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# The evolution of classification and technical rules in parasports: extending the frontiers

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## ABSTRACT

The aim of this paper is to elaborate on some of the factors that may influence the evolution of classification and technical (C&T) rules in parasports and highlight the often complex nature of these influences. Potential factors include an increase in the range of impairment types participating in particular sports, the fairness and transparency of C&T rules and media portrayal/ explanation of them and the impact of inclusion practices in sport, both of disabled athletes into non-disabled sport as well as non-disabled athletes taking part in parasports. The role of technology in parasport is also discussed, as are the challenges of changing or introducing new C&T rules, especially with respect to their potential impact upon financial and sports management aspects of parasports. The paper concludes by suggesting a possible decision making model for the future development of new C&T rules.

## KEYWORDS

parasport; disability; impairment; Paralympics; classification and technical rule development

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## INTRODUCTION

It is often claimed that sport has the potential to unite people of all nations, religions and beliefs (Mandela, 2000; UNSDP, 2016). It also helps to break down some of the barriers between individuals with disabilities and their non-disabled peers by allowing them all to participate in an activity of mutual interest and in some cases on equal terms, such as the case of Neroli Fairhall from New Zealand, who competed from a wheelchair in the Montreal 1976 Olympic women's archery competition (Wallechinsky & Loucky, 2012), or a more recent case of Oscar Pistorius – well known runner from South Africa, who participated in both summer 2012 Olympic and Paralympic games in London. The number of people participating in parasport has increased over the last decade. Every year there are more parasport events, with the biggest of them all, the Paralympic Games, garnering increasingly large global media interest, particularly in London 2012 (2.7 million spectators and a cumulative TV audience of 3.8 billion people) and Rio 2016 (more than 2.15 million spectators) (IPC, 2016). With the growing numbers involved in the parasport movement, and the rapid development of the sports themselves, there is an increasing need for the rules of the sports, which in parasports can be divided into classification and technical (C&T) rules, to keep up. This is especially true where sports need to be adapted to allow people with disabilities to take part, or to allow for fair competition where individuals with varying types and levels of impairment may participate.

The aims of this paper, therefore, are to consider some of the factors that may influence the evolution of C&T rules, to discuss the challenges in developing new classes, and to examine what is happening with athletes beyond the classification room.

### Factors influencing evolution of C&T rules

The following factors have the potential to make a significant impact on the evolution of C&T rules in parasports: (1) an increase in the number of impairment types participating in particular sports; (2) media influence; and (3) the promotion of inclusion.

*New impairment types in parasports: do the existing rules always cater for them?*

Wheelchair rugby was initially designed in 1977 as a sport for athletes with a high level of spinal cord injury (SCI), most of whom had a competitive disadvantage in wheelchair basketball, and thus remained on a bench or were excluded from the sport completely (IWRF, 2016). The existing points classification system, whereby participants are assigned a points value – 0.5 (most impaired) to 3.5 (least impaired), with no more than 8 points for a team of four being allowed on court at any point – includes a hand and trunk assessment which was designed especially for this category of athletes, and which ensures that those who take part are above a certain level of impairment. This is because wheelchair rugby is a sport for individuals who used to be called Athletes with Severe Disabilities, but are now called athletes with High Support Needs (AHSN). Part of the reason for this is to try to ensure that sporting opportunities exist for as wide a range and level of impairment as possible, and to ensure that these individuals have an opportunity to participate at the Paralympic Games.

However, the existing eligibility criteria for the sport of wheelchair rugby allow for athletes with other types of impairment (e.g. multiple amputations, cerebral palsy, multiple sclerosis, polyneuropathy, etc.) to participate. By necessity, therefore, this

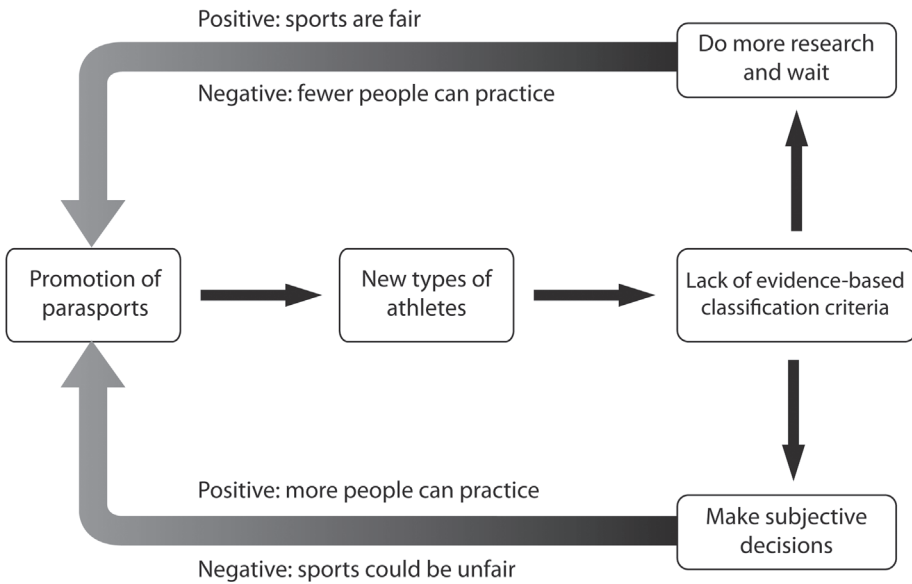
means that the approaches in assessment of non-SCI athletes need to be different from those with a SCI in order to ensure that athletes with different degrees of impairment still get the opportunity to participate, and also to ensure fair competition. For example, this requires the use of limb length measurements, or a specific coordination test, or a measurement of the level of spasticity. However, there are some athletes with conditions such as arthrogryposis, who have limitations in their range of movement, which affects their performance, but methods for their assessment are not formalised and are not included in the current rules. So how do classifiers ensure fair competition for all?

In such complicated cases as this, classifiers often have to rely on on-court observations and personal expertise. The outcome of such classification may be highly subjective, and has the potential to be very biased. As sport performance is influenced by many factors it can be very hard to distinguish a skill from a functional ability in an observational process. As an example to illustrate this difference, most of us can play football (i.e. we have the functional ability), but only a few of us have the required level of skill to play for our national team. Allowing new types of impairment to compete by making subjective decisions can sometimes lead to a situation where some athletes may potentially be eliminated from a sport. For example, presently in wheelchair rugby, high points SCI athletes have a competitive disadvantage against amputees, and with the mid classes of any impairment, since some teams favour line-ups consisting of two strong 3.5 players and two 0.5 players.

However, if the aim of the movement is to get as many people as possible playing para sport, then it is imperative that opportunities are fair and equitable for all. The International Paralympic Committee (IPC) and a number of other authors (Tweedy & Vanlandewijck, 2011) recommend the need to implement an evidence-based approach to classification. This brings with it a need to do formal research to improve and develop the C&T rules. However, this may be a time-consuming and costly process, that may in many cases require a year or more to obtain and publish even preliminary results. In the meantime, if we do not allow other impairment types to participate in the sport under investigation during this time, it might negatively affect the promotion of the sport.

It might be possible for other impairment types to play the sport as a separate classification group, but this then requires already limited budgets to be spread even further, may require the implementation of a new set of C&T rules specific to that impairment group, and presupposes the availability of sufficient individuals with that particular impairment available and willing to take part in order to make a viable competition. This process and the issues associated with it are summed up in figure 1 (below).

In some other sports however, such as IPC Para Powerlifting, there are no impairment classes, but rather eligibility criteria and weight categories. The success of an athlete is determined to some extent by which weight category they compete in, with preference being given to being the heaviest within a particular category, since the heaviest competitor in a lower weight class will have a higher strength to weight ratio, and thus better performance (Duyff, 2006, p. 498). It is known that different impairments will affect changes in an individual's bodyweight differently. A person with an amputation will immediately lose a percentage of their bodyweight due to the removed limb and, as a result of the injury, have a tendency to gain weight in



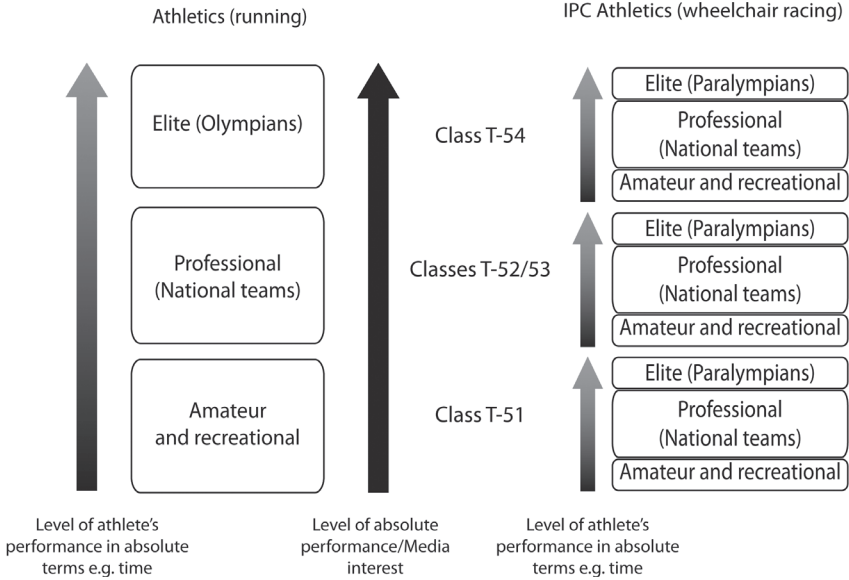
**Figure 1** Summation of the issues involved in trying to ensuring fair competition in parasport when trying to include athletes with different types of impairment whilst simultaneously trying to grow the sport

the future (Bouldin et al., 2016). Conversely, individuals with SCI will lose weight gradually after their injury due to the progression of muscular atrophy (Dionysiotis et al., 2015). Assessment of the impairment must therefore be part of the classification process, and the weigh-in procedure forms part of the technical rules. At the moment, Para Powerlifting is the only Paralympic sport for the physically impaired that has weight categories but, in the future, emerging sports such as Para Boxing, Para Cross-fit and Para Armwrestling, may develop to an international level, possibly even vying for a place on the Paralympic programme, and will, therefore, face similar challenges.

### ***Influence of the Media***

Although media coverage of, and public interest in, parasport is increasing, the fact that parasport covers a range of impairment types and ability levels, as displayed in the classification systems used for different sports, can mean that there is a tendency amongst the media to focus on the least impaired athletes, whose performances most closely align with public perceptions of what elite sport should look like (De-Pauw, 1997; Pappous et al., 2011). In non-disabled sport the increase in overall performance runs parallel with the sports level of an athlete (e.g. those with the highest level of performance are generally described as elite athletes), whereas in parasport there may be an increase in overall performance across all classification groups (with certain athletes within each classification group considered as ‘elite’ by comparison to the rest of the athletes within that group) whilst still remaining great disparities between the groups in terms of absolute performance. This may inadvertently lead to a hierarchy of importance between the groups that may be reflected in how they are perceived or portrayed by the media. For example, a comparison of the best results





**Figure 2** The potential impact of impairment level upon the perceived hierarchy of athletes in para-athletics, particularly amongst the media

for a Men’s 400 m wheelchair track race at the Rio 2016 Paralympic Games shows that a time of approx. 1 min 20 sec in T-51 class, and approx. 47 sec in T-54 class. To an uninformed spectator, both racing events look the same – all athletes are racing in a wheelchair around the same track – but the athletes in the T-54 class are nearly twice as fast as those in the T-51 class. This may, therefore, lead to elite T-54 athletes being perceived as better or more ‘elite’ than a T-51 athlete, as outlined in figure 2 (above), whereas in truth the T-51 athlete may train just as hard as the T-54 athlete and may actually be operating at a higher level of performance potential than the T-54 athlete relative to the impact of their level impairment upon their functional ability. However, whilst ‘elite’ continues to be understood and measured only in absolute terms, the T-54 athlete will always be considered more worthy of the term elite by virtue of their faster times.

It is, therefore, of utmost importance that spectators are educated to understand and appreciate the sometimes confusing organisational structure of parasport, which is not about simply identifying the best athlete in a particular sport or event, but about identifying the best athlete in that sport or event within each classification group. A key goal for the parasport movement is, therefore, to ensure that the media understand this, since they are the ones who will shape public perceptions of parasports through the way and the extent to which they portray athletes from the different classification groups within an event or sport. Efforts have been underway for a number of years in this respect (e.g. National Union of Journalists, 2010) with mixed results, and it is clear that there is still some way to go in order to achieve this. Alongside this, however, is a need for those responsible for the C&T rules of parasports to ensure that they are as fair and transparent as they can possibly be, which will in turn make

educating the media and the general public a far easier task. Although things are definitely improving in this respect they are still far from perfect and with increasing media coverage comes increased interest in taking part in sport from people with a wide variety of impairments thus placing further pressure on those responsible for C&T rules to keep up.

### ***A two-way model of Inclusion***

Usually, inclusion of people with impairments is seen as a one-way process, both within sport and within wider society – i.e. it is the inclusion of the perceived excluded group (people with impairments) into the majority group from which they are perceived to be excluded (non-disabled society). Right back to the 1940s, when Dr Ludwig Guttmann started using sport in the rehabilitation of people with SCI following World War II, sport and recreational physical activity have been promoted as one of the best environments in which to highlight the abilities of people with disabilities to the rest of society and to promote inclusion. Over the years there have been examples of athletes with disabilities practicing sports at the elite level, including participation in the Olympics, e.g. Olivér Halassy (Hungary), Water Polo (1928–36); Paola Fantato (Italy), Women's Archery (1996); Natalia Partyka (Poland) Women's Table Tennis (2008–16); Oscar Pistorius (South Africa), Athletics (2012) (Paralympicnorak, 2013). These examples demonstrate one possible conception of 'inclusion', but some athletes with disabilities will never get to compete in the Olympics. This may be due to the severity of their impairment, meaning they could never achieve the necessary performance level, or that the equipment they use in order to allow them to compete would preclude them, possibly due to giving them a perceived unfair advantage, as was the case with Oscar Pistorius when he first tried to qualify for the Olympics in Beijing 2008 (Wolbring, 2012).

At the same time, some parasports are unique (goalball, boccia, handcycling) in that they have no non-disabled equivalent and were designed specifically to allow people with particular types of impairment to take part in sport and physical activity. Other parasports have major technical differences from their non-disabled counterparts, such as wheelchair basketball, rugby and fencing, in which all competitors use a wheelchair to take part. Some non-disabled individuals have shown an interest in taking part in parasport, possibly in order to gain new experiences, both physical and emotional. This, therefore, raises the idea that for inclusion to be truly effective it should be a two-way process, allowing not only for people with impairments to take part in non-disabled sports and events, but also for non-disabled individuals to take part in parasports alongside their disabled counterparts. There are a number of examples that illustrate this two-way inclusion model. Fencers from the Russian non-disabled National Team train together with the Russian national wheelchair fencing team in order to improve their short distance performance. They do this by sitting in a wheelchair to train with their Paralympic counterparts. This may well have contributed to the 7 medals the Russian non-disabled team achieved in fencing at the Rio 2016 Olympic Games, making them the most successful fencing nation at the Games. Unfortunately, the Russian wheelchair fencing team were unable to find out if this had similarly improved their performance due to the fact that the Russian National

Paralympic Committee had been suspended from membership of the IPC and so were unable to compete in the Rio 2016 Paralympic Games.

