

Cover Page

Title: Strategies to foster inclusion through sports: A scoping review

Running title: Review on inclusion through sports

Authors: Marie Grandisson, Justine Marcotte, Béatrice Niquette, Élise Milot

Corresponding author:

Marie Grandisson, PhD

Marie.grandisson@fmed.ulaval.ca

Department of Rehabilitation, Université Laval
1050, avenue de la Médecine
Quebec City, Quebec, G1V 0A6, Canada

Justine Marcotte, B.Sc., M. erg.

Department of Rehabilitation, Université Laval
1050, avenue de la Médecine
Quebec City, Quebec, G1V 0A6, Canada

Béatrice Niquette, M. erg.

Department of Rehabilitation, Université Laval
1050, avenue de la Médecine
Quebec City, Quebec, G1V 0A6, Canada

Élise Milot, PhD

School of Social Work and criminology, Université Laval
1030, av. des Sciences-Humaines, Quebec City, Quebec, G1V 0A6, Canada

Acknowledgments

This work was supported by Fonds de recherche du Québec – Société Culture.

Abstract

This article presents the results of a scoping review on strategies that foster social inclusion of individuals with intellectual disability through sports. Five promising strategies were identified in 14 articles: 1) develop Unified Sports, 2) develop peer-support programs, 3) facilitate participation as an athlete in mainstream activities, 4) facilitate participation as a fan in mainstream activities, and 5) conduct activities to raise awareness. Their outcomes and key considerations for implementation are presented. Then, a model of social inclusion through participation in sports and physical activities is proposed, as a mean to provide guidelines on how to provide a range of meaningful opportunities for sports participation in context(s) that are as inclusive as possible with enabling supports provided as needed.

KEYWORDS social inclusion, sport, physical activity, intellectual disability, review

Individuals with intellectual disability experience higher rates of social exclusion and more restrictions to becoming fully included in their communities (Abbott & McConkey, 2006; Amado, Stancliffe, McCarron, & McCallion, 2013; Taheri, Perry, & Minnes, 2016). Programs and policies to foster social inclusion of this population are essential. Three key concepts inherent to social inclusion of individuals with intellectual disability include participation in one's community, positive interpersonal relationships and a sense of belonging (Hall, 2010; Simpican, Leader, Kosciulek, & Leahy, 2015). These can be enhanced through meaningful participation in sports and physical activities (Grandisson, Tétreault, & Freeman, 2012; Inoue & Forneris, 2015; McConkey, Dowling, Hassan, & Menke, 2013).

At the moment, the options available to people with intellectual disability in regard to being physically active in their communities appear to be largely in specialized settings, alongside their peers with intellectual disability. For instance, more than five million athletes with intellectual disability participate in Special Olympics all around the world (Special Olympics, 2017). This organization provides opportunities to children and adults with intellectual disability to participate in training and competition with their peers with intellectual disability in a variety of sports. Special Olympics traditional programs are accessible to people with a large variety of skills in more than 90 countries. These programs have been documented to contribute to self-esteem development, gains in emotional self-control, perceived physical competence and self-worth (Choi & Cheung, 2016; Crawford, Burns, & Fernie, 2015; Fiorilli et al., 2016; Weiss & Bebko, 2008). In addition, these contribute to the social inclusion of athletes with intellectual disability by enabling them to develop meaningful relationships with their teammates, coaches, volunteers and families, and a sense of belonging, in a safe and supporting environment (Darcy & Dowse, 2013; Fiorilli et al., 2016; Inoue & Forneris, 2015). Other

opportunities for individuals with intellectual disabilities to participate in sports are provided through the International Federation for Athletes with Intellectual Impairments (INAS, 2017) and in some instances through the Paralympic Movement (Canadian Paralympic Committee, 2019). These focus on helping athletes achieve excellence in sports and hence, may not be accessible to everyone who wish to be active.

Yet, sports programs in specialized settings have been criticized for being exclusive, as interactions with mainstream population are limited (Inoue & Forneris, 2015). As Carbonneau and colleagues (2015) suggest, the authors believe that a variety of recreational opportunities should be available to individuals living with disabilities, in a context that is as inclusive as possible and in line with the individuals' capabilities and desires. Besides promoting involvement in sports programs dedicated to them exclusively, what other strategies can promote social inclusion of athletes with intellectual disability through sports and physical activities? It is expected that the strategies identified will include fostering participation in Unified Sports in which half of the team presents an intellectual disability and half does not (Special Olympics, 2016), and facilitating participation in formal and informal sports and physical activities in their communities alongside their neighbors, friends, or family members without intellectual disability (Grandisson et al., 2012). A review of the literature on this topic seems crucial to answer these questions and help build policies and programs that support the provision a wider range of opportunities to athletes living with intellectual disability. This study aimed to explore the different strategies documented in the literature through which sports and physical activities can promote social inclusion of individuals with intellectual disability. This will enable the research team to describe the strategies, to document their outcomes on social inclusion, and to present key considerations for their implementation. Nonetheless, the reader should be aware that this

review is not meant to document all opportunities for individuals with intellectual disability to be physically active. Rather, it focuses on opportunities in mainstream or semi-specialized settings specifically described to promote social inclusion through sports.

