gravenhage: VWS; 2014.
[21] Schippers EI. Letter to the Parliament 'Disability sports' on 23-04-2015. In: Ministry of Health Welfare and Sport's Gravenhage: VWS; 2015.
[22] Schippers EI. Letter to the Parliament 'Future sport policy' on 23-06-2016. In: Ministry of Health Welfare and Sport's Gravenhage: VWS; 2016.
[23] Brug J, van Dale D, Lanting L, et al. Towards evidence-based, quality-controlled health promotion: the Dutch recognition system for health promotion interventions. Health Educ Res. 2010;25:1100–1106.
[24] Bottenburg vM. Sport for all and elite sport: do they benefit one another? Paper for the IX World Sport for All Congress; Papendal, The Netherlands; 2003.
[25] Jong dR, Vanreusel B, Driel vR. Relationships between mainstream participation rates and elite sport success in disability sports. Eur J Adapt Phys Activity. 2010;3:18–29.
[26] Breedveld K, Tiessen-Raaphorst A. Rapportage sport 2006. Den Haag: Sociaal en Cultureel Planbureau; 2006.
[27] Dutch Parliament. Topsport in Nederland. Vergaderjaar 2008–2009, 31 711, nrs. 1–2's Gravenhage; 2008.
[28] Atsma. Minder regels, meer sport: voorstellen voor aanpassingen in de wet- en regelgeving voor sportverenigingen. Arnhem: NOC*NSF; 2005.
[29] Ross-van Dorp CIJM. Den Haag: VWS; 2006; [cited 2016 Sep 25]. Available from: https://www.parlementairemonitor.nl/9353000/1/j9vvij5epmj1ey0/vi3apgn7v6zu
[30] Hoogervorst JF, Ross-van Dorp CIJM. Subsidiebeleid VWS (in English: Subsidy policy Ministry of Health, Welfare and Sports). Tweede Kamer, vergaderjaar 2003–2004, 29 214, nr. 1. Den Haag: Tweede Kamer der Staten-Generaal; 2003.
[31] Ministry of Health Welfare and Sport. Kennis, innovatie, meedoen: beleid begrotingssubsidies VWS. Den Haag: Tweede Kamer; 2003.
[32] Hoekstra F, Alingh RA, van der Schans CP, et al. Design of a process evaluation of the implementation of a physical activity and sports stimulation programme in Dutch rehabilitation setting: ReSpAct. Implement Sci. 2014;9:127.
[33] Hoekstra F. ReSpAct: Rehabilitation, Sports and Active Lifestyle: an implementation-study on physical activity promotion in rehabilitation care [dissertation]. Groningen: University of Groningen; 2017.
[34] Edwards P, Tsouros A. Promoting physical activity and active living in urban environments: the role of local governments. Copenhagen: World Health Organization Europe; 2006.
[35] Sacks G, Swinburn BA, Lawrence MA. A systematic policy approach to changing the food system and physical activity environments to prevent obesity. Aust N Z Health Policy. 2008;5:13.
[36] Steele R, Caperchione C. The role of local government in physical activity: employee perceptions. Health Promot Pract. 2005;6:214–218.
[37] Nijendaal van GA. Drie decentralisaties in het sociale domein in 'Jaarboek Overheidsfinanciën 2014'. Den Haag: Wim Drees Stichting; 2014.
[38] von Heijden A, van den Dool R, van Lindert C, et al. (On)beperkt sportief 2013: monitor sport- en beweegdeelname van mensen met een handicap. Utrecht: Mulier Instituut; 2013.
[39] Guett M, Thomas N, Hovemann G, et al. All for sport for all: perspectives of sport for people with a disability in Europe. Lyon: European Observatoire of Sport and Employment; 2011.
[40] Gutt M. Disability sport in Europe learning from experience. Strasbourg: Council of Europe; 2013.
[41] Howe PD. Policy on sport for the disabled. In: Thibault L, Harvey J, editor. Sport policy in Canada. Ottawa: University of Ottawa Press; 2013.
[42] Blauwet C, Willick SE. The paralympic movement: using sports to promote health, disability rights, and social integration for athletes with disabilities. PM R. 2012;4:851–856.
[43] Grandisson M, Tetreault S, Freeman AR. Enabling integration in sports for adolescents with intellectual disabilities. J Appl Res Intellect Disabil. 2012;25:217–230.
[44] van de Ven L, Post M, de Witte L, et al. It takes two to tango: the integration of people with disabilities into society. Disabil Soc. 2005;20:311–329.
[45] De Bosscher V, Von Wong J. Project proposal – sport policy effectiveness in disability sport – a four-year international comparative research project. Brussel: Vrije Universiteit Brussel; 2014.
[46] Pankowiak A, Westerbeek H, Brocke C, et al. 2016; [cited 2017 Jan 09]. Available from: https://www.researchgate.net/publication/303920834_Para-SPLISS_PhD_project_proposal_overview
[47] Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. Public Health Rep. 1985;100:126–131.