In another example, the European Handcycling Federation (EHF) has an open class, in which anyone is welcome to participate, regardless of whether they are categorized as disabled or not. Paragraph 2.5 of the EHF Rulebook states that “Able-bodied athletes have the same rights and obligations as disabled athletes” (European Handcycling Federation, 2016). Some wheelchair teams (e.g. basketball, rugby) allow non-disabled participants to participate, e.g. in Canada, where non-disabled participants are able to compete alongside their disabled counterparts at the domestic level (Wheelchair Basketball Canada, 2016). Indeed, Spencer-Cavaliere and Peers (2011) found there were many advantages inherent in this kind of reverse integration, even going so far as to say that the inclusion of the non-disabled players actually strengthens the sport itself.

There have even been prime time television commercials (e.g. Guinness, 2013) where athletes with and without disabilities are shown practicing wheelchair sports together, but it is not until near the end of the commercial that this is revealed when the majority of the players get up out of their chairs and walk away whilst one remains. They then all go to the pub together for a drink. Through parasports the wheelchair has become to be perceived as not only a means for getting around, but also an independent piece of sports equipment that can be aligned with a surfboard, a bobsleigh or a Formula One car. This is a view shared by Hedrick and Thompson (1981, p. 11) who state “Today, wheelchairs are lighter, brighter, pivot faster, and have left the medical appliance camp to join the ranks of fine-tuned sophisticated sports equipment”. This change in perception regarding the wheelchair through sport may help more non-disabled people to overcome their own prejudices about practicing wheelchair sports.

### ***What are some of the potential impacts of reverse integration for parasport?***

So what will happen if more non-disabled individuals decide to practice parasports? On the one hand, in many sports, there are eligibility criteria which do not allow them to do so, However, on the other hand that could be seen as a limitation of the right of an individual to practice any sport he or she likes, in much the same way as individuals with disabilities use human rights legislation in order to overcome their exclusion from various aspects of life, including sport. Surely, the same legislation could be argued by non-disabled individuals to gain access to parasports? What would some of the potential impacts of this be on parasports?

Currently, classification is performed in order to minimise the impact of differences in severity and type of impairment on sports performance in individuals with disabilities in order to ensure both fair competition and the possibility for everyone to participate. However, in a two-way inclusion model it may well be necessary to equalise the difference between non-disabled athletes and the athletes with a disability. By way of illustration, the following example demonstrates how this model might work in a school setting such as a physical education class. In a class of 24, there is one girl with cerebral palsy, moderate hemiplegia, and two boys with visual impairments (VI), B2 class (according to the IPC classification standards). The teacher has chosen two team sports to be played in this class: basketball and goalball. For basketball the girl with CP will be awarded 4 points for a basket scored (instead of the usual 2 points), and the

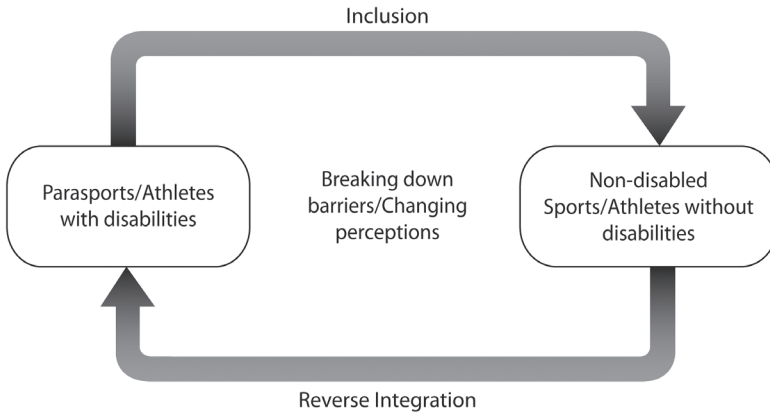
boys with VI will be awarded 3 points. In this situation it is potentially beneficial for a team to have these players on their side. Every second week the class plays goalball. In addition to that, they have wheelchair basketball games once every 2–3 months. Taken together these interventions demonstrate that inclusion can and should be promoted in both directions: inclusion of people with disabilities into non-disabled sports, and promotion of parasports among non-disabled people, at least at a recreational level.

Inclusion in both directions has the effect of bringing non-disabled people into close proximity with people with a variety of impairments, which may well not happen anywhere else in their lives. This then allows for non-disabled people to start to overcome some of the fears and prejudices regarding people with disabilities that they may well have been socialised into whilst growing up, thus helping to break down some of the barriers between the two groups. In addition, by taking part in parasports, particularly those that require adapted equipment such as wheelchairs or blindfolds, non-disabled participants may well find themselves at a competitive disadvantage, at least to begin with, as they try to get used to using the equipment or learning about spatial awareness without the use of their sight – things that the participants with disabilities have to deal with in their everyday lives. This can lead to a greater appreciation by the non-disabled participants of the skill and fitness involved in playing these parasports to a high level and thus helping to overcome some of the negative perceptions of sport for people with disabilities within non-disabled society. This is summed up in figure 3 (below).

### **What is happening beyond the classification room? A holistic approach to classification**

The ability of classifiers to achieve accurate and fair classifications for athletes is limited by those factors that they can actually test and observe during testing and during competition observations. That, in theory, should provide enough information about an individual's functional abilities and how they impact upon sports performance. Usually, the following physical components of sports performance are included in an assessment: muscular strength and endurance, flexibility, agility, balance, power, speed, coordination and reaction time. There are also some external or environmental factors such as sleep, access to training facilities, nutrition etc., that may have a strong impact on performance, as has been shown in numerous previous studies (Greenleaf et al., 2001; Williams, 2011; Kubiak, 2012; Dahl, 2013).

Within the non-disabled population these factors are self-managed. Generally, non-disabled athletes are free to choose the best available training facility that suits their needs, cook and eat whatever is their preferred food and self-regulate their own sleep routine. In para-athletes the impairment will determine some environmental factors, which directly or indirectly may have a strong influence on performance (Wu & Williams, 2001). For example, studies have shown that sleep has a significant impact on training, so a full night's sleep is essential for an athlete, and sleep deprivation can have a significant effect on athletic performance, especially during prolonged exercise (Halson, 2014; Fullagar et al., 2015; Simpson et al., 2016). There are at least two characteristics of sleep that are important – duration and quality. Impairments of a different nature may affect these two parameters in different ways. An athlete with a SCI will generally have urinary incontinence and lack of bowel control. It has been shown that people suffering from urinary incontinence have emotional disturbances, disturbance of sleep, and other negative impacts upon their quality of life

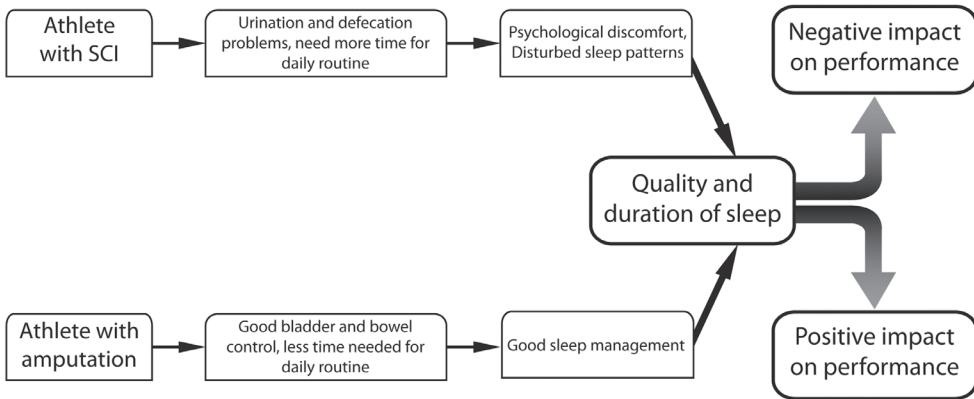


**Figure 3** The two-way model for sports inclusion

(Grimby et al., 1993; Shelton Broome, 2003). The necessity to change the urine catheter and the psychological discomfort that comes with using such devices can be added to the above list. All of these may negatively affect sleep quality. In addition, such athletes need more time to prepare themselves in the morning, and more time to do their routines during the day and in the evening, which may also result in a decrease in time available for sleep, especially during a competition, when there is a tight schedule and time is limited. Taken together, alterations in sleep quality and decrease in sleeping time will, in all probability, have a negative effect on sports performance. It should be stressed that, in this described example, sleep quality was impacted not by personal habits of the individual, but by the nature of their impairment, and this must be taken into account. Studies have shown that sleep problems are more common in individuals with SCI than in normative samples (Jensen et al., 2009). At the same time, athletes with amputations usually have no issues with urination and defecation, and need less time to perform their daily routines. These athletes can ensure good sleep management and therefore ultimately may perform better. (See figure 4 below.)

In both examples the model has been simplified, excluding many other factors like pain, level of injury, etc. The main goal was to show how impairment could indirectly affect sports performance in different groups. At the moment there is no clear evidence regarding what degree, for example, lack of bladder control has on sport performance. Do athletes with amputations or CP gain an advantage in training and competition? It is clear that further investigations are necessary regarding the indirect impact of impairment-specific factors, such as the average time that athletes with different impairments have to spend to complete their daily routines, on sports performance.

Classification has developed a long way from its medical-based roots, i.e. allocation of classes according to medical condition, to a functional and evidence-based system that evaluates and compares the functional abilities of individuals, supported by evidence gathered in properly organised scientific research (Tweedy & Vanlandewijck, 2011). Perhaps the next step in the evolution of classification will be a holistic approach that will take into consideration all factors: physical, psychological, social and environmental, and include them in the final allocation of an individual classification.



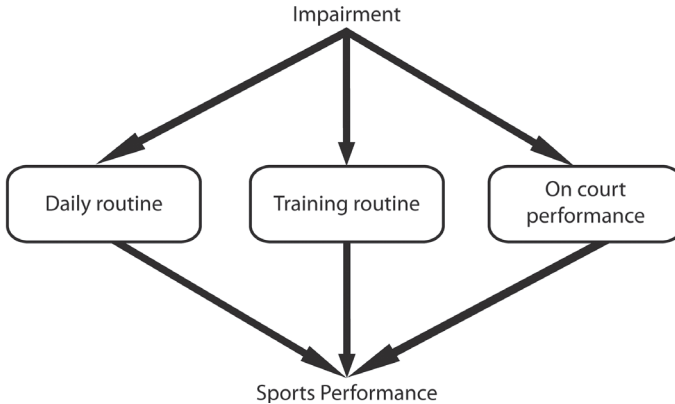
**Figure 4** An example of how type of impairment may impact sleep quality and ultimately performance

Clearly, such an idea may have limitations, amongst which a major one would be the significant increase in the number of variables that would need to be included should such a holistic approach be implemented. Every parameter would have to be well enough evidenced to be included in the classification system, and gathering evidence for all of them might well take an indefinitely long time. Some factors, such as accessibility to training facilities, would likely vary hugely across countries and development of clear criteria for their assessment seems implausible. To sum up, it should be stressed that impairment has a direct and an indirect impact on sports performance, and sometimes this should be taken into account when making final decisions about classification (see figure 5 below).

### Should technology come into the game?

Classification is generally performed using manual muscle testing, assessment of muscle tone and a number of other similar tests. Classifiers generally only utilise simple medical and measurement tools, such as a goniometer, stadiometer, measuring tape, etc. Sophisticated tools such as video and motion control, and isokinetic muscle testing are not generally used for classification purposes. There are several reasons for this. At the present time this equipment is both expensive and not particularly portable, but in the future it is expected that systems will be smaller, more functional and cheaper. A parallel here could be drawn with mobile phones: the first commercial Motorola mobile phone, used in 1983, weighed more than 1 kg and had only one function – to make a call. The price of the phone was remarkably high – almost 4000 USD (Goodwin, 2015). In less than 25 years, in 2007, Apple introduced its iPhone which weighed just 135g, had the functionality of a computer, and a price starting from just 399 USD.

The use of equipment in the classification process could help to standardise methods of assessment, potentially making them more objective. However, at present the available equipment can be quite expensive, and most classifiers or National Paralympic Committees (NPC) could not afford it. So if the use of such tools became a policy, some countries would face severe problems in finding extra funds to pay for it. There is some evidence already that the use of equipment has had an impact in the classifica-



**Figure 5** The potential role of impairment and factors that may impact upon sports performance

tion of athletes with an intellectual impairment, where some studies, which used the taping test to detect the level of intellectual impairment, had a positive outcome in the prevention of intentional misrepresentation (Deuble, 2015).

Another aspect of technology coming into the area of parasport is the development of so-called bionic limbs and other parts of the human body. In contrast to regular prostheses this type of technology is integrated into the human body and thus cannot be removed for classification, training or competition. According to recent IPC standards it is not the 'equipment' that is classified, but rather the impairment. So how in the future should classifiers proceed with bionic limbs? Should they be allowed in the sporting arena, and if so, how will this impact upon the evolution of the C&T rules? Whilst some may see the use of bionic limbs as a form of doping (Thompson, 2012), others claim that it is the future, in the form of a transhumanist Olympic Games (Istvan, 2014). It would appear logical that this issue should arise first of all in parasport, where the use of such equipment is often seen as a necessity, in that it facilitates the athlete to take part in sport and without it this would simply not be possible.

The first international competition for people with disabilities supported by modern assistive technology was held in October 2016 in Kloten, Switzerland. *Cyathlon* is defined as a championship for racing pilots with disabilities using advanced assistive devices including robotic technologies. It was created by ETH Zurich and NCCR Robotics professor Robert Riener. The competition has six disciplines: Brain-Computer Interface Race, Functional Electrical Stimulation Bike Race, Powered Arm Prosthesis Race, Powered Leg Prosthesis Race, Powered Exoskeleton Race and a Powered Wheelchair Race. At the moment the number of participants and disciplines is relatively low, and there are no strict classification criteria. The competition is seen as a way to facilitate conversation between academia and industry, to facilitate discussion between technology developers and people with disabilities, and to promote the use of robotic assistive aids to the general public (ETH Zurich, 2016). It is possible that in the future this could lead to the establishment of the *Cybalympics* – a full international sport event for athletes with robotic limbs and brain-computer interface (not to be confused with cyberlympics, which is an online cyber security competition).

## **The Challenges in having new classes – When medicine, classification, finance and sports management come into conflict**

In an ideal world, athletes with similar functional abilities would compete against each other in the same class. One possible way to try and ensure this is to increase the number of classes. This is the point at which medicine and classification ask questions such as *What changes and improvements need to be implemented in order to make sport fair?* However, increasing the number of events has many knock-on effects, e.g. it would require an increase in the number of medal events leading to increased costs as well as increases in the size of the programme. This would also raise the risk of resurrecting the viewpoint that used to dominate perceptions of the Paralympic Games twenty years ago – that an athlete only had to turn up for their event and they were virtually guaranteed a medal due the high number of classes and the consequential low number of athletes in each class. Only by analysing and evaluating the questions posed above can decisions regarding possible changes in C&T rules be made.