Method

The scoping review was structured according to the recognized guidelines (Arksey & O'Malley, 2005; Levac, Colquhoun, & O'Brien, 2010). The primary research question was: *which strategies can be used to foster social inclusion of individuals with intellectual disability through sports?* Two secondary research questions were also identified: 1) *what are the outcomes of these strategies on social inclusion*, 2) *what are key considerations for their implementation?* Relevant studies were then identified through a structured search in three scientific databases (CINAHL, PsycInfo & SPORTDiscuss) for the period 2007-August 2017. Keywords and database-specific subject headings encompassed three concepts: **1) social inclusion** (“Social Inclusion” OR “*Integration” OR “Community Involvement” OR “Community Participation” OR “Social Participation” OR “Friendship” OR “Social Network” OR “SPORTS – Social aspects” OR “Social Involvement” OR “Membership” OR “Social Acceptance” OR “Peer support”), **2) intellectual disability** (“Intellectual Disabilit*” OR “Mentally Disabled Persons” OR “People with mental disabilities” OR “Intellectual Development Disorder” OR “Mental Retardation” OR “Mentally Disabled Persons” OR “learning disabilit*” OR “Delayed Development”), and **3) sports and physical activities** (“*Sport*” OR “Train *” OR “PHYSICAL training & conditioning” OR “Athletic Training” OR “Sporting activit*” OR “Physical activit*” OR “Exercise*” OR “Physical Fitness” OR “Athletic Participation” OR “Athletic Clubs*”).

The following inclusion criteria enabled the research team to select relevant studies: 1) strategies must be implemented in the context of sports or physical activities, 2) strategies must be described and explicitly aimed to foster social inclusion, 3) participants with disabilities have an intellectual disability specifically, 4) articles must be published in English or French. In order to identify strategies other than promoting participation in sports alongside other individuals with intellectual disability, articles reporting on the experience of doing sports in fully specialized settings, such as Special Olympics traditional programs, were excluded. Because of the exploratory nature of this review, all study designs were included except editorials and literature reviews. Article selection was carried out by two members of the research team who independently screened by titles and abstracts, and read the full texts when in doubt. A third member of the team made final decisions regarding article selection after considering all inputs. A total of 14 articles met all inclusion criteria. Details of the selection process are presented in the flow chart below (Figure 1).

- Insert Figure 1 about here -

Three researchers designed and tested the data extraction chart. Two researchers extracted the data from selected articles in relation to key themes associated with the research questions: study methodology, characteristics of the strategies, outcomes, and key considerations for implementation. A narrative account was then developed through qualitative content analysis. Following the interpretation of the findings, stakeholders were consulted in according to Levac and colleagues recommendation (2010), to help build a model of inclusion through sports.

Results

Description of Articles Included

Study designs vary widely and include empirical ($n = 1$), descriptive ($n = 8$), quasiexperimental ($n = 4$) and experimental ($n = 1$). The data collection tools are extremely diverse: while interviews and focus groups have been used, standardised and home-made questionnaires are most common. Yet, the questionnaires used are extremely diverse. For example, these have been used to measure outcomes on variables associated with social inclusion: *Friendship Activity Scale* (used in Ozer et al., 2012) *Unified Sports Questionnaire* (used in Baran et al., 2009), home-made questionnaire on social relationships including peer hang-out-with and friendship inventory (used in Siperstein et al., 2009), *Self-Perception Profile for Children* (used in Ninot & Maiano, 2007), and *Mental Retardation Attitudes Inventory Revised* (used in Li and Wang, 2013).

Strategies to Promote Social Inclusion Through Sports

In this section, the strategies identified in the articles, their reported outcomes and key considerations for their implementation are presented. Five strategies were identified: 1) develop Unified Sports ($n = 9$), 2) develop peer-support programs ($n = 2$), 3) facilitate participation as an athlete in mainstream activities ($n = 1$), 4) facilitate participation as a fan in mainstream activities ($n = 1$), and 5) conduct activities to raise awareness ($n = 2$). Settings in which the initiatives were carried varied widely and included schools, summer camps and community infrastructures. Except for Strategies 4 and 5, all appear to include weekly training sessions in which athletes with and without intellectual disability participate. Program durations vary from 4 weeks to 21 months. Athletes are involved in a variety of sports. Yet, football and basketball initiatives appear most common in the included articles. Table 1 is structured according to the five strategies identified. It provides a description of the strategies, the most significant outcomes

associated with social inclusion, and key considerations for implementation identified by the authors of the articles.

Strategy 1: Develop Unified Sports. Unified Sports is a Special Olympics initiative in which half of team members have an intellectual disability (referred to as *athletes*) and the other half does not (referred to as *partners*) (Special Olympics, 2016). Athletes have similar athletic abilities and they train and compete together on a regular basis. A large proportion of the included studies focus on this strategy ($n = 9$), implemented in a variety of contexts such as schools, summer camps and Special Olympics Unified Sports Federation. Most studies report positive outcomes for both athletes and partners. Though involvement in Unified Sports, athletes appear to develop their social competence and self-esteem, while partners tend to develop more positive attitudes towards people with intellectual disability (Harada, Siperstein, Parker, & Lenox, 2011; McConkey et al., 2013; Özer et al., 2012; Wilski, Nadolska, Dowling, McConkey, & Hassan, 2012). Findings also highlight that these initiatives provide further opportunities for athletes and partners to interact together and develop friendships on the sports field (Baran, Top, Aktop, Özer, & Nalbant, 2009; McConkey et al., 2013; Siperstein, Glick, & Parker, 2009; Wilski et al., 2012). Nonetheless, the findings from only one study clearly suggests that these relationships may go beyond the sports fields (McConkey et al., 2013). In another study (Özer et al., 2012), partners' intention to interact with their teammates with intellectual disability outside of the structured sessions did not change even though they had better attitudes. While Baran and colleagues' (2009) study showed no significant difference in the attitudes of partners at the beginning and after involvement in Unified Sports, their baseline was taken after 2 weeks in the program. In contrast with other studies, Ninot and Maïano (2007) documented a negative impact of being involved in Unified Sports on self-esteem and self-competence of athletes with

intellectual disability. In this study, participants were randomized into groups according to age only, not athletic skills, which goes against Special Olympics' guidelines regarding Unified Sports.

Seven studies included key considerations for implementation of successful Unified sports and physical activity initiatives leading to positive change in components associated with social inclusion (Baran et al., 2009; Harada et al., 2011; Hassan, Dowling, McConkey, & Menke, 2012; McConkey et al., 2013; Siperstein et al., 2009; Townsend & Hassall, 2007; Wilski et al., 2012). These point to the critical role of coaches to promote a culture of inclusion in which teamwork is valued, the importance of matching athletes and partners according to their athletic skills levels, the importance of providing information to partners and the suitability of recreational settings.

Strategy 2: Develop peer-support programs. Two studies suggested training peers without disabilities to enable them to facilitate the participation of individuals with intellectual disability in sports or physical activities with them (Brooker et al., 2015; Stanish & Temple, 2012). More precisely, a walking program and a fitness initiative were described. Their outcomes on social inclusion have not been documented yet, but the attendance of athletes with and without intellectual disability was high in the inclusive fitness initiative (Stanish & Temple, 2012). Key considerations for implementing this type of programs includes providing training to participants with and without intellectual disability on how to support each other, facilitating contact between the pairs before the beginning of the program, ensuring someone can provide support when needed, and trying to hold the initiative in an easily accessible environment (Brooker et al., 2015; Stanish & Temple, 2012).

Strategy 3: Facilitate participation as an athlete in mainstream activities. Only one of the included studies looked at facilitating the participation of athletes with intellectual disability in mainstream activities as a strategy to promote social inclusion (Grandisson et al., 2012). Perceptions of adolescents and parents indicate that this can be an effective way for athletes with intellectual disability to develop friendships with those without intellectual disability, while promoting better attitudes in their teammates. This study brings forward many considerations when trying to facilitate inclusion in mainstream teams. These relate to the good fit between the individual being included with the group and sport chosen, as well as to the knowledge of the coach about intellectual disability and to the provision of practical support to the athlete (Grandisson et al., 2012).

Strategy 4: Facilitate participation as a fan in mainstream activities. One study indicated that the engagement of individuals with intellectual disability as sports fan alongside those without intellectual disability could be another way through which sports can contribute to social inclusion (Southby, 2013). Findings from interviews with football fans living with intellectual disability suggest that attending matches in mainstream settings is a positive social experience in which they interact with people without disabilities and develop a sense of belonging. Nonetheless, the author acknowledge that this strategy is unlikely to result in more relationships in other contexts. One key consideration when implementing such initiative is to ensure that individuals with and without intellectual disability involved share a common interest in the sport or team (Southby, 2013).

Strategy 5: Conduct activities to raise awareness. Two studies suggested promoting inclusion by conducting activities to raise awareness on the potential of athletes living with intellectual disability (Chevalier & Buckles, 2013; Harada et al., 2011). Harada and colleagues

suggested demonstrating the athletic abilities of athletes with intellectual disability in major events to help change attitudes. Li and Wang (2013) documented that exposure to Special Olympics Games, as volunteers, can help individuals without intellectual disability improve their attitudes towards people with intellectual disability. The articles provided limited information in regard to implementation of such activities, except a suggestion to develop partnerships with well-known and valued organizations in the community (Harada et al., 2011).

- Insert Table 1 about here -

Discussion

This scoping review enabled the research team to identify five promising strategies to promote social inclusion of individuals with intellectual disability through sports. Published literature primarily emphasizes developing Unified Sports, with 9/14 studies focused on this strategy. Most of these studies reported positive outcomes of using Unified Sports on variables associated with social inclusion. Nonetheless, two studies in which no or negative effects were documented had methodological limitations. In one of these, the baseline was taken at week 2 of the program, after information had been given to partners and after they had interacted with athletes with intellectual disability for some time (Baran et al., 2009). In the other, participants were randomly assigned to groups involving different sports and specialized or Unified settings according to their age, without taking into account their athletic abilities (Ninot & Maïano, 2007). Yet, this is a critical component to promote a positive social experience (Special Olympics, 2016). While Unified Sports appears like a sound strategy to enhance the opportunities for individuals with and without intellectual disability to interact and develop positive relationships, key considerations identified in this scoping review should be kept in mind to promote the success of such initiatives. Other strategies identified included developing a

peer-support structure, facilitating engagement in mainstream activities as an athlete or a fan, and conducting activities to raise awareness. The evidence for each is limited, which calls for further studies taking into account the key considerations identified in this scoping review. It is hoped that further strategies will be identified to reinforce the use of sports and physical activities as catalysts for the development of positive social relationships and a sense of belonging that perpetuate beyond the sports fields.