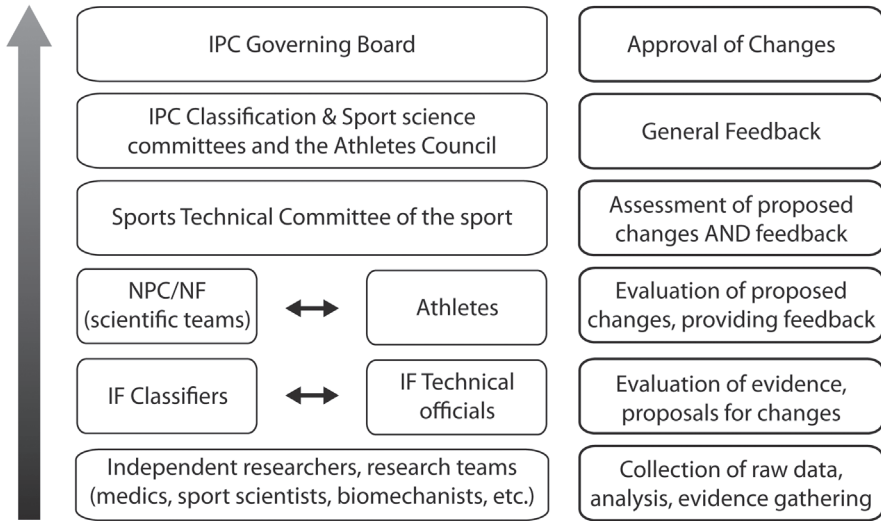
### **Implementation of changes: who is the decision maker?**

The implementation of changes to C&T rules is a long and complicated process. Sometimes changes may be beneficial for one category of athletes, whilst at the same time causing issues for others. An example of this is the trunk testing protocol in wheelchair rugby. The existing flowchart perfectly fits athletes with SCI, but it also gives an advantage to the athletes with an amputation. Those with short lower limbs could easily fail one of the initial tests (#3 – forward flexion, #4 – side rotation or #5 – side flexion) and score less points for trunk muscle power. The point here is that one needs to pass all 3 tests to score for a higher (less impaired) class. If, for example, an athlete is able to do two out of three movements, he or she gains a benefit in sports performance, but is still placed in the same class as the athlete with none of these movements. With additional strapping, the athletes with amputation will be able to stabilise the pelvis and use their trunk muscles, because they are not impaired by having a SCI. Classifiers could, therefore, find themselves in a difficult situation: on the one hand, they are not classifying equipment, and strapping, but on the other hand, medical science and common sense clearly indicates that muscle power in athletes with amputation should not be affected, so their functional ability is more than in an athlete with a SCI. It would appear, therefore, that the rules should include different testing protocols for different impairment groups, as is done in IPC Athletics, IPC Para Powerlifting and many other parasports.

To avoid similar issues in the future one of the possible solutions to smooth out the process of implementation of new changes is to ask a question: who will NOT benefit from the proposed change, and what can be done to ensure all athletes will have equal opportunities? The officials in charge should be open-minded and gather comprehensive evidence. We would, therefore, like to propose a potential decision-making model, which has the potential to balance out the development of the C&T rules process whilst at the same time giving a chance for all interested parties to bring their opinion to the table and to be heard. The proposed model is illustrated figure 6 (below).

The independent researcher or research teams, which could include, but would not be limited to, medics (doctors, physiotherapists), biomechanists, specialists in movement science, sports physiologists and statisticians, would initiate the research





**Figure 6** Proposed potential decision-making model, for the development of new C&T rules

by gathering raw data, performing specific tests, or analysing previously gathered data. They would then forward the results of their research and initial conclusions to classifiers and technical officials of the sport or sports under investigation. It should be stressed here that in contrast to non-disabled sports, in parasport the decisions in classification could have an impact on the technical rules and vice versa. That is why it is important that classifiers exchange their opinions with technical officials at this stage, no matter whether a classification or a technical rule is discussed. A designated group, consisting of classifiers and technical officials, should at this stage prepare a formal proposal of changes with a rationale, which would include how the proposed changes might affect the sport, such as whether there are any athlete groups at risk, or whether the changes correspond to the classification/finance/sports management criteria, described above. The next stage is getting feedback from National Paralympic Committees (NPC), National Sports Federations (NF), and the International Organisations of Sport for the Disabled. They should share the proposals with their scientific teams and athletes to make the process open and transparent. Some parties may provide negative feedback, which is an important part of the process, since an alternative opinion, backed with logical and evidence-based reasoning, could highlight potential flaws in the initial proposals. A time frame should be clearly defined at this stage, so it gives enough time for all interested parties to read proposals and feedback, but at the same time it should not be so long as to slow down the whole process unnecessarily.

The major role in decision-making in the proposed scheme would probably lie with the Sports Technical Committees (STC) of the sport under investigation. They usually include the most experienced technical officials, classifiers and sports managers, and could also invite external experts. It is an obligation of a STC to evaluate and assess all the evidence behind the proposals, take into consideration the feedback from NPCs and/or NFs, athletes and independent researchers and decide whether to send the

proposal for further approval or return them for further evidence or clarification. If the STC is satisfied and agrees upon a positive decision, the proposals would be sent further to the IPC Classification and Sport Science committees, the Athletes Council and the IPC Governing board for the final approval.

The key points in the proposed model are: (1) to have two or more independent research projects/research teams, (2) to discuss proposals between classifiers and technical officials, and (3) to get feedback from as many parties as possible, giving special consideration to negative feedback for possible flaws in order that improvements can be made to the proposals.

## CONCLUSION

As Nelson Mandela (2000) concluded in his famous speech ‘Sport has the power to change the world’. However, the introduction of technological advancements into sport can result in its becoming more sophisticated and challenging. Environmental scientists, doctors, and other professionals in the sports field should work together and ensure that the rules of sport are adapting accordingly in order to keep up with changes in technology and thus maintain fair play. Special attention should be given to the regulations governing parasports. In this paper we have emphasised some of the modern factors that influence the evolution of classification and technical rules in parasports. The medical and physiological factors consist, in part, of an increasing number of new types of impairment, new medical discoveries, and the development of rehabilitation technologies; whereas the social, psychological and ethical factors include, among other things, the impact of media and participation of persons with robotic limbs. In addition, there is also a potential conflict between the interests of the medical, financial and sports management authorities when developing new rules for parasports. The competing concerns of these three authorities need be resolved before any rule changes are made. In the world of sport it is sometimes hard to find solutions suitable for everyone, especially in the diverse world of sport for the disabled. However, working together it should be possible to find the right path, extend frontiers and move towards the future in a way that incorporates the needs of all parties, whilst maintaining access to sport and fair competition for all those who wish to take part.

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# Intellectual disability sport and Paralympic classification

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## ABSTRACT

Sometimes it might seem that elite disability sport, especially as represented by the Paralympic Movement, is only for athletes with an amputation, or a spinal cord injury, or cerebral palsy or blind athletes, rather than for athletes with an intellectual disability (ID). However, after we set out the various opportunities open to ID athletes, that offer different kinds of sporting engagement, we find interesting and alarming issues with respect to the elite competitive event offer for athletes with ID. In this paper, we discuss the following: the problem of inclusion, some concerns that arise in the classification of paralympic athletes such as self-declaration and eligibility, the open nature of ID sports competition, and the sport offer available for these athletes.

## KEYWORDS

intellectual disability; paralympic sport; classification; ethics

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## INTRODUCTION

At first sight it might seem as though the athletes represented in paralympic sport are those with certain relatively visible disabilities – those with an amputation, or a spinal cord injury, or cerebral palsy or blind athletes – rather than those with an intellectual disability (ID), who are, however, usually estimated to be 2–3% of the general population (Tilinger et al., 2012, p. 119). Firstly, we will examine what types of competitions there are for athletes with ID and what is their purpose, and secondly we will turn to the issues of Paralympic Games, since they pose many questions, especially because of the necessity to fairly determine the winner.

### Participation of athletes with ID in sport

Presently, there are four main types of multi-sport international events on offer for athletes with ID: Paralympic Games, Special Olympics, Global Games and Trisome Games. There is no other disability group that has so many possibilities of multi-sport international events. So we should highlight the main principles espoused by these events and their organising bodies, including their mission statements, with a view to differentiating the very disparate kinds of participation they offer.

**1. The Paralympic Games (PG)**, is organised by the International Paralympic Committee (IPC), which was founded in September 1989. Members of IPC are: International Sport Federations (IFs), National Paralympic Committees (NPCs), International Organisations of Sport for the Disabled (IOSDs) and Regional Organisations. IOSDs include organisations for blind athletes, athletes with cerebral palsy, amputee and wheelchair athletes, and also athletes with intellectual disability, who are governed by International Sports Federation for Persons with an Intellectual Disability (INAS). PG have been held every four years since 1960 (summer games), and 1976 (winter games). Athletes with intellectual disabilities officially participated in the Paralympics alongside other impairment groups for the first time in Atlanta, 1996.

The IPC Mission statement gives as its main aim:

Organise successful competitions as part of a stable calendar while encouraging participation and development at all levels and promoting the core values of the Paralympic Movement (IPC, 2013a, p. 6).

This aim was expressed by IPC CEO Xavier Gonzalez in his presentation of strategic plans for the various sports at the IPC General Assembly in 2013 in the following terms:

Our vision is to provide a platform for para-athletes to regularly practice and to showcase their ability to their full potential and to reach their sporting pinnacle and dreams (IPC, 2013b).

An updated IPC (2015b, p. 14) statement of aspiration, vision and values reads:

To make for a more inclusive society for people with an impairment through para-sport.

The Paralympic Games are the world's number one sporting event for transforming society's attitudes towards impairment [...]

To enable para-athletes to achieve sporting excellence and inspire and excite the world.

The IPC values are given as: courage, determination, inspiration and equality (2015b, p. 14). So, it seems that the Paralympic Games are mainly about inclusion, promotion of participation and development of people with disabilities. However, the Paralympic Games are quite different from the Special Olympics, which also highlight inclusion.

**2. The Special Olympics (SO)** were founded by Eunice Kennedy Shriver in 1968, after six years of experimenting with informal events. The first International Special Olympics Summer Games were held in 1968 at Soldier Field in Chicago, when a thousand people with intellectual disabilities from USA and Canada competed in track and field, swimming and floor hockey (see Special Olympics, 2017). Since then, they have spread all over the world as a global movement. It is the only non-Olympic organisation authorized to use the name 'Olympics', having been officially endorsed and recognized by the International Olympic Committee (IOC) in 1988. (See more in Brittain, 2016, pp. 199–201.) The structure of international SO events is also four-year cycle since 1968 (summer games), and 1977 (winter games).

The mission of Special Olympics is to provide year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities. This gives them continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in a sharing of gifts, skills and friendship with their families, other Special Olympics athletes and the community (Special Olympics, 2017).

The slogan of the SO also demonstrates a focus on the value of the competitive experience, rather than on winning or excellence: "Let me win. But if I cannot win, let me be brave in the attempt" (Lantz & Marcellini, 2017). The aim of inclusion is illustrated by its adoption of a 'unified sports' model, adopting the principle of 'reverse integration', meaning able-bodied athletes participating in sport for people with disabilities.

**3. The INAS Global Games (GG)** have their origin in the IPC ban on athletes with ID from international paralympic competition after the Sydney 2000 PG. They were held for the first time in Bollnäs, Sweden in 2004, and have been held four times since. The next GG, which are the largest international sporting event for athletes with ID, will be held in Brisbane, Australia, in 2019, also now following a 4-year cycle.

The IPC banned ID athletes from international competition after the Sydney 2000 PG because of a cheating scandal. The Spanish ID basketball team had included athletes with no ID, and so athletes with ID were excluded from the Paralympic Games for the following 12 years (Brittain, 2016, pp. 204 ff.; Kwon & Block, 2012; Tomlinson, 2013). This initiated the Global Games movement, governed by INAS, the International Sports Federation for Persons with Intellectual Disability within the Paralympic Movement, who manage the eligibility process for ID sport competition and promote inclusion through sport. Their vision is as follows:

We are inspired by a belief that an intellectual disability should not be a barrier to enjoying and being the best in sport. INAS' vision is that athletes with an intellectual disability across the World have the opportunity to achieve excellence in sport and high-level competition (INAS, 2010).

**4. The Trisome Games (TG)** are a new concept of competition for athletes with Down syndrome. The first TG were hosted in Florence, Italy, in the summer of 2016. They are organised by a new international multi-sport federation: the Sport Union for athletes with Down Syndrome (SUDS). They are based on the idea that people with Down syndrome have a specific disadvantage – both physiological and intellectual (Lantz & Marcellini, 2017), and sometimes even physical (orthopaedic) – and these multiple disabilities make it more difficult for them to compete with those who only have intellectual disabilities. SUDS' aim is also to advocate a specific 'trisomy 21' category in the Paralympic Games.

Now, whilst we can see that all the above-mentioned organizations exist in order to enable and promote sport participation for athletes with ID, they do so with different priorities and values, and with different strategies and purposes. So, next, we need to highlight the differences between them.

The Paralympic Games focus on athletes with all kinds of disabilities and athletes with ID are just one among many disability groups. However, they share the same aspiration for all of these groups (with physical as well as intellectual disabilities). They give athletes with ID a chance to develop and excel in sports – professionalism and fair competition is important. The inclusion here is rather inclusion into the sporting community of athletes with disabilities who have reached elite performance levels and met qualifying standards (Brittain, 2016, p. 202), and who are striving towards “testing your body to its absolute limits” (IPC, 2015b, p. 14).

For this, a reliable classification system is of the highest importance, because it guarantees fairness. It is important to acknowledge that it is not easy to prepare a fair competition for athletes who differ so vastly from each other. And so the requirement of fair competition limits the chances and openness of participation, since athletes are required to submit to detailed scrutiny for fairness, which demands differentiation, which thus separates athletes into various groups rather than bringing them together. This also limits the number of athletes who can participate in these events.

Also, though winning is not ideologically central to the PG, it goes hand in hand with the focus of Paralympic Games (the values of fair competition, excellence, etc.):

Although winning is not central to Paralympism as formulated by the IPC, it is a major consideration for National Paralympic Committees when making team selection. National Paralympic Committees emphasize winning since they receive greater publicity and increased funding based upon their position in the medal table (Howe, 2008, p. 508).

On the other hand, the Special Olympics also highlight 'inclusion', by which they however mean including people of different ability levels, with and without special needs, doing sports and games together, and so connecting people within their communities. With this kind of setting, they are not so much concerned with fair and equal



competition aiming for excellent performance; but rather with providing experience and enjoyment from active participation in sport, whilst giving all kinds of people with an interest in sport the opportunity to meet and share this interest (see more in Dowling et al., 2013). Although athletes are placed in divisions with others of similar ability (Brittain, 2016, p. 202), there is no great need for exact classification in this setting. Because of this, the Special Olympics can allow various kinds of sports and movement activities, without restricting them because of insufficient competition or classification problems (Howe, 2008, p. 510). In short: “This system is designed to challenge each athlete to do his or her best while providing a meaningful and enjoyable experience” (Brittain, 2016, p. 202).

The Global Games follow a similar pattern to the Paralympics, aiming at the excellence of athletes and highest possible level of competition. This is obvious, because they are organized by INAS, which is a member of IPC. Basically, they filled the gap in elite competition for athletes with ID during the period when these athletes were not allowed to enter the Paralympic Games. This project was successful in enabling the retention of competition at an elite level, with the possibility to ‘do it in our own way’ without IPC restrictions. However, we might say that their honesty reveals an admission that their goals include pursuing sport at the elite level of competition.

The brand new Trisome Games are based on the idea that people with Down syndrome need their own events because of multiple disability. Their aim is also to compete and win, but as they were open to any person with Down syndrome, without any special concern about the ability level of the athletes, they are more similar to the Special Olympics concept (Lantz & Marcellini, 2017).