Congruent with advances regarding scoping study methodologies (Levac et al., 2010), a consultation with key stakeholders was carried to validate the strategies identified. These stakeholders included an athlete with a mild intellectual disability, a parent, a representative from Special Olympics and a representative from mainstream sports. This enabled the team to improve the strategies identified in the literature using experiential knowledge gained through experience in leisure and sports. For example, they suggested clarifying that a variety of strategies could be used to facilitate participation as an athlete in mainstream sports and physical activities. On this matter, they recommended to consider providing training to coaches as a strategy in itself and to add other types of practical support in the event of inclusion in a mainstream team: support by a peer, a companion or shadow who is not part of the team or by a resource-person that may be contacted as needed. Finally, they suggested to put forward the possibility to participate in sports in a variety of non-playing roles, not only as a fan. Figure 2 presents the resulting model of social inclusion through sports participation. The authors hope that this visual representation will help practitioners and policy makers make sound decisions on how to expand the possibilities through which sports and physical activities can become strong catalysts of social inclusion. More precisely, this model highlights three concepts that should be carefully considered to foster social inclusion through participation in sports and physical activities. First, it invites individuals

to select meaningful role(s) that correspond to their desires and capabilities in regards to their sports participation. Second, it suggests that the contexts in which sports participation happens should be as inclusive as possible. Therefore, depending on the capabilities and desires of the person, mainstream, semi-specialized (e.g. Unified) or specialized settings could be considered, as long as they provide opportunities for positive interactions and a sense of belonging. The model recognizes that an individual may participate in sports in more than one context and in more than one role (e.g. as an athlete in Special Olympics athletics and a community running club, and as a fan of a mainstream football team). While Special Olympics traditional and Unified sports initiatives can promote social inclusion (Harada et al., 2011; McConkey et al., 2013), the authors believe that building inclusive communities through sports should also mean that enabling supports are available as needed to promote positive and meaningful interactions with nondisabled community members. The main supports identified in this scoping review are shown in the model, while a call for further creative solutions is also put forward.

- Insert Figure 2 about here -

This scoping review has strengths and limitations. First, the decision to exclude studies reporting experiences of doing sports in specialized settings enabled us to focus on expanding the possibilities already available for athletes with intellectual disability to participate in sports in contexts that are as inclusive as possible. Yet, the published literature on benefits of Special Olympics traditional programs and experiential knowledge of team members strongly support such initiatives. In the context of an exploratory scoping study, the decision to include a wide range of study designs enabled the team to identify a wider range of strategies. Nonetheless, conclusions on the outcomes of each strategy should be interpreted with caution. In addition, there was no systematic evaluation of methodological quality as it would have been done in a

systematic review. While the process to search, select and extract the information from the articles was systematic and rigorous, we may have missed studies whose keywords did not explicitly include the concept of social inclusion. In addition, articles reporting the use of strategies to foster inclusion of people with other types of disabilities were excluded from this review.

Conclusion

This scoping study enabled us to build a model of social inclusion through sports for individuals living with intellectual disability. This model advocates for the provision of a range of opportunities to participate in sports in one's community, in a context that is as inclusive as possible, and with enabling support systems in place. The vision is to ensure that engagement in sports fosters the development of positive and meaningful relationships and of a sense of belonging that can go beyond sports fields. For this to be possible, we believe stakeholders from specialized, semi-specialized and mainstream settings will need to bring their resources together to develop innovative programs. Further studies are needed to evaluate a variety of initiatives aimed to foster social inclusion through sports.

ACKNOWLEDGEMENTS

This study was made possible through a grant received by the first author by Fonds de recherche du Québec – Société Culture. The research team wishes to thank the stakeholders consulted to improve the strategies identified in the literature for their generosity.

References

- Abbott, S., & McConkey, R. (2006). The barriers to social inclusion as perceived by people with intellectual disability. *Journal of Intellectual disability, 10*, 275-287.
doi:10.1177/1744629506067618
- Amado, A. N., Stancliffe, R. J., McCarron, M., & McCallion, P. (2013). Social inclusion and community participation of individuals with intellectual/developmental disabilities. *Intellectual and Developmental Disabilities, 51*, 360-375. doi:10.1352/1934-9556-51.5.360
- Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology, 8*, 19-32.
doi:10.1080/1364557032000119616
- Baran, F., Top, E., Aktop, A., Özer, D., & Nalbant, S. (2009). Evaluation of a unified football program by special olympics athletes, partners, parents, and coach. *European Journal of Adapted Physical Activity, 2*, 34-45.
- Brooker, K., Mutch, A., McPherson, L., Ware, R., Lennox, N., & van Dooren, K. (2015). “We can talk while we’re walking”: Seeking the views of adults with intellectual disability to inform a walking and social-support program. *Adapted Physical Activity Quarterly, 32*, 34-48. doi:10.1123/apaq.2013-0067
- Canadian Paralympic Committee (2019). Classification. Retrieved from <http://games.paralympic.ca/classification>
- Carbonneau, H., Cantin, R., & St-Onge, M. (2015). Pour une expérience de loisir inclusive. *Bulletin, Observatoire québécois du loisir, 12*(11), 1-4.

- Chevalier, J. M., & Buckles, D. J. (2013). *Participatory Action Research: Theory and Methods for Engaged Inquiry*, . UK: Routhledge.
- Choi, P. H. N., & Cheung, S. Y. (2016). Effects of an 8-week structured physical activity program on psychosocial behaviors of children with intellectual disability. *Adapted Physical Activity Quarterly*, *33*, 1-14. doi:10.1123/APAQ.2014-0213
- Crawford, C., Burns, J., & Fernie, B. A. (2015). Psychosocial impact of involvement in the Special Olympics. *Research In Developmental Disabilities*, *45-46*, 93-102. doi:10.1016/j.ridd.2015.07.009
- Darcy, S. & Dowse, L. (2013) In search of a level playing field – the constraints and benefits of sport participation for people with intellectual disability, *Disability & Society*, *28:3*, 393-407. doi: 10.1080/09687599.2012.714258
- Fiorilli, G., di Cagno, A., Iuliano, E., Aquino, G., Calcagnile, G., & Calcagno, G. (2016). Special Olympics swimming: positive effects on young people with Down syndrome. *Sport Sciences for Health*, *12*, 339-346.
- Grandisson, M., Tétreault, S., & Freeman, A. (2012). Enabling integration in sports for adolescents with intellectual disability. *Journal of Applied Research in Intellectual disability*, *25*, 217-230. doi:10.1111/j.1468-3148.2011.00658.x
- Hall, S. A. (2010). *The social inclusion of young adults with intellectual disability: A phenomenology of their experiences*. (71), ProQuest Information & Learning, US.
- Harada, C. M., Siperstein, G. N., Parker, R. C., & Lenox, D. (2011). Promoting social inclusion for people with intellectual disability through sport: Special Olympics International, global sport initiatives and strategies. *Sport in Society*, *14*, 1131-1148. doi:10.1080/17430437.2011.614770

- Hassan, D., Dowling, S., McConkey, R., & Menke, S. (2012). The inclusion of people with intellectual disability in team sports: Lessons from the youth unified sports programme of Special Olympics. *Sport in Society, 15*, 1275-1290. doi:10.1080/17430437.2012.695348
- INAS (2017). International Federation for Athletes with Intellectual Impairments. Our vision. Retrieved from <https://inas.org/about-us/who-we-are/who-we-are>
- Inoue, C., & Forneris, T. (2015). The role of Special Olympics in promoting social inclusion: An examination of stakeholder perceptions. *Journal of Sport for Development, 3*, 2-34.
- Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: Advancing the methodology. *Implementation Science, 5*, 69. doi:10.1186/1748-5908-5-69
- Li, C., & Wang, C. K. J. (2013). Effect of exposure to Special Olympic Games on attitudes of volunteers towards inclusion of people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 26*(6), 515-521.
- McConkey, R., Dowling, S., Hassan, D., & Menke, S. (2013). Promoting social inclusion through Unified Sports for youth with intellectual disability: A five-nation study. *Journal of Intellectual Disability Research, 57*(6), 923-935. doi:10.1111/j.1365-2788.2012.01587.x
- Ninot, G., & Mañano, C. (2007). Long-term effects of athletics meet on the perceived competence of individuals with intellectual disability. *Research In Developmental Disabilities, 28*, 176-186. doi:10.1016/j.ridd.2006.02.008
- Özer, D., Baran, F., Aktop, A., Nalbant, S., Ağlamış, E., & Hutzler, Y. (2012). Effects of a Special Olympics Unified Sports soccer program on psycho-social attributes of youth with and without intellectual disability. *Research In Developmental Disabilities, 33*, 229-239. doi:10.1016/j.ridd.2011.09.011
- Simplican, S. C., Leader, G., Kosciulek, J., & Leahy, M. (2015). Defining social inclusion of people with intellectual and developmental disabilities: an ecological model of social