While interpreting the word ‘inclusion’ in different ways, and having different takes on inclusion options, it is important to highlight the value of these various events in giving athletes with ID different possibilities for training and competition (performance). However, various problems need to be discussed. Some of these topics have been discussed previously, but mainly with regard to athletes with physical disabilities, rather than intellectual disabilities (e.g. Bredahl, 2011; Harris, 2010; Tweedy & Vandewijck, 2011). Nevertheless, the group of athletes with intellectual disabilities is very specific and needs special attention.

### **Classification of athletes with ID**

One of the key differences of a disability sport compared to an able-bodied sport is classification. It is a requirement of Paralympic sport that the athlete self-identify as disabled, and submit to disability classification. Its goal is to enable as fair a competition as possible by eliminating the impact of type and level of disability on the chance to win. Thus, proper categorization is of immense importance for athletes with disability so that the sport competition can be fair. However, there are many challenges in classifying the athletes properly, including athletes with ID (see Howe, 2008, p. 510). The classification system of the Paralympic Games is very complicated for the uninitiated, and there are many rules that determine the eligibility of an athlete in a certain sport, so we will now briefly set out the current classification system.

The IPC uses a three-step system, which asks the following questions:

1. Does the athlete have an eligible impairment for this sport?

2. Does the athlete's eligible impairment meet the minimum disability criteria of the sport?
3. Which sport class describes the athlete's activity limitation most accurately? (IPC, 2017)

Before we look at the issues of eligibility, self-declaration and eligibility by proxy, sport class and sports offer, we would like to summarize the fundamentals of classification.

At the beginning of paralympic sport, classification was focused on the kind and level of the disability based on a clinical diagnosis (i.e. medical classification). Later on, a functional classification system was adopted, firstly by Cerebral Palsy – International Sports and Recreation Association (CP-ISRA). This put emphasis on function in relation to a particular sport, which enabled the integration of athletes from different disability groups into one sport class (Vanlandewijck & Chappel, 1996). Currently, Tweedy and Vanlandewijck (2011) describe two types of classification that are used in general sport: performance and selective classification.

A performance classification system is based on the performance level of the athlete. If the athlete performs on a higher level he or she will move on to a higher class in order to compete against other athletes with the skills, just like the belt system in Karate (Tweedy & Vanlandewijck, 2011, p. 261). In sport for athletes with intellectual disability, performance classification is used in Special Olympics events.

A selective classification system, however, is based on pre-determined characteristics of the athlete, such as weight, gender, age, etc. This system is used, for example, in boxing and judo, where weight determines in which class the athlete will compete (Tweedy & Vanlandewijck, 2011, p. 261). The IPC has chosen to classify athletes based on selective classification: “The IPC is committed to the development of selective classification systems, not performance systems” (ibid., p. 262). It has done this in order to prevent the movement of an athlete with improved abilities (e.g. through training) to a class with a higher number, which would give a lower probability of winning.

As the validity of classification was still in question, it was proposed to develop evidence-based systems, including full eligibility criteria and assessment methods. Guidelines for classification are described in the Classification Code, first approved in 2007 (after several years of proposals and comments), and updated on the IPC website in 2015 (IPC, 2015b). Nowadays, it also involves international standards for: eligible impairments, athlete evaluation, protests and appeals, classifier personnel and training, classification data protection, classification model rules and models of best practice.

### ***Eligibility of athletes with ID***

Eligibility is based on the kind and degree of disability of the athlete. The IPC describes ten eligible impairment types. As well as impaired muscle power, impaired passive range of movement, limb deficiency, leg length difference, short stature, hypertonia, ataxia, athetosis and visual impairments, we find also *intellectual impairment*.

Eligibility is strongly connected with a minimal disability for the particular sport. As Vanlandewijck and Chapel (1996) point out, it is the borderline of disqualification of an athlete. If an athlete is disqualified, he or she has to compete with able-bodied

athletes. Eligibility and minimal disability might differ from sport to sport. For each sport different eligibility criteria are set up based on the *degree* of disability, in order to create as fair a competition as possible. This is a controversial topic because there are different perceptions of what counts as more or less of an impairment in particular sports.

For example, minimal disability in wheelchair basketball (a player with 4.5 points) equals either no restriction in trunk rotation or leaning forward or sideways in spinal cord injury athlete, a foot amputation, or a 6 cm leg length difference). On the other hand, in swimming, the criteria are, for example,

- for physical impairment: loss of one hand or a movement restriction in one hip joint;
- for visual impairment: visual acuity and/or visual field of B3 class; and
- for ID swimmers, in addition to the sport-relevant impairment: difficulties with regards to pattern recognition, sequencing, and memory, or having a slower reaction time, or showing a higher number of strokes relative to their speed than able-bodied elite swimmers (IPC, 2015a, pp. 30–32).

What is crucial for eligibility is objective proof that the athlete is really ‘disabled’ enough to be allowed to compete in a certain paralympic event. However, while proving that a part of the body is missing is relatively clear and easy, the assessment of an intellectual disability might be highly problematic, not only due to the inherent difficulty of making scientific and observational assessments, but also due to the understandable tendency of an athlete to accentuate his or her disability in order to achieve a certain classification, and thus to maximise the chances of victory (for athletes with intellectual disability, this is just a simple matter of being classified as an athlete with or without a disability, since the category is not sub-divided).

Classification cheating is a general problem in elite disability sport. For example, Etchells (2015) reports that the IPC believes that intentional misrepresentation of disability during the classification evaluation process of athletes “is in grave danger of undermining the credibility” of para-swimming and “overshadowing the performances” of the athletes. In the paralympic (and ID) context, grave damage was done in the well-known case of the gold medalist Spanish basketball team in Sydney 2000, which contained 10 members who had no ID at all<sup>1</sup>.

As a result, ID athletes were excluded from the Paralympics for 12 years, until new and more robust criteria and tests had been developed. At the Paralympic Games of 2012 in London, sports for athletes with an intellectual disability were reintroduced after evidence-based classification procedures had been developed. This can be described in three following steps (IPC, 2009; Lieberman, 2012, p. 40):

#### Step one:

If an athlete wants to enter paralympic sport in the ID class he or she needs to submit an ‘Eligibility Application’ to INAS. This application should prove the diagnosis of intellectual impairment (i.e. IQ measures 75 or below, limitations in adapted behaviour and age onset <18 years as defined by INAS (2016)). Then the INAS International

<sup>1</sup> The details, circumstances and outcomes are fully documented in Brittain (2016, pp. 204 f.).

Eligibility Committee conducts the verification process. Athletes who successfully pass step 1 are included in the ‘Classification Master List’ which is regularly updated by INAS. If the athlete is found eligible, the process will enter the next step.

#### Step two:

An on-site test will take place, which will focus on the assessment of cognitive domain factors that are relevant to the particular sport (possibly including assessment of reasoning, reaction time, visual-spatial abilities and working memory) in order to assess the ‘sports intelligence of the athlete’.

The test score will be evaluated against sport-specific minimal disability scores and the athlete will be allocated the sport class that applies to ID athletes in a particular sport. [...] The sport-specific minimal disability scores may be revisited at regular intervals to strengthen the fairness of the system (IPC, 2009, p. 4).

#### Step three:

During competition an assessment of performance (overall sport proficiency, physical profile, technical and tactical skills, and environmental characteristics) may complete the athlete’s assessment. Inconsistencies between the on-site testing and performance observation during competition can lead to protest against the allocation of the athlete to a certain sport class.

These steps fit well with the common algorithm of classification in athletes with physical disabilities, based on Strohkendl’s (1985) earlier classification in wheelchair basketball – medical, functional and observational criteria. However, there are already problems with these new procedures. Firstly, IQ is used as the measure of ID, but recent studies have suggested that the use of a certain IQ level is fairly arbitrary (see Burns, 2015; Van Biesen et al., 2016). Secondly, some have suggested that, in any case, IQ is not related to sport specific intelligence:

When it comes to table tennis, says Van de Vliet, some on the autistic spectrum have no disability whatsoever. ‘They are equally good, I would say, as any Chinese player who is at the Olympics’ (Van Gilder Cooke, 2012).<sup>2</sup>

Even though there are studies showing that ID athletes have lower performance than able-bodied athletes in track-and-field<sup>3</sup> (see Tilinger, 2013), this is not necessarily the case for other sports. Thirdly, the criterion of IQ presupposes that IQ is stable and does not change with age. But this is not so straightforward – studies do not agree on whether it changes, increases or decreases with respect to the assessment of low intellectual ability (e.g. see literature reviews by Begovac et al., 2009; Whitaker, 2008).

The IQ criterion may lead us to challenge the definition of ‘intellectual impairment’. It is defined by IPC (2015a, p. 3) in the following way:

<sup>2</sup> See also Burns (2015) with regard to table tennis.

<sup>3</sup> Given the number of able-bodied athletes engaging in track-and-field in relation to athletes with ID in the same disciplines, it is no surprise that their performance is lower.

Intellectual Impairment: A limitation in intellectual functioning and adaptive behavior as expressed in conceptual, social and practical adaptive skills, which originates before the age of 18.

It is especially the element of “adaptive behavior as expressed in conceptual, social and practical adaptive skills” that is not necessarily adequately manifested with the IQ measures. Also, Van Biesen et al. (2016) claim that “[n]o significant correlations were found between any of the subtests and IQ score or between any of the subtests and training history”.

So the question arises: what reasons does INAS have to hold on to IQ? If it is indeed not a significant measure for sport-related performance, why should it be retained as a measure? The question also arises: if ‘sport specific intelligence’ is proposed as a useful concept, won’t it require us to start looking for a ‘sporting IQ test’?

### ***The problem of improvement due to training***

It is important that a sport finds a classification system that identifies disability criteria that capture the particular kind of disability, in order to fit the selective classification system. If the criteria do not capture stable characteristics then, in fact, we are rather talking about a performance classification system, in which improvement may arise through learning and training. For example, due to training ID athletes might overcome certain gaps in their sports performance, and due to this they might out-train themselves out of their class – which for athletes with ID means disqualification of the athlete from paralympic sports (since there is only one class). So, although an athlete might have been found eligible at the onset of their career, due to an intensification of their training and a consequent improvement in performance, they might play better than before, which could bring their eligibility into jeopardy. That is why the IPC says:

The IPC is committed to the development of selective classification systems so that athletes who enhance their competitive performance through effective training will not be moved to a class with athletes who have less activity limitation – as they would in a performance classification system – but will be rewarded by becoming more competitive within the class they were allocated (Tweedy & Vanlandewijck, 2011, p. 265).

The question is: can this principle be maintained in the case of ID athletes?

### **Self-Declaration and eligibility by proxy**

Self-determination is an essential prerequisite for the development of the identity of the person with disability and his or her specific quality of life (Strohkendl, 1985). In paralympic classification, a qualifying requirement is that each athlete must self-identify as ‘disabled’ and must undergo a ‘disability evaluation’ in order to determine competition category. The athlete is required to self-identify according to self-specified and self-declared disabilities, verified by strict classification procedures, for competition in a particular event. But then we may ask: to what extent is an individual with an intellectual disability competent to declare himself/herself as intellectually disabled?

These athletes have to declare themselves as athletes with ID, and to specify their disability to the governing body INAS in order to participate. To be able to accomplish

this, an athlete must be self-determining, which requires a certain level of intelligence, or competence. According to Nota et al. (2007) IQ level correlates with level of self-determination – the higher the intellectual level and social abilities of an individual, the higher the self-determination level. This means that athletes with a higher intellectual level and less impaired social abilities are more self-determining, and might therefore be in a position to declare themselves as ID in order to be found eligible by INAS. However, athletes with more severe intellectual disabilities might not be able to do this. According to Wehmeyer (2005), individuals with severe intellectual disabilities are less self-determinant and have less control over their lives. This raises the question whether (and if so, when) a parent or legal guardian might be empowered to declare ID on behalf of an ID athlete, to secure eligibility by proxy.

According to the United Nations Convention on the Rights of Persons with Disabilities (UN CRPD), article 12:

1. States Parties reaffirm that persons with disabilities have the right to recognition everywhere as persons before the law.
2. States Parties shall recognize that persons with disabilities enjoy legal capacity on an equal basis with others in all aspects of life (United Nations, 2006).

This suggests that the person with an ID has the legal right to determine whether or not they wish to declare themselves as ID. However, the situation is more complicated than that, since not all nations are signatories to the UN CRPD, and they may make local laws concerning the legal capacity of individuals. This may or may not include provision for a legal guardian to be appointed for an individual who is less self-determining.

This seems to give a reason why the IPC, in respecting the provisions of the UN CRPD, should accept the possibility of eligibility by proxy. To deny this possibility would be one way of excluding those with higher levels of disability – in effect, to install the criterion ‘must have the ability to self-declare’ as a criterion of exclusion within the ID category. This matter will be discussed further in the next section.

Finally, we should mention the general problem of athletes who might be reluctant to self-declare as persons with ID, because of the stigma attached to such a classification. For example, a Czech swimmer withdrew from paralympic swimming for just this reason (Franzlová et al., 2000, p. 65).

### **Sport class**

As we said above, there are two types of classification that are used in sport: performance and selective classification; and the IPC has chosen to classify athletes based on selective classification. However, when we examine the criteria for eligibility in ID classification we might question to what extent it is selective. There is just one class for all ID athletes, and so this obviously cannot differentiate between various degrees of ID. This is selective insofar as only athletes who have met the ID eligibility criteria can participate in this class. But, amongst all those eligible, there will inevitably remain potentially huge differences in ID, and athletes might have to compete against others with a much lower or higher level of disability.

As expected, the top eight athletes scored systematically higher on all variables of technical proficiency than the rest of the players with ID, yet their IQ scores were not significantly different (Van Biesen et al., 2012, p. 1526).

A consequence of this is that, since there is no classification within the category of ID, the group rules discriminate against the most disabled, since they will be systematically disadvantaged (see also discussion on this issue in Bredahl, 2011, p. 140). This suggests that the most disabled will gradually be excluded from the possibility of paralympic selection, and this contradicts the IPC's stated aim: "To enable para-athletes to achieve sporting excellence and inspire and excite the world" (IPC, 2015b, p. 14). This is also in contrast to the claim of Vanlandewijck and Chapel (1996) that classification groups should take into account varying degree of disability and to prevent drop-out of people with most severe disabilities.

We must ask why no attempt has been made to classify *within* the category of ID, in order to specify the *degree* of impairment. One explanation might be the lack of adequate scientific knowledge, or the difficulty in specifying appropriate criteria. Another explanation might refer to the capped number of athletes at the PG. If further classification is to be introduced, it would entail either the sharing of numbers between ID categories, or else a redistribution from other impairment groups. A third explanation might be more 'political', questioning the commitment of the IPC to include all individuals with intellectual disability. We might question whether this has anything to do with the image of the Paralympic movement and various prejudices against people with ID. A further explanation, as mooted in the previous section, could be that IPC/INAS might be reasoning that the group should be identified with reference to the criterion of 'self-determination'. That is to say: only those athletes deemed capable of self-determination will be deemed eligible for IPC competition. If this is indeed the line of thought, it leaves us with two problems: firstly, what is the measure of self-determination? And secondly, can this measure assure us that this newly-defined ID group still needs no classification system within the group? – i.e. that equals will be facing equals in competition?

### **The Sports Offer for ID athletes in the Paralympic Games**

The limitation of having just one class is not the only limitation, though. The engagement of ID athletes with paralympic sport is restricted by another problem: there are so few sports for them in which they can compete.