- networks and community participation. *Research In Developmental Disabilities*, 38, 18-29. doi:10.1016/j.ridd.2014.10.008
- Siperstein, G. N., Glick, G. C., & Parker, R. C. (2009). Social inclusion of children with intellectual disability in a recreational setting. *Intellectual and Developmental Disabilities*, 47, 97-107. doi:10.1352/1934-9556-47.2.97
- Southby, K. (2013). Social inclusion through football fandom: Opportunities for learning-disabled people. *Sport in Society*, 16, 1386-1403. doi:10.1080/17430437.2013.790899
- Special Olympics. (2016). Project UNIFY. Retrieved from <https://www.specialolympics.org/RegionsPages/content.aspx?id=26902&LangType=1036>
- Special Olympics. (2017). What we do. Retrieved from <http://www.specialolympics.org/RegionsPages/content.aspx?id=17650&LangType=1033>
- Stanish, H. I., & Temple, V. A. (2012). Efficacy of a peer-guided exercise programme for adolescents with intellectual disability. *Journal of Applied Research in Intellectual Disability*, 25, 319-328. doi:10.1111/j.1468-3148.2011.00668.x
- Taheri, A., Perry, A., & Minnes, P. (2016). Examining the social participation of children and adolescents with Intellectual disability and Autism Spectrum Disorder in relation to peers. *Journal of Intellectual Disability Research*, 60, 435-443. doi:10.1111/jir.12289
- Townsend, M., & Hassall, J. (2007). Mainstream students' attitudes to possible inclusion in unified sports with students who have an intellectual disability. *Journal of Applied Research in Intellectual disability*, 20, 265-273. doi:10.1111/j.1468-3148.2006.00329.x
- Weiss, J. A., & Bebko, J. M. (2008). Participation in Special Olympics and change in athlete self-concept over 42 months. *Journal on Developmental Disabilities*, 14(3), 1-8.

Wilski, M., Nadolska, A., Dowling, S., McConkey, R., & Hassan, D. (2012). Personal development of participants in special Olympics unified sports teams. *Human Movement, 13*, 271-279.

Table 1. Description of the strategies, outcomes on social inclusion and considerations for implementation

Reference	Description	Most significant outcomes	Key considerations
Strategy 1 : Develop Unified Sports			
Baran et al. (2009)	Unified football program 3*/week for 8 weeks, followed by a tournament. Adolescents from specialized and mainstream schools.	<ul style="list-style-type: none"> •Parents of athletes and partners perceived positive change in social relationships, especially with fellow teammates. •No significant positive difference in athletes' and partners' perceptions in most variables associated with social inclusion at week 2 of the program and at the end. 	<ul style="list-style-type: none"> •Offer information about intellectual disability to partners. •Ensure coaches are open to modify rules. •Consider matching by athletic ability, not necessarily age.
Harada et al. (2011)	Unified Sports in general and Unified summer camps.	<ul style="list-style-type: none"> •Opportunities for athletes and partners to interact in meaningful ways and develop positive social relationships. •Potential improvement in partners' attitudes towards their peers with intellectual disabilities. 	<ul style="list-style-type: none"> •Favor recreational setting, such as summer camps. •Encourage work towards shared goals.
Hassan et al. (2012)	Unified Sports program	<ul style="list-style-type: none"> •Not described. 	<ul style="list-style-type: none"> •Consider implementing through an organization

	<p>implemented in 5 countries (basketball and football).</p>		<p>who has an established position within the community</p> <ul style="list-style-type: none"> •Ensure coaches are qualified (i.e. sport and Unified context), put the emphasis on training and promote a culture of inclusion. •Put forward athletes' and partners' shared interest in a sport.
<p>McConkey et al. (2013b)</p>	<p>Youth Unified Sports program implemented in 5 countries (basketball and football).</p>	<ul style="list-style-type: none"> •Stakeholders perceived it had resulted in greater social inclusion of the athletes (friendship, equal bonds, positive perception of people with ID, shared activities away from the sports field). 	<ul style="list-style-type: none"> •Ensure coaches focus on teamwork. •Give information about athletes' potential to partners and present their role as teammate, not helper. •Attempt to create partnership with community or sporting organizations.

<p>Ninot and Maïano (2007)</p>	<p>Unified sports (basketball and swimming): 2h training / week and 12 competitions over 21 months. Athletes from specialized and mainstream schools randomly assigned to specialized or Unified groups according to age.</p>	<ul style="list-style-type: none"> •Negative impact of Unified Sports on self-esteem and perceived self-competence of athletes with ID. •No group effect on perception of social acceptance. 	<ul style="list-style-type: none"> •None described.
<p>Özer et al. (2012)</p>	<p>Unified football program 3*/week for 8 weeks, followed by a tournament. Adolescents athletes and partners from one specialized and</p>	<ul style="list-style-type: none"> •Positive effects on social competence of athletes. •Improvement in partners' attitudes toward peers with ID, but no change in their intentions to play and interact with them. 	<ul style="list-style-type: none"> •None described.

	one mainstream school.		
Siperstein et al. (2009)	Summer recreational program 5 days / week * 4 weeks (swimming, basketball and soccer). Groups formed of children aged 8-13 years with and without intellectual disability. Matched for gender, age and school district.	<ul style="list-style-type: none"> •Almost all children attending the program made new friends and nominated at least one child with and one child without intellectual disabilities when asked with whom they liked to hang out. 	<ul style="list-style-type: none"> •Ensure athletes regrouped together have similar sports ability.
Townsend and Hassall (2007)	Unified sports in primary and high schools in New Zealand.	<ul style="list-style-type: none"> •None described, preliminary study on attitudes. 	<ul style="list-style-type: none"> •Consider implementing with younger students (e.g. in primary school) and in female groups. •Favor a recreational context. •Match athletes according

			to skills first.
Wilski et al. (2012)	Unified sports in five European countries with athletes and partners aged 12-15 years old (basketball and football).	<ul style="list-style-type: none"> •Athletes and partners had more opportunities to interact and develop their social skills. •Athletes and partners did not interact together more frequently in non-sport contexts. •Athletes improved their self-esteem. •Partners improved their attitudes towards individuals with intellectual disabilities. 	<ul style="list-style-type: none"> •Pair athletes and partners according to their skills, not necessarily their age. •Ensure coaches put the emphasis on the importance of teamwork.