There are 23 summer paralympic sports (including para-dance-sport which is not at the Paralympic Games programme) and 6 winter paralympic sports. For each of those sports there are eligibility criteria, which means that athletes with certain disabilities may or may not be eligible to compete in certain sports. If we look at the summer sports, athletes with a physical disability have the widest choice (20 sports), followed by visually impaired athletes (only 3 sports – goalball, judo, football 5-a-side – but also selected classes in other sports, e.g. athletics, swimming, cycling, equestrian, triathlon). However, the current offer of paralympic sports for people with ID are:

- Athletics – long jump, shot put, 1500 m (sport class T/F 20)
- Swimming – 200 m freestyle, 100 m breaststroke, 100 m backstroke (sport class S14)
- Table tennis (sport class T11)

So, even though there are winter Paralympic Games, there are no winter sports for people with intellectual disabilities, who are therefore excluded. Also, when we focus on the selected summer sports, there has been no ID team sport in the Paralympic Games since basketball was corrupted by the Spanish team in the Sydney Paralympics.

The selected three sports, including altogether 7 disciplines, are all individual sports. It is true that they include three different relationships to an opponent – directly facing him/her (table tennis), competing alongside (swimming, running) and competing one after another, comparing performances (long jump and shot put), but since there is no team sport, athletes with ID miss the challenge of active cooperation with a team-mate (e.g. playing in doubles, or at least small team competitions). However, other international events for athletes with ID do offer team sports: basketball and football (INAS Global Games), basketball, soccer, handball, volleyball (Special Olympics), and football (Trisome Games).

We might ask: why are these not included in the Paralympics? Do these sports not enable the realization of the vision and mission of IPC? We might also ask: why are just these team sports on offer, and not others? What sports are suitable for people with ID? These are issues that require critical examination. At the moment, it looks as though the choice of sports on offer is dependent on arbitrary factors, such as the willingness or capability of an individual sport federation to take the initiative – whether they have the time, money and other resources to seek proper classification procedures, which are necessary for inclusion amongst the paralympic sports.

## CONCLUSION

This paper has tried to identify and discuss some current issues in ID sport. We are well aware of the fact that it is more difficult to create fair competition for these athletes because of nature of their impairment, which is not as visible and recognizable as with athletes with physical disabilities. However, if we do not put some effort into resolving some of the difficulties, there will remain many obstacles to the inclusion of those who aspire to be elite ID athletes.

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# Sports in the French Association of the Paralyzed: difficulties in creating and maintaining a consensual policy

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## **ABSTRACT**

The aim of this research is to provide a better understanding of the effects of a trying to create sports policy within an organization that is not familiar with this subject. Participant observation, plus 46 interviews, revealed the difficulties in setting up a real policy within the French Association of the Paralyzed. Because of heterogeneous points of view, the development of these activities remains more like roughly assembled guidelines rather than a real sports policy. Nevertheless, we should be able to obtain a consensus in creating awareness, in training and bringing the support people to use physical activities in their caring practices.

## **KEYWORDS**

French Association of the Paralyzed; physical and sport activities; associative policy; partnerships; awareness; training

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## INTRODUCTION

The French Association of the Paralyzed (APF)<sup>1</sup>, which was created in 1933, is the biggest French association relating to motor disabilities, with 25,000 members, 30,000 users, and 15,000 employees. It has the distinctive feature of having a double identity, both as a representative organization of disabled people and as an administrator for social and health establishments and services.

In sporting terms, even if initiatives already existed at the local level, it was necessary to wait for the associative project 2012–2017 for sport to appear for the first time in the text: “To promote access to leisure activities, to cultural and sport practices, to holidays, for everybody” (APF, associative project, p. 13). In March 2014, the APF materialized this desire by recruiting a PhD student to carry out research specifically concerning the question of physical and sports activities. The official aim was to study the sports activities which are proposed and practiced within the Association, in order to set up a suitable policy favouring access to sports for members and users.

The APF, however, remains an association which is far removed from sports institutions. Some authors have pointed out how paradoxical it is to involve sport, which is based on a production of the body, on speed, efficiency (Compte, 2003; Marcellini, 2005), on results and the “worship of performance” (Ehrenberg, 1991), in the field of disability, which itself is characterized by stigmatized bodies (Goffman, 1963), which need time and individual adaptations. It would be the “unexpected and paradoxical meeting between the world of excellence or performance and the lacking, the incapacity and the inefficiency” (De Leseleuc & Marcellini, in Compte, Bui-Xuân, & Mikulovic, 2012). What is more, the APF has no strong historic roots in the field of sport. Concretely, only 25 units out of more than 600<sup>2</sup> have an employee specifically in charge of physical activities<sup>3</sup>: “Sports practice is a secondary or even tertiary consideration [...] reflection about it is the matter of a few specialists” (Geoffroy, associative leader at the national headquarters)<sup>4</sup>.

Thus, a sports policy is emerging, albeit within an organization which is not familiar with this subject. We can wonder how the various people affected by this change welcome it. How do they react to the introduction of sport into the debates? What points of view does it generate or reveal among these people? How can the APF take into account these various points of view in elaborating a national sports policy? How is this policy elaborated and conducted between the national level and the local level of the Association?

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<sup>1</sup> In French: ‘Association des Paralysés de France’.

<sup>2</sup> This figure includes the departmental delegations, the social and health services, and holidays organized by the APF.

<sup>3</sup> Most of them have an ‘adapted physical activities’ license.

<sup>4</sup> Informal interview carried out on 5th of April 2016.

## METHODOLOGY

### Research position

The initial order from the APF was relatively broad, and the research was carried out as a kind of research-action. That is why we started with an exploratory qualitative approach, specifying our research subject as more data became available (Morin, 1985; Olivier de Sardan, 1995; Beaud & Weber, 2010). Thus, an inductive approach was used (Warshay, 1975; Creswell, 2012), which was facilitated by our research position as an employee of the association.

### Tools

We have been undertaking participant observation at the national headquarters of the APF for three years. During this time, a day-to-day diary has been kept, reporting all the data relative to our study. In parallel, we have been immersed within ten local units for an in-depth analysis at the local level. Mostly, we spent approximately one month in each of them, until the data became “saturated” (Glaser & Strauss, 1967). Likewise, a diary was kept for all these local units.

At the national headquarters, as in the APF units, interviews were carried out with the various actors of the Association, half with members and users, and half with associative leaders, employees and volunteers. The interviews lasted one hour and thirty minutes on average, and were led through open-ended questions as much as possible<sup>5</sup>. Our analyses through this paper are supported by 46 interviews which have been entirely transcribed verbatim.

Finally, we regularly referred to the official documents (associative project, APF Charter, APF Plea, projects of establishments, etc.), as well as the diverse internal communication tools (circulars, the collaborative platform, the official magazine of the Association<sup>6</sup>).

### Data analysis

All the data collected (observations, interviews, official texts of the APF) brought a diversity of sources, which were examined according to the principle of triangulation (Denzin, 1978; Patton, 2001<sup>7</sup>; Glesn, 2011, p. 47<sup>8</sup>).

All our data were ordered by themes in connection with our subject. This ranking allowed us the better to compare speeches and practices between the various actors, according to a comprehensive approach (Kaufmann, 2007). It also fostered the linking between sources, which highlighted the strengthening or the contradictions. In addition, we could provide responses to our questions by using the technique of analytical questioning (Paillé & Mucchielli, 2008).

<sup>5</sup> Some disabled people could have difficulties with speech, situating events in time or projecting into the future. In these cases, we sometimes had to adopt more semi-structured forms.

<sup>6</sup> Called ‘Faire Face’ (meaning *Face up*).

<sup>7</sup> Quoted by Devaux-Spatarakis and Gregot (2012).

<sup>8</sup> Quoted by Richard (2013, p. 89).

## **The difficulty of defining a consensual sports policy**

### ***Differences in expectations about sport disciplines and practice terms***

During the interviews, the members and users expressed different expectations about sport practice: forming social links, health concerns, gaining autonomy, well-being, and sometimes just to pass time. Their expectations for sport disciplines were also very different, so that none really stands out individually: competitive sports, soft gymnastics and extreme sports are equally represented in the members' and users' expectations. This diversity is not surprising since the APF was not built around sports: there is thus no reason for having a common sporting culture, nor for finding the same diversity as in the rest of the population.

Expectations in terms of goals and sports disciplines are so heterogeneous that it is difficult to find a consensus and to define a guideline. The APF is meeting this great diversity by working with several sport partners. However, when we started as a development agent, an APF department head drew our attention to the fact that we should avoid multiplying the partners in order to work more in depth with each one of them. As a consequence a dilemma appeared, consisting in having to choose between two ways:

- The first way is to favour a small number of partners in order to work thoroughly on the accessibility possibilities, at the risk of limiting the diversity of sport disciplines on offer.
- The second way is to take into consideration the diversity of people's demands, at the risk of becoming less efficient in making accessible any specific one.

Today, the APF is at the crossroads of these two possible paths. The first one seems to be the simplest: by working with two or three fixed partners and by providing a well targeted offer, developing possibilities would be considerably facilitated. This approach could lead to the emergence of an internal 'common sports culture' within the APF. Regulating demands would allow the APF to realize a more in-depth work with partners and thus to develop the accessibility to certain sports to the full. Their access could be particularly well thought out and organized, which would allow members and users to benefit from a better structured offer. Finally, the advantage of this way is that members and users might speak with a common voice. As a consequence, they would have more weight in their sporting demands: because of the number of potential practitioners, and this might multiply the chances of obtaining an offer corresponding to their demands.

However, this construction of a common sports culture would be in conflict with the associative project document, which emphasizes the necessity of a 'personalized approach'. In this document<sup>9</sup>, paragraph n° 4 entitled "For a service as close as possible to the people and their needs" asks us to "take into account [...] their personal projects." As the goal of the association is to individualize the offers as much as possible and to provide personalized answers to each request, it may seem inappropriate to work with only two or three partners. This would not meet the diversity of the demand. Actually, the APF has adopted a hybrid position, with a first circle of main partners, and a second circle consisting of more occasional collaborations.

<sup>9</sup> APF, associative project 2012–2017: *'Move the lines! For an inclusive society'*.

Another solution is to work with partners who already provide a diversity of sports offers, either because they are multi-sports federations or because they provide both competitive and recreational sports. Thus, the four sport partners which are the closest to the APF are actually multi-sports federations. Lastly, the third solution is to work with organizations which serve as intermediary between the APF and many sport partners. For example, this is the case of the association DAHLIR ('plan supporting the disabled into integrated and regular leisure activities')<sup>10</sup>, that aims to collect requests concerning leisure activities by disabled people and finding solutions for a facilitated and sustainable access. In the same way, the PAIPS ('individual support path into sport practice')<sup>11</sup> is a more recent plan set up by some decentralized services of the Ministry in charge of sports. It has the same goal, specifically concerning physical and sport activities. Several times, as a development agent, we met people in charge of DAHLIR or PAIPS in order to convey sport offers to APF's members or users more easily.

### ***Differences in the goals attributed to the organization of physical activities***

The difficulty in choosing sport partners can also come from differences over the goal which is aimed at sports. This was the case when the APF Board meeting debated and discussed the place that should be granted, within the collaboration, to the French Handisport Federation (FFH)<sup>12</sup>, a sport federation specifically dedicated to people with a physical or sensory impairment. This is therefore a case of practicing sports between disabled peers, which was precisely the point which divided the administrators.

Most of them welcomed the partnership with Handisport, given that it has major technical expertise in the field and that it meets the needs of people with severe disabilities who can't always find a place in ordinary clubs. Nevertheless, other administrators, with a more radical point of view about social inclusion, preferred to concentrate efforts on the development of mixed sport practices, within the community and with non-disabled people. One administrator said: "At the end of the meeting [with Handisport], I wondered if it was the right interlocutor for the APF." To such administrators, the partnership with the APF represented a detour with regard to the aim of inclusion, which is the central notion of the APF's associative project.

At this point, we should investigate the concept of 'inclusion' in order to understand better the beliefs that the actors have developed towards it. Indeed, we have noted large differences in its definition, or at least in the way it is perceived in the context of physical and sport activities. Inclusion is the central concept in the APF's associative policy, as shown by the title of the associative project '*Move the lines! For an inclusive society*' (APF, 2012–2017)<sup>13</sup>. However, not all the actors share the same beliefs about the concept of 'inclusion' or 'inclusive society'. Our focus on the physical

<sup>10</sup> In French: 'Dispositif d'Accompagnement du Handicap vers des Loisirs Intégrés et Réguliers'.

<sup>11</sup> In French: 'Parcours d'Accompagnement Individualisé vers les Pratiques Sportives'.

<sup>12</sup> In French: 'Fédération Française Handisport'.

<sup>13</sup> Published on the web: <http://www.apf.asso.fr/left-presentation/left-presentation-projet-associatif>. The aim is to move the lines of engagement towards a more inclusive vision of society, including the development of a range of services that are 'closer to people'.

activities enabled the revelation of these differences. We shall give two examples to illustrate this idea.

The activity *boccia*<sup>14</sup> is provided in a residential unit for adults. Training takes place once a week. The group is composed of the sports instructor, who is a professional of the residential unit, and on average six players, who are users of the establishment. Thanks to adapted minibuses, everybody goes to a city gymnasium, made available by the City Hall. Whereas the activity could be organized within the establishment, to save time on transport, the sports instructor asserts that it is important

“to get out of the walls of the establishment”: “behind this idea of inclusion, there is the strong idea getting out of the residential shelter, not staying between four walls dedicated to disability and to go, to go towards the others. Forgetting about a part of one’s disability, to be just like everybody” (Pierre-Matthieu, sports instructor).

Almost all the physical activities take place outside of the establishment, but the athletes very rarely mix with non-disabled people. They do indeed go outside of the “four walls dedicated to disability”, but we can wonder if, in this case, they manage to get out of the “institution of disability” (Barral et al., 2000) which simply moves from one place to another.

According to some other actors, the goal of inclusion involves a very different belief. A local delegation<sup>15</sup> accompanies its members on a weekly outing to an ice rink. A time slot is specifically reserved for them. This local delegation offered to one of the APF’s establishments also to accompany its users. The director of this establishment refused on the ground that it is not an ‘inclusive’ activity according to her, as there is no mixing with other people. In this case, the director considers that inclusion necessarily involves mixing with non-disabled people, and that going somewhere other than within the establishment is not enough to count as an ‘inclusive’ activity.

Through these two examples, we can observe two very different beliefs coming up against each other on the concept of inclusion. These differences render a consensus difficult to obtain, on the ways to meet the goal of inclusion. These debates are rather natural and healthy in the life of all big organizations, but for sure, they cause some discomfort in defining a guideline for the associative policy. How can a consensual policy be developed for actors who do not share the same beliefs concerning the objectives and the ways to implement them? How do we define guidelines which are supposed to gather together beliefs and practices which seem incompatible? Are we not facing a dilemma which consists in either defining an empty policy allowing all the attitudes, or establishing a real position but at the risk of antagonizing half of the people involved?

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<sup>14</sup> This is a game of precision which consists in throwing a ball closest to the white ball called ‘jack’. This sport was created especially for disabled people, with specific adaptations for those who cannot move their arms.

<sup>15</sup> The delegations are not establishments or services funded by public authorities. They are the local relays of the associations, which gather members and can offer them leisure activities.



### ***A lack of dialogue as a fertile ground for misunderstandings***

Sport does not hold a central position among the debates in the APF. It does not benefit from the same attention as other subjects, such as accommodation, access to employment, the income of disabled people, and accessibility to public places and to transport, which are recurring subjects for the decision-making authorities (APF Congress, Board meetings, General Assembly or departmental meetings) or in communication outlets (the magazine of the association 'Faire Face', the circulars, the internal collaborative platform, etc.). For example, at the end of an APF Board meeting which lasted all day long, we had only five minutes to present two agreements, prepared with two out of the four main sport partners of the APF. The administrators voted for this partnership with only the data provided through this short presentation. In this context, we understand that the decisions which must constitute the sports policy do not undergo lengthy debates, confrontations of points of view, precision concerning certain data, or sharing and revising opinions. As a consequence, it is not surprising that the differences underlined above remain strong. Furthermore, they cannot be dissipated as long as the subject is not much, or not at all, discussed. There are still disagreements, differing points of view, sometimes without the people concerned even realizing it. This lack of dialogue must contribute to the misunderstandings which we highlighted above, and may even strengthen them. The lack of time spent on the subject of sports must increase the difficulty of developing a consensual policy.

The differences in expectations and beliefs, as well as the lack of dialogue, make difficult the elaboration, on a national scale, of a consensual sports policy. In this context, the internal official texts of the APF remain necessarily broad on the subject of sport. The associative project simply introduces the objective "support [its] access" (APF, associative project, p. 13), by linking it with cultural practices and with holidays. Likewise, most of the official texts only mention sport by linking it with the problem of accessibility and by including it in the triptych 'culture-sports-leisure'.

Consequently the development of a sports policy remains a complex problem, which is resolved for the moment only by broad or even vague guidelines. All the same, these allusions draw attention to the subject, even though it is not enough to be considered as a real policy. Furthermore, we shall see that, even when choices are clearly defined, the differences in beliefs between the national level and the local level also complicate the implementation of a sports policy in the field.

### **The implementation of the sports policy at the local level**

#### ***Implementing the partnerships***

The national headquarters of the APF got in touch with the FFH at the beginning of the year 2014. Local partnerships had already existed for a long time between these two organizations. The place where these links were identified with the most intensity was in a rural region, the inhabitants of which regularly qualify it as a 'human scale region'. Its main city has a population of only 18,600 inhabitants and the diverse actors of the APF frequently explained that, in this place, 'everybody knows each other'. The APF delegation lends its premises for FFH meetings, the FFH organizes sport initiatives for the APF's members, and each organization attends the other's assemblies. However, this kind of partnership involves actors who are personally close, who have known one another for a long time and who have social relationships besides their respective

labels APF and FFH. Thus, we can suppose that these close links are rather due to the people themselves than because of an APF-FFH collaboration induced by a real policy.

Nevertheless, although some actors did not wait for the national impulse to develop partnerships on the local level, others seem to be watching and waiting for an impetus on the national level. Through our participant observation, we met a regional manager of the APF, who had also been involved for a long time in the FFH. This actor questioned and regretted that the APF and the FFH did not have closer links:

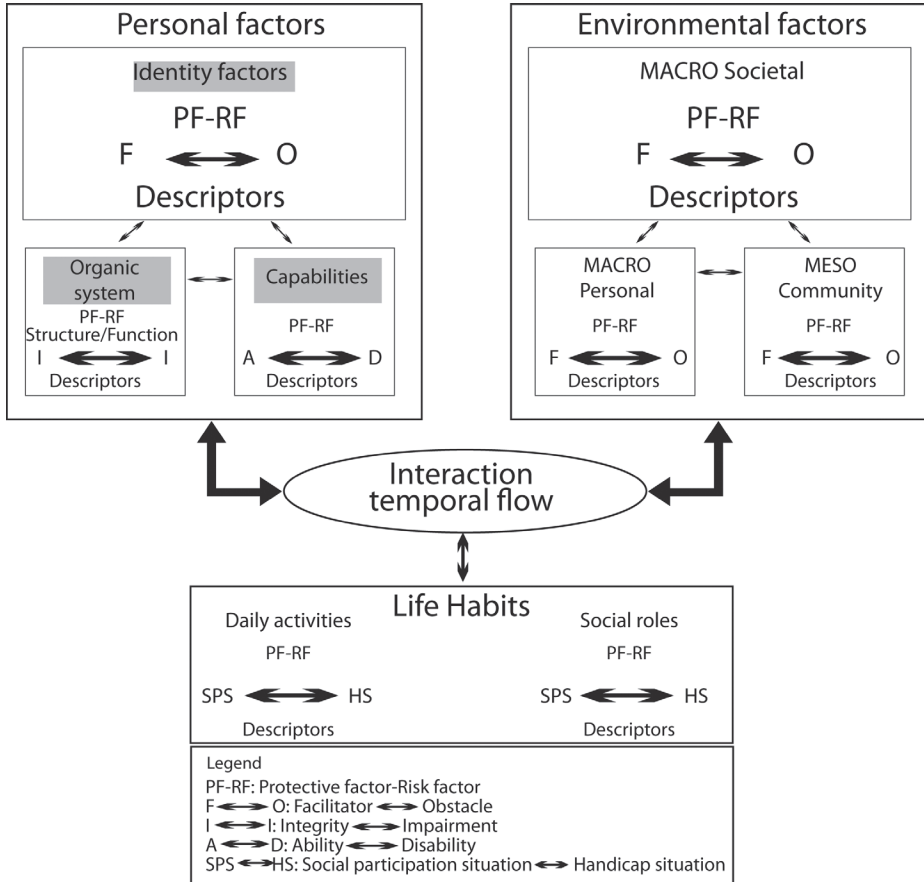
As a director [of an establishment], we don't always know which position to take with regard to the FFH. It would be good to know that the associative leaders give their consent, that it comes from the top and that they would tell us 'you have everything to start, you are authorized' (Hervé, regional manager).

Through this example, we have an actor in the field who is waiting for instructions from the national headquarters to know which position to hold concerning local partnerships. On the other side, a national manager informed us that the APF must exploit the local initiatives as a starting point for its policy because "the field does not like to be given orders". In this situation, the regional manager is convinced that the APF should follow a traditional top-down structure, whereas the national manager sees it as a bottom-up organization. A fresh source of misunderstanding therefore appears since each actor waits for the other to take the initiative to develop the partnership – the first one for fear of exceeding the limits of the Association's guidelines, and the second one for fear of being too authoritarian.

A national agreement between the APF and the FFH was signed in October 2016. Several lines of cooperation are planned through it: sport initiatives within social and health establishments and services, mutual training for professionals concerning physical activities and disability, lending specific equipment, informing and making disabled people aware about physical activities, individual support relating to sports requests, etc. The agreement also established free access for any member of the APF wishing a FFH license, and vice-versa. We are following with interest the possible impact of this agreement on local practices. Will local partnerships become easier to form now that the national partnership is official? On one hand, we can expect that, thanks to the communication of the national headquarters towards its units, this agreement will open the path for new ideas at the local level for the actors in the field. On the other hand, an official text from the national headquarters may be insufficient to change the outlook and the practices developed by the actors in the field concerning physical activities. In fact, a text produced at the national level will be accepted and backed by the actors in the field only if they share a minimum number of beliefs and values with both the national headquarters and the text in question.

### ***Between national and local levels, between medical and social models***

In the various units of the APF, we have often heard that the development of sport is awkward or impossible because "people are too severely disabled", or because it concerns the issue of "ageing practitioners". Referring to the model of the International Network on the Disability Creation Process (figure 1), we could assert that the explanations are more relative to personal factors rather than to environmental factors.



**Figure 1** Human development model – disability creation process (HDM-DCP). Translated from: Fougeyrollas (2010). Published at [https://www.researchgate.net/figure/272029642\\_fig1\\_Figure-1-Human-development-model-disability-creation-process-HDM-DCP-Translated](https://www.researchgate.net/figure/272029642_fig1_Figure-1-Human-development-model-disability-creation-process-HDM-DCP-Translated)

This outlook clearly contrasts with the philosophy and the values developed by the APF, which has always based its claims on issues linked to environmental factors rather than to personal ones. The APF calls for the development of public places to build “a society which is open to everybody” (an expression which can be found in the associative project and in the Plea APF<sup>16</sup>). The association thus attributes disability not to the actual person, but to the environment which is not adapted to him/her and which puts the person in a “situation of disability”. On this topic, the APF refuses the terminology “handicapped person” or “disabled people”, but systematically uses the expression “person in a situation of disability”. The agreements with sports partners are part of this approach, in trying to act on every environmental factor: transport, human help, awareness of promoters, adapted sport equipment, financial accessibility, etc.

<sup>16</sup> Published on the web: <http://plaidoyer.blogs.apf.asso.fr>.

Besides, the interviews with professionals and volunteers do not show a conflict or a disagreement on this subject with the organization: on the contrary, in their speeches, the interviewees widely share the idea that society produces the situations of disability and that the environment is essential so that the person can lead life “just like everyone else”. In other words, the professionals and the volunteers of the APF, in the same way as the official speech of the association, advocate a “social model” of disability and widely reject the “medical model” (Brisenden, 1986). In this case, how can the barriers identified as “too severely disabled” or “ageing people” be compatible with the philosophy of the APF and with their own outlook, which demand a social model of disability?

If the issue does not come from a disagreement between the actors of the APF and the official discourse of the institution, we must explore more deeply the contradictions within the views expressed by the professional and the volunteer care attendants. The interviews highlight that, even if the actors clearly approve the social model, they frequently identify barriers in the access to the physical activities which they often attribute to the people themselves. In that situation, we observe a continuation of the medical model whereas the national policy is resolutely positioned towards the social model. Thus, the actors in the field have the impression of being confronted with individual limits and that the environment will not make everything possible.

We shall take the example of a sports instructor working in a residential shelter for adults, with whom we spent one month. When talking, he often explained to us the necessity of adapting physical activities to the needs of the person. These were not empty words: we observed that he indeed put them into action during his sports sessions. Nevertheless, he expressed his limits during his interview:

We should be there for them and we don't find [...] we don't really find solutions so [...] well, for Marc and Martine it's alright, but Madam M. who is over there, her health [...] her health doesn't allow to do much [...] so that's difficult. Except playing chess with her, I don't really see what else to do! (Pierre-Matthieu, sports instructor, employee and graduate in Adapted Physical Activity)

This sounds as if the professional feels powerless in the face of the challenge of adapting the activity to the needs of the person. Even if he subscribes to the general principle, some cases considered as extreme allow the personal factors, at least with regard to his beliefs, to get the upper hand over any other consideration. In some cases, the continuation of the medical model can even appear as a way to clear oneself of responsibility: as a professional or volunteer, if I do not propose physical activities, it is not because I did not know to set in motion, it is not because I am not able to organize them, but it is just because the people of whom I take care are not able to take part in such practices.

In this context, the APF has many difficulties in broadcasting the social model of disability which it develops and which it would like to be applied in the field. The sports policy, in the same way as the general policy of the APF, advocates and emphasizes certain beliefs both about disability and about the way in which to support disabled people. Our inquiries show us that these guidelines are not necessarily respected in the field, even though the actors share the beliefs developed by the national model.

We can then think that the role of the national policy is to provide tools which will enable them to respect and to apply the philosophy of the associative policy in general. This involves making an effort to raise awareness of the actors in the field, but also to train them so that they actually have the means to adapt the environment to the needs of the person. It also involves material and financial resources. This last point exceeds our line of research, but we shall go back to the first two points.

### ***The necessity of raising the awareness of care attendants***

This latter example referred to Pierre-Matthieu, a sports instructor. He was trained at the university for an Adapted Physical Activity license, was specifically recruited for a sports mission, and has 27 years of experience in this job. Unlike him, most of the professionals and volunteers in the APF – whose job is not primarily linked to sport – have not been trained for these activities, and they are not necessarily sport practitioners themselves. As they do not come from the sports field, they do not necessarily intend to propose the introduction of a physical activity to the public which they care for, because they may not perceive all of the benefits for them in terms of health, social participation, inclusion in the community, perception of quality of life, or acquisition of adaptive skills (Badia, Orgaz, Verdugo, & Ullan, 2013). It is also difficult for them to know what these people are capable of, as well as their limits in terms of practice. This could lead to dangerous situations, but most of the time, fear of danger or accidents leads them to avoid any risk-taking and dissuades them from engaging in the organization of physical activities. For instance, this is the case in some local delegations which do not propose outings to the swimming pool or to the seaside, because the responsibility and the risk are considered too high.

Thus, the sports policy of the APF aims at making professionals and volunteers aware of the use of physical activities and promoting their integration into their practices. Firstly, it is a case of understanding and familiarizing them with the social model of disability. But this part does not seem to be the most difficult part, since the large majority of APF actors seem ready to adopt this model. The crucial part is being able to apply this model to physical and sport activities by demonstrating that it is possible to adapt them to the needs of the people in their care. To this purpose, the sports policy of the APF is based on the expertise of certain sports partners who are able to propose adapted activities to disabled people. For instance, we can mention the ‘Cap Loisirs Sportifs’ plan (meaning ‘Sportive Leisure Cape’) provided by one of the main partners of the APF, the National Union of Outdoor Sports centers (UCPA)<sup>17</sup>. It consists of mobile sports facilities that could be carried inside the APF units. The aim of this is to create a first link between the various sports possibilities and disabled people, and to promote and support a possible transition towards a sport practice integrated within the community. In the first stages, cycles of five two-hour sessions are proposed, which are supervised both by sports instructors from the UCPA – who are professionals specifically trained in adapted physical activities – and by the professionals from the establishments and social services. On the APF’s side, this type of plan can allow professionals to perceive ways of organizing these physical activities. They can help to realize the extent of the capacities of the users in action and possibly

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<sup>17</sup> In French: ‘Union nationale des Centres sportifs de Plein Air’.

contribute to modifying their beliefs. At the national level, the APF tries to support and sustain this kind of plan by promoting them within its internal network and by allowing their organizers to present them in action during national meetings.

### ***The necessity of training the support people***

Nevertheless, inciting the professionals and the volunteers to use physical activities has no sense if these actors do not have a minimum amount of skills in organizing them. Most of the time, the sports activities in social and health establishments and services are provided by educators, animators or medical and psychological assistants who have no specific mission aimed at sports. As a consequence, the care attendants who have no sports culture, or at least no specific training, can be quickly dissuaded by feeling powerless in organizing and adapting physical activities. Professionals who have no specific sportive training are the most common case in the various units of the APF. Considering themselves as ineffective, the actors risk developing the feeling that they have come up against barriers due to personal factors, not knowing how to adapt the environment or how to adapt a physical activity to the needs and capacities of the person.

If the sports policy of the APF does not bring a minimum amount of knowledge concerning the organization of adapted physical activities, the support people will always be placed in a complicated position. They will never know how to adapt sports tools because of a lack of training and skills surrounding their use. Thus, the sports policy of the APF must plan to provide ways to its professionals and volunteers to use physical activities as a tool in caring for disabled people. It does not mean that all the care attendants should become specialists in the field of physical activities, but the actors who are the most likely to organize them should be taught the basic skills for organizing these activities safely. They should also be able to adapt physical activities to the capability and individual needs of each disabled person. Of course, as was proven by the example of the sports teacher who was mentioned above, a long and specific training does not necessarily mean success in overcoming all the obstacles, but a minimal training could quickly contribute to the development of this tool within the units of the APF (social and health establishments and services, but also departmental delegations or holidays organized by the APF).

There again, the APF plans to rely on its sports partners to develop the training of its staff for physical activities. This approach is at the moment only at its beginning, but the agreement signed or planned for with the FFH and the UCPA aims precisely, amongst other topics, at initiating this minimal training for some professionals or volunteers of the APF. In return, the APF has some expertise in terms of accessibility or knowledge concerning disability in general, which can interest these partners and which can help them to develop activities which are more and more accessible for disabled people, including members and users of the APF. Thus, the sports field and the disability field can mutually strengthen their skills, which should benefit the public they care for.

## CONCLUSION

We started out from the observation that defining and implementing a national sports policy is particularly difficult within an organization which is quite far removed from the sports field. It seems difficult to define a consensual policy as the goals, and the ways to reach them, are diverse among the various actors of the APF. From this point of view, choices made at the national level often seem more like roughly assembled guidelines rather than a real policy. However, a more clearly-cut positioning could concretely bring up the issue for all the actors of the APF. It would probably be difficult, or even impossible, to develop a consensual policy, but the elaboration of a policy could bring up subjects that would be useful for a constructive dialogue. Furthermore, it would certainly be difficult for actors in the field to apply this sports policy in its entirety, but it could set a target to aim at. This target may be a utopia, but one that is necessary because it would offer a guideline for the various actors.

The APF does not have sufficient expertise alone to support its network in the implementation of this sports policy. This is why the APF chooses to rely on its sports partners to raise awareness, train and engage the actors who are open to using physical activities in their caring practices. The success of this sports policy would also be a good point for the sports partners because this large association allows them to touch a higher number of potential practitioners. The work put into these partnerships could then be the cornerstone in the construction of the sports policy of the APF.

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# Differences in presence and distribution of various food groups in persons with spinal cord injury

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## ABSTRACT

The aim of this study was to analyse the dietary habits of subjects with spinal cord injury (SCI), especially to evaluate differences in the presence and distribution of various food groups among a group of males and females. Subjects ( $n = 50$ ,  $n_1 = 36$  males,  $n_2 = 14$  females) completed a frequency questionnaire, which included questions focused on the detection of size of consumed foods and frequency of consumption of various food groups (cereals, potatoes, vegetables, fruits, dairy products, meat, meat products, fats, sweets). We noted significant differences in the composition of breakfast (meat intake), lunch (vegetable intake, dairy intake), dinner (dairy intake, sweet intake), snacks (fats intake) in males and females. Differences in dietary habits of males and females with SCI especially concerned sizes of consumed servings of food, but also the representation of individual food groups in the diet throughout the day. In this context, the adapted food pyramid can be used as a visual tool to facilitate understanding and the maintenance of a healthy diet.

## KEYWORDS

nutrition; dietary habits; people with special needs; spinal cord injury

## DOI

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## INTRODUCTION

During the last few decades, the incidence of traumatic spinal cord injuries (SCI) has increased in industrial countries, particularly among young people (Maggioni et al., 2003).

A lesion between T1 and T4 can significantly affect the autonomic control of the cardiovascular system and the sympathetic activity of the overall system (Cowell, Squires, & Raven, 1986). The injury usually results in permanent paralysis of voluntary muscles and loss of sensation below the lesion, which is associated with reduced mobility and functional independence, impairment of social and vocational activities, as well as negative influences on the person's health and well-being (Elliott, 2015). SCI causes a number of metabolic changes, i.e. changes in body composition – muscle atrophy, with a parallel increase in relative body fat mass, disturbances in carbohydrate and fat metabolism, and decrease in resting energy expenditure (REE) (Buchholz, McGillivray, & Pencharz, 2003a; Laven et al., 1989). Without an appropriate adjustment of dietary intake after injury, the energy intake easily exceeds daily energy requirements, which predisposes the affected individuals to weight gain (Buchholz, McGillivray, & Pencharz, 2003b).

Research results have led to the identification of cardiovascular risk factors (low physical activity, hypercholesterolaemia, obesity, smoking, hypertension, insulin resistance), which increase the risk of developing coronary heart disease, and non-insulin-dependent diabetes mellitus, or osteoporosis (Bauman et al., 1999; Kocina, 1997). Obesity occurs frequently in persons with SCI, and may be an important contributing factor in the development of cardiovascular disease (CVD) in this population. Estimates of overweight or obesity range from 40% to 65% of the SCI population vs. 30% of the non-SCI population (Kocina, 1997; Philippi et al., 1999). In addition to medical conditions, obesity has been shown to have profound negative effects on quality of life, self-esteem, body image, and satisfaction with life. Clinical studies have shown that anthropometric measurements such as body mass index (BMI) and waist-to-hip ratio are useful for identifying persons at risk of CVD. However, changes in body composition secondary to long term paralysis make interpretation of these parameters problematic in persons with SCI (Després et al., 1990; Houmard et al., 1991; Jakicic et al., 1993).

Increased levels of stored body fat are the result of a positive energy balance, which occurs when energy intake exceeds energy expenditure (EE). Whereas energy intake is dependent on food ingestion, the major components of EE include resting metabolic rate (RMR), dietary induced thermogenesis, and physical activity. The final major component of EE is physical activity. It is well known that individuals with SCI fall within the lowest spectrum of physical activity (Vissers et al., 2008). A necessary component of any CVD prevention is a healthy diet. This can be especially challenging for persons experiencing body composition changes, low resting metabolic rates, functional impairments, and barriers to healthy living. Predicting energy needs is a key element of the diet prescription for people with SCI, although for several reasons this is a challenging process for the clinical dietitian. The most successful weight management programs are those that incorporate periodic measurement of the body habitus (i.e., weight, body mass index, body fat, waist circumference) along with behavioral support (Feasel & Groah, 2009).

The aim of this study was to analyse the dietary habits of participants with SCI from the Czech population ( $n = 50$ ,  $n_1 = 36$ ,  $n_2 = 14$ ), especially to evaluate differences in the presence and distribution of various food groups among a group of males and females.

## METHODS

### Subjects

This study contained a total amount of 50 sedentary SCI subjects from the Czech population ( $n_1 = 36$  males – 13 tetraplegics with a lesion of segments C5–C8, 13 ‘higher’ paraplegics with a lesion of segments T1–T10 and 10 ‘lower’ paraplegics with a lesion T11–S5;  $n_2 = 14$  females – 11 ‘higher’ paraplegics with a lesion of segments T1–T10 and 3 ‘lower’ paraplegics with a lesion T11–S5) dependent on a manual wheelchair (5 years and more). The average time since injury of subjects was  $9.2 \pm 6.8$  years. This study was approved by the Ethics Committee of the Faculty of Physical Education and Sport, Charles University (reference number 103/2015) and measurements were performed according to the ethical standards of the Helsinki Declaration. The subjects were fully informed in advance regarding the objectives of the study, the study methods involved no risks, and written informed consent was obtained from each subject for participation in this study.

### Methods

Body height (cm) was self-reported. Body weight was measured on a digital scale with a special seat to the nearest 0.1 kg. Body mass index (BMI) ( $\text{kg m}^{-2}$ ) was calculated. The questionnaires and software SURVEY (version 2.95) were used to analyse dietary habits. Each participant completed a frequency questionnaire, which included questions focused on the detection of size of consumed foods and frequency of consumption of various food groups – cereals (bread, rice, pasta, dumplings), potatoes, vegetables, fruits, dairy products (milk, milk drinks, cheese, yogurts, curd), meat (red meat, poultry, fish, eggs, pulses), meat products (smoked meat, pies), fats (butter, skim, high-fat meats), sweets (desserts, wafers, chocolate, jam, honey, sugar). Participants reported how frequently they consumed a defined amount of food groups for individual meals (frequency of ingestion on the scale – several times a day – exceptionally – never).

### Data Analysis

Basic descriptive statistics (mean, median, standard deviation, min – max values) were computed for all variables, which were subsequently tested for normality using Shapiro-Wilk tests. Differences in normally distributed demographic (age) and anthropometric (height, weight, BMI) variables between males and females were evaluated by independent-group t-test. When comparing nutrition habits (serving size) between males and females, the Mann-Whitney test was used, given the ordinal nature of the indicators of nutrition habits. Changes in nutrition habits during the day were assessed separately for males and females by the Friedmann test, followed by a series of Wilcoxon signed ranks tests (breakfast vs. lunch; breakfast vs. dinner; lunch vs. dinner) as a post-hoc comparison, while using a Bonferroni correction. P-values below 0.05 were considered to be statistically significant. The effect size between the means

of the groups was assessed using an index of effect size – ES (Cohen's *d*) using formulae from Cohen (1988) and Rosenthal (1994). This was calculated as the difference of the means of the compared parameters and divided by a 'pooled' standard deviation. The effect size (ES) was assessed as follows: ES < 0.20 (small effect), ES = 0.50 (medium effect), ES > 0.80 (large effect). Statistical analyses were performed using SPSS version 22 (SPSS Inc., Chicago, IL, USA).

## RESULTS

### Anthropometric parameters

A total number of 50 volunteer participants with SCI were evaluated. Average values of basic anthropometric characteristics (body weight, body height, BMI) are shown in Table 1.

**Table 1** Basic anthropometric characteristics of participants with SCI (n = 50, n<sub>1</sub> = 36 males, n<sub>2</sub> = 14 females)

	MALES		FEMALES		p-value <sup>a</sup>	ES*
	mean (SD)	(min – max)	mean (SD)	(min – max)		
Age (years)	32.3 (10.1)	(16.0 – 61.0)	41.4 (16.5)	(17.0 – 64.0)	0.071	<b>0.74</b>
Body weight (kg)	78.2 (12.4)	(55.0 – 115.0)	71.9 (12.0)	(57.0 – 92.0)	0.106	<b>0.51</b>
Body height (cm)	182.3 (6.9)	(165.0 – 197.0)	169.3 (5.9)	(160.0 – 179.0)	<b>&lt;0.001</b>	<b>1.96</b>
BMI (kg m <sup>-2</sup> )	23.6 (4.1)	(17.0 – 35.5)	25.3 (5.0)	(17.8 – 33.2)	0.284	0.39

Note: SD – standard deviation; p-value<sup>a</sup> – between-group differences tested by independent-group t-test; ES\* – effect size of the between-group differences measured by Cohen's *d*, medium and large effects are in bold

Anthropometric parameters of males and females were evaluated and compared. Significant difference was evaluated only at values of body height (cm) between groups of males and females (p < 0.001, ES = 1.96). Differences in age values (ES = 0.74), body weight (ES = 0.51) and BMI (ES = 0.39) were statistically insignificant. The average value of BMI (23.6 ± 4.1 kg m<sup>-2</sup>) of males was at the recommended range for optimal body weight in the normal adult population (BMI = 18.5 – 24.9 kg m<sup>-2</sup>, WHO, 2015), and the average value of BMI at females was (25.3 ± 5.0 kg m<sup>-2</sup>), above the upper limit for assessing optimal body weight.

### Dietary habits

A questionnaire survey is primarily able to help us to determine the quantity of consumed servings and ingestion frequency of individual food groups (Table 2). The following analysis of questionnaires by software SURVEY (version 2.95) allows the evaluation of dietary habits in the form of a dietary pyramid (Fig. 1, Fig. 2).

Size of consumed servings of individual food groups was different between males and females. Male subjects consumed larger servings of individual food groups on average than female subjects. Significant differences were found in size of consumed servings of cereals (p < 0.05, ES = 0.67) and fats (p < 0.05, ES = 0.62) (Table 2).

**Table 2** Size of individual food groups

	MALES		FEMALES		p-value <sup>b</sup>	ES*
	mean (SD)	median (min – max)	mean (SD)	median (min – max)		
Cereals	1.6 (0.8)	1.3 (0.5 – 4)	1.1 (0.4)	1 (0.5 – 2)	<b>0.024</b>	<b>0.67</b>
Potatoes	1.3 (0.7)	1 (0.5 – 3)	1.0 (0.5)	1 (0.5 – 2)	0.148	0.42
Vegetables	1.3 (0.7)	1 (0.5 – 4)	1.1 (0.3)	1 (0.5 – 2)	0.655	0.13
Fruits	1.3 (0.5)	1 (0.5 – 3)	1.2 (0.4)	1 (1 – 2)	0.694	0.11
Dairy products	1.2 (0.5)	1 (0.5 – 3)	1.1 (0.4)	1 (0.5 – 2)	0.646	0.13
Meat	1.5 (0.7)	1.5 (0.5 – 3)	1.2 (0.5)	1 (0.5 – 2)	0.078	0.51
Meat products	1.0 (0.4)	1 (0.5 – 2)	0.9 (0.4)	1 (0.5 – 2)	0.445	0.22
Fats	0.9 (0.4)	1 (0.5 – 2)	0.7 (0.3)	0.5 (0.5 – 1)	<b>0.035</b>	<b>0.62</b>
Sweets	1.2 (0.7)	1 (0.5 – 3)	1.0 (0.6)	1 (0.5 – 2)	0.543	0.17

Note: SD – standard deviation; serving size – 0.5 = half, 1 = standard serving, 1.5 = 1.5 times larger, 2 = 2 times larger, 3 = 3 times larger, 4 = 4 times larger; p-value<sup>b</sup> – between-group differences tested by Mann-Whitney test; ES\* – effect size of the between-group differences measured by Cohen’s d, medium and large effects are in bold

**Table 3** Ingestion frequency of individual food groups during the day

		MALES			FEMALES			p-value <sup>b</sup>	ES*
		mean (SD)	median (min – max)	p-value <sup>w</sup>	mean (SD)	median (min – max)	p-value <sup>w</sup>		
Cereals	breakfast	5.9 (1.6)	6 (1 – 7)	<b>p<sup>bl</sup> = 0.001</b>	5.1 (2.4)	6 (1 – 7)	<b>p<sup>bl</sup> = 0.413</b>	0.473	0.20
	lunch	4.9 (1.1)	5 (2 – 7)	<b>p<sup>ld</sup> = 0.382</b>	4.5 (1.3)	5 (1 – 6)	<b>p<sup>ld</sup> = 0.355</b>	0.322	0.28
	dinner	5.1 (1.4)	5 (2 – 7)	<b>p<sup>bd</sup> = 0.006</b>	5.0 (2.1)	5 (1 – 7)	<b>p<sup>bd</sup> = 0.496</b>	0.813	0.07
	snacks	3.2 (2.3)	3 (1 – 8)		3.4 (2.6)	3 (1 – 8)		0.946	0.02
Potatoes	breakfast	1.3 (0.9)	1 (1 – 5)	<b>p<sup>bl</sup> &lt; 0.001</b>	1.0 (0.1)	1 (1 – 1)	<b>p<sup>bl</sup> = 0.003</b>	0.270	0.32
	lunch	4.1 (0.8)	4 (2 – 5)	<b>p<sup>ld</sup> &lt; 0.001</b>	3.4 (1.7)	4 (1 – 5)	<b>p<sup>ld</sup> = 0.008</b>	0.329	0.28
	dinner	3.2 (1.3)	3.5 (1 – 5)	<b>p<sup>bd</sup> &lt; 0.001</b>	2.6 (1.6)	3 (1 – 5)	<b>p<sup>bd</sup> = 0.008</b>	0.312	0.29
	snacks	1.3 (0.9)	1 (1 – 5)		1.0 (0.1)	1 (1 – 1)		0.198	0.37
Vegetables	breakfast	2.0 (1.4)	1 (1 – 5)	<b>p<sup>bl</sup> &lt; 0.001</b>	1.6 (1.2)	1 (1 – 4)	<b>p<sup>bl</sup> = 0.001</b>	0.385	0.25
	lunch	4.0 (1.5)	4 (1 – 7)	<b>p<sup>ld</sup> = 0.718</b>	4.9 (1.5)	5 (2 – 7)	<b>p<sup>ld</sup> = 0.951</b>	0.056	<b>0.56</b>
	dinner	4.1 (1.8)	4 (1 – 7)	<b>p<sup>bd</sup> &lt; 0.001</b>	4.9 (1.5)	5 (1 – 7)	<b>p<sup>bd</sup> = 0.002</b>	0.111	0.46
	snacks	3.3 (2.2)	4 (1 – 8)		3.9 (2.4)	4 (1 – 7)		0.351	0.27
Fruits	breakfast	3.1 (1.9)	3 (1 – 7)	<b>p<sup>bl</sup> = 0.520</b>	3.9 (2.3)	4 (1 – 7)	<b>p<sup>bl</sup> = 0.024</b>	0.264	0.32
	lunch	2.8 (1.6)	3 (1 – 7)	<b>p<sup>ld</sup> = 0.006</b>	2.4 (2.1)	1 (1 – 7)	<b>p<sup>ld</sup> = 0.043</b>	0.183	0.38
	dinner	3.4 (1.7)	4 (1 – 7)	<b>p<sup>bd</sup> = 0.214</b>	3.6 (2.1)	4 (1 – 7)	<b>p<sup>bd</sup> = 0.682</b>	0.689	0.11
	snacks	4.8 (2.4)	5 (1 – 8)		6.1 (1.8)	7 (2 – 8)		0.111	0.46