Strategy 2: Develop peer-support programs

Brooker et al. (2015)	Walking pairs in Australia that included an adult with intellectual disability paired with a local volunteer. Walked together at least 1*/week for 30 minutes for 8 weeks around their local neighborhood and are encouraged to	<ul style="list-style-type: none"> •None described, preliminary study on obstacles and facilitators to involvement in the program. 	<ul style="list-style-type: none"> •Consider implementing in the individuals' neighborhood, outside, in a safe environment. •Facilitate connection between the adult with intellectual disability and his/her peer before the walking program. •Discuss safety issues. •Provide a support
-----------------------	---	---	---

	talk about shared interests.		structure (e.g. emergency contact) in case of difficulties.
Stanish and Temple (2012)	YMCA-based, after-school peer-guided exercise training program, 1h 2*/week for 15-week. Involving adolescents 15-21 years of age.	<ul style="list-style-type: none"> •High attendance to the training sessions for youth with and without intellectual disabilities. 	<ul style="list-style-type: none"> • Facilitate connection before the program between participants. •Pair participants after observing them interact. •Provide information to participants with and without ID about providing support and encouragement to each other. •Provide support to pairs through a fitness instructor. •Favor easily accessible facilities, ideally close to participants' home.

Strategy 3: Facilitate participation as an athlete in mainstream activities

Grandisson et al. (2012)	Involvement of athletes with intellectual disabilities in sports in mainstream settings	<ul style="list-style-type: none"> •Athletes with intellectual disabilities made friends without intellectual disabilities in their teams. •Athletes without intellectual disabilities appear to have better attitudes towards those with intellectual disabilities. 	<ul style="list-style-type: none"> •Consider inclusion in a group with similar athletic skills and age, in a setting that displays positive attitudes towards inclusion, and in an individual sport the athlete likes. •Ensure the coach has knowledge about intellectual disability. •Offer practical support to the athlete (e.g. through a peer).
--------------------------	---	--	---

Strategy 4: Facilitate participation as a fan in mainstream activities

Southby (2013)	Experience of being a football fan alongside people without intellectual disabilities for adults aged 18-41 years old.	<ul style="list-style-type: none"> •Participants develop of a sense of belonging to the sports team and see this as a positive social experience. •Participants have more opportunities to interact with sports fans without intellectual disabilities, yet unlikely to transfer into more contacts outside the actual matches. 	<ul style="list-style-type: none"> •Ensure individuals with and without intellectual disabilities involved share a common interest in the sport or team
----------------	--	---	--

Strategy 5: Conduct activities to raise awareness

<p>Harada et al. (2011)</p>	<p>Inclusion of athletes with intellectual disabilities at major sports events, including televising games played by athletes with intellectual disabilities.</p>	<ul style="list-style-type: none"> •Athletes with intellectual disabilities gain opportunities to demonstrate their competence on the playing field and to be seen and accepted as members of their communities who share similar interests to those without disabilities. 	<ul style="list-style-type: none"> •Consider developing a partnership with well-known mainstream associations.
<p>Li and Wang (2013)</p>	<p>University students without intellectual disabilities in China involved as volunteers for one week in Special Olympics games.</p>	<ul style="list-style-type: none"> •Volunteers improved their attitudes towards people with intellectual disabilities after exposure to Special Olympics games, gains that were maintained at least one month. 	<ul style="list-style-type: none"> •None described.