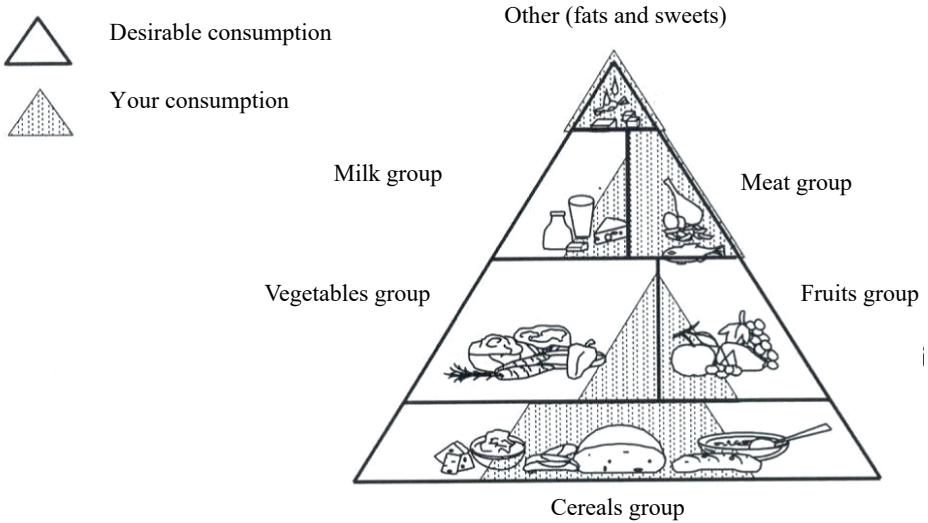
Dairy products	breakfast	4.3 (1.9)	5 (1–7)	$p^{bl} < 0.001$	3.8 (2.2)	4 (1–7)	$p^{bl} = 0.003$	0.474	0.20
	lunch	2.2 (1.3)	2 (1–5)	$p^{ld} < 0.001$	1.5 (1.1)	1 (1–4)	$p^{ld} = 0.125$	0.052	<b>0.57</b>
	dinner	3.7 (1.5)	4 (1–7)	$p^{bd} = 0.078$	2.4 (1.5)	1.5 (1–5)	$p^{bd} = 0.071$	<b>0.012</b>	<b>0.76</b>
	snacks	3.3 (2.3)	4 (1–7)		4.1 (2.6)	4.5 (1–8)		0.221	0.35
Meat	breakfast	2.7 (1.8)	2.5 (1–6)	$p^{bl} < 0.001$	1.6 (1.3)	1 (1–5)	$p^{bl} = 0.001$	<b>0.026</b>	<b>0.67</b>
	lunch	5.4 (1.2)	5 (2–7)	$p^{ld} < 0.001$	5.3 (1.2)	5 (4–7)	$p^{ld} = 0.007$	0.822	0.08
	dinner	4.1 (1.4)	4 (1–7)	$p^{bd} = 0.001$	3.8 (1.5)	4 (1–6)	$p^{bd} = 0.004$	0.591	0.15
	snacks	1.8 (1.1)	1 (1–4)		1.3 (0.8)	1 (1–4)		0.102	0.48
Meat products	breakfast	2.9 (1.8)	3 (1–7)	$p^{bl} = 0.059$	2.3 (2.3)	1 (1–7)	$p^{bl} = 0.681$	0.102	0.47
	lunch	2.2 (1.4)	2 (1–5)	$p^{ld} = 0.001$	1.9 (1.4)	1.5 (1–6)	$p^{ld} = 0.073$	0.337	0.27
	dinner	3.3 (1.4)	4 (1–6)	$p^{bd} = 0.152$	3.0 (1.9)	2.5 (1–6)	$p^{bd} = 0.117$	0.667	0.12
	snacks	1.9 (1.4)	1 (1–6)		1.6 (1.4)	1 (1–5)		0.324	0.28
Fats	breakfast	5.1 (1.4)	2.5 (1–7)	$p^{bl} = 0.320$	2.9 (2.4)	1.5 (1–7)	$p^{bl} = 0.776$	0.589	0.15
	lunch	2.9 (2.0)	2 (1–7)	$p^{ld} = 0.707$	2.8 (2.4)	2 (1–7)	$p^{ld} = 0.414$	0.824	0.06
	dinner	3.0 (2.0)	2.5 (1–7)	$p^{bd} = 0.554$	3.1 (2.5)	2 (1–7)	$p^{bd} = 0.595$	0.929	0.03
	snacks	2.3 (1.9)	1 (1–7)		1.0 (0.1)	1 (1–1)		<b>0.003</b>	<b>0.91</b>
Sweets	breakfast	2.7 (1.7)	2 (1–7)	$p^{bl} = 0.021$	2.4 (1.4)	2 (1–4)	$p^{bl} = 0.184$	0.472	0.20
	lunch	2.0 (1.3)	2 (1–7)	$p^{ld} = 0.414$	1.8 (0.8)	2 (1–3)	$p^{ld} = 0.020$	0.899	0.04
	dinner	2.2 (1.5)	1.5 (1–6)	$p^{bd} = 0.172$	1.3 (0.5)	1 (1–2)	$p^{bd} = 0.026$	0.056	<b>0.56</b>
	snacks	2.6 (2.1)	2 (1–9)		3.2 (1.5)	4 (1–5)		0.121	0.45

Note: SD – standard deviation; the frequency of intake of individual food groups – 1 = less than once a month, 2 = 1–2 times per month, 3 = 3–4 times per month, 4 = 1–2 times per week, 5 = 3–4 times per week, 6 = 5–6 times per week, 7 = once a day, 8 = 2 times per day, 9 = 3+ times per day;  $p$ -value<sup>w</sup> – within-group differences tested by Wilcoxon test with Bonferroni correction;  $p^{bl}$  –  $p$ -value of the difference between breakfast and lunch;  $p^{ld}$  –  $p$ -value of the difference between lunch and dinner;  $p^{bd}$  –  $p$ -value of the difference between breakfast and dinner;  $p$ -value<sup>b</sup> – between-group differences tested by Mann-Whitney test; ES\* – effect size of the between-group differences measured by Cohen's  $d$ , medium and large effects are in bold

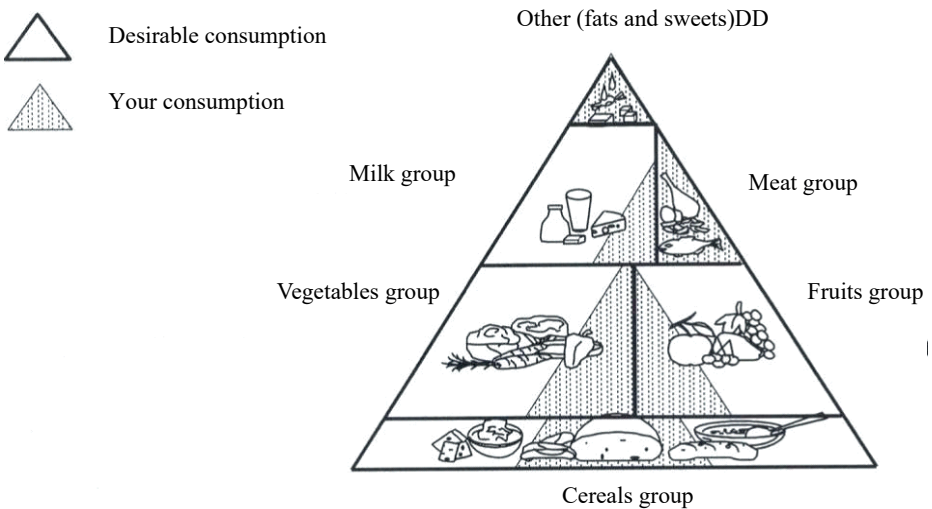
Table 3 shows conclusive differences between males and females in ingestion frequency and representation of individual food groups. Regarding individual meal composition, we noted significant differences in the composition of breakfast (meat intake –  $p < 0.05$ , ES = 0.67), lunch (vegetable intake –  $p = 0.056$ , ES = 0.56; dairy intake –  $p = 0.052$ , ES = 0.57), dinner (dairy intake –  $p < 0.05$ , ES = 0.76; sweet intake –  $p = 0.056$ , ES = 0.56), and snacks (fats intake –  $p < 0.05$ , ES = 0.91) in males and females.

Significant changes were found between individual meals of males and females during the day. We found significant changes in amount of cereals ( $p^{bl} = 0.001$ ,  $p^{bd} = 0.006$ ), potatoes ( $p^{bl} < 0.001$ ,  $p^{ld} < 0.001$ ,  $p^{bd} < 0.001$ ), vegetables ( $p^{bl} < 0.001$ ,  $p^{bd} < 0.001$ ), fruits ( $p^{ld} = 0.006$ ), dairy products ( $p^{bl} < 0.001$ ,  $p^{ld} < 0.001$ ), meat ( $p^{bl} < 0.001$ ,  $p^{ld} < 0.001$ ,  $p^{bd} = 0.001$ ), and meat products ( $p^{ld} = 0.001$ ) in males. We noted significant changes in amount of potatoes ( $p^{bl} = 0.003$ ,  $p^{bd} = 0.008$ ,  $p^{bd} = 0.008$ ), vegetables ( $p^{bl} = 0.001$ ,  $p^{bd} = 0.002$ ), dairy products ( $p^{bl} = 0.003$ ), and meat ( $p^{bl} = 0.001$ ,  $p^{ld} = 0.007$ ,  $p^{bd} = 0.004$ ) in females.

The food pyramid expresses the principles of an everyday well-balanced diet. The pyramid chart compares graphically the 'ideal' (desirable) and actual consumption of different food groups. The average dietary pyramid of males and females is shown in Fig. 1 and Fig. 2. There are evident differences in the average representation of cereals, fruit, vegetables and other foods (fats, sweets) between males and females.



**Figure 1** The food pyramid (software SURVEY) – Evaluation of dietary habits of males with SCI ( $n_1 = 36$ )



**Figure 2** The food pyramid (software SURVEY) – Evaluation of dietary habits of females with SCI ( $n_2 = 14$ )

## DISCUSSION AND CONCLUSION

It has been reported that the annual incidence of SCI varies between 11.5 and 57.8 cases per million people in different countries (Ackery, Tator, & Krassioukov, 2004). This happens usually in the population between 20–40 years of age. Most of these patients return home and, sometimes thanks to progressive possibilities of job opportunities, they may return to work as well. Sensomotor and autonomic function disorder causes changes within body composition, with impaired processing and storage of virtually all nutrients. A significantly reduced level of basal metabolism, together with low physical activity, causes positive energetic balance, with a risk of obesity and metabolic syndrome development (Kriz, Hlinkova, & Slaby, 2014). Therefore it is necessary to approach the problem of obesity, which is one of the risk factors of atherosclerosis, CVD, diabetes mellitus and other civilization diseases, with full knowledge of the possible arising complications (Buchholz, McGillivray, & Pencharz, 2003; Spungen et al., 2003).

Nutritional information about the SCI population is a very important and challenging issue (Perret & Stoffel-Kurt, 2011). The most common reason for poor dietary habits is a lack of knowledge of the proper principles of nutrition (Kriz, Hlinkova, & Slaby, 2014). Monroe et al. (1998) show that the average daily dietary needs of people with SCI are individually modified. Moreover, the nutrition of patients with SCI has a major impact on secondary complications such as pressure sores and prolonged wound healing, negative nitrogen balance, digestion problems, reduced immunofunction, and osteoporosis (Bauman & Spungen, 2000).

In fact, the nutritional behavior of participants with SCI has been investigated in several studies so far, but most studies have evaluated total energy intake, balance of macronutrients, intake of fiber, intake of fat, etc. (Levine et al., 1992; Moussavi et al., 2001; Tomey et al., 2005; Groah et al., 2009). In the study of Tomey et al. (2005) analysis of the macronutrient composition of the diet has shown that individuals with SCI typically consume a diet that provides more than 30% of their total daily energy intake from fat. According to the studies of Levine et al. (1992) and Moussavi et al. (2001), consumption of a diet low in fat can help with weight loss because it can be part of a lower caloric density diet, which encourages the consumption of high fiber foods that foster satiety and are compatible with diets advised for overall health. Generally, intake behaviours of people with SCI favor diets high in fat (31.1%–37.9% of kcal), low to normal in carbohydrate intake (4.4%–52.5% kcal) and low in fiber (12.7–14.5 g/day). Also, like the trends observed in the general population, the diet of people with SCI tends to include an excess intake of total and saturated fat and an inadequate intake of fiber, calcium, fruit, and dairy (Levine et al., 1992; Tomey et al., 2005; Groah et al., 2009).

The use of the food pyramid in SCI studies is so infrequent that we have no adequate comparison with our results. However, in our opinion, evaluation of dietary habits according to the principles of the nutritional pyramid could be one possible approach within dietary intervention. The food pyramid expresses the principles of an everyday well-balanced diet. The pyramid chart compares graphically the ‘ideal’ (desirable) and actual consumption of different food groups for the general population (Philippi et al., 1999). Our questionnaire survey has shown differences in the



representation of individual food groups in meals between males and females (Table 2, Table 3), which reflect differences in dietary habits (Fig. 1, Fig. 2). Male subjects consumed larger servings of individual food groups on average than female subjects, and only the size of consumed serving of meat products was the same in males and females (Table 2). The most significant differences ( $p < 0.05$ ) were mainly in the size of consumed servings of cereal and fats.

We found, that food group preference differs between males and females. Males prefer cereals, dairy products and fats for breakfast; vegetables and meat for lunch; cereals, vegetables and meat for dinner; and fruits and dairy products for snacks. Females prefer cereals, fruits and dairy products for breakfast; cereals, vegetables, meat and fats for lunch; vegetables, fruits and meat for dinner; and fruits, dairy products and sweets for snacks. Regarding individual meal composition, we noted significant differences between males and females in the composition of breakfast (meat intake), lunch (vegetable intake, dairy intake), dinner (dairy intake, sweets intake) and snacks (fats intake). We found that females consumed on average more vegetables and fruits than males. Significant differences were found between individual meals of males and females during the day. We found significant differences in amount of cereals, potatoes, vegetables, fruits, dairy products, meat and meat products in males. We noted significant differences in