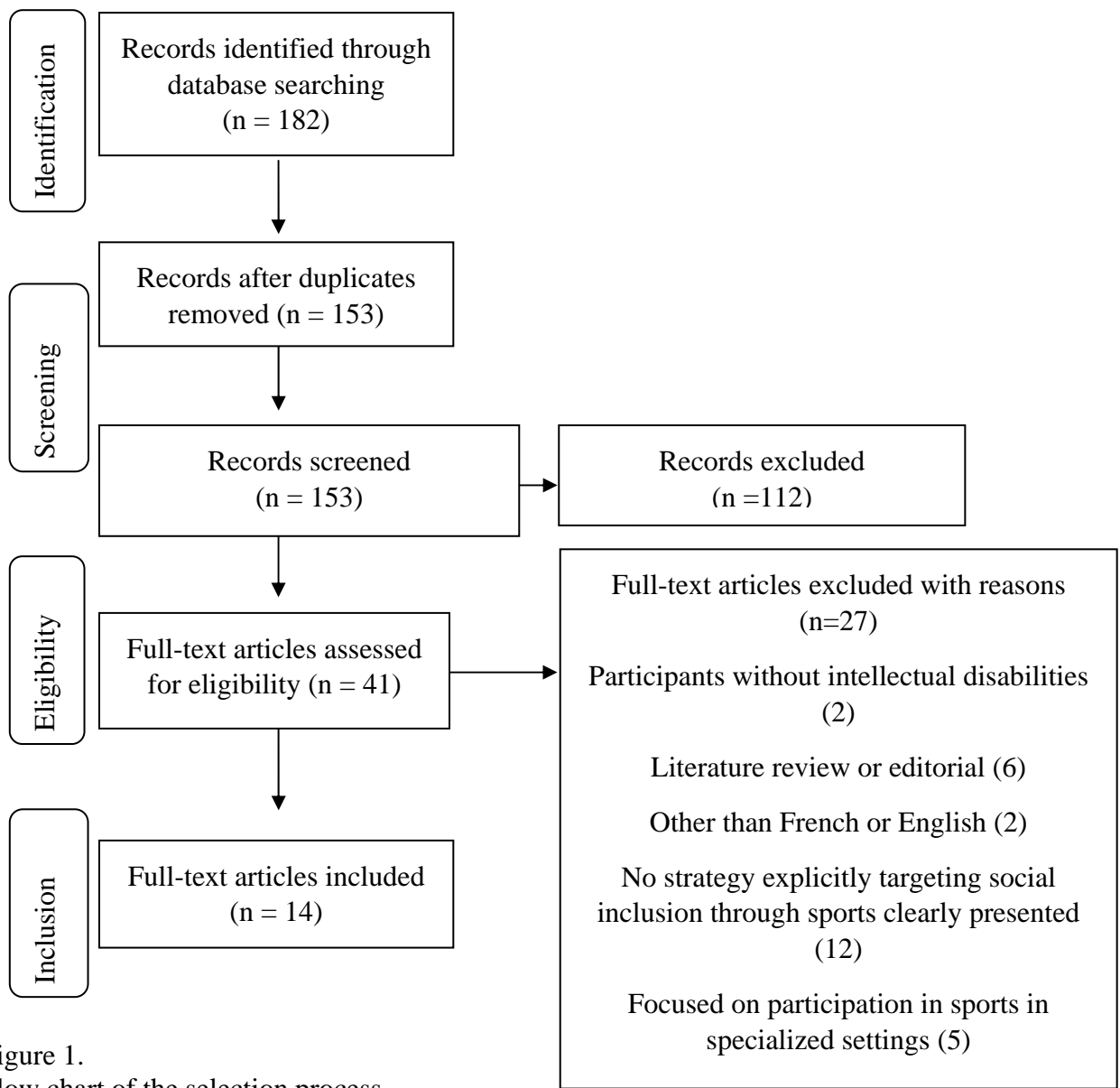


Figure 1.
Flow chart of the selection process

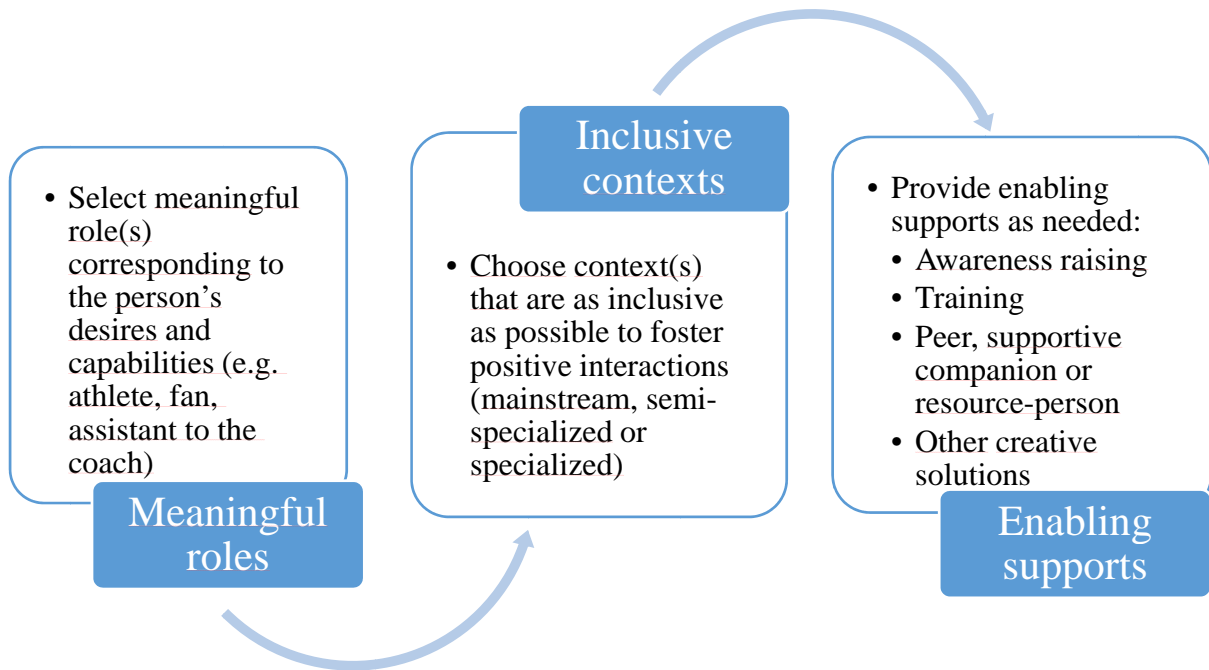


Figure 2.

Model of social inclusion through participation in sports and physical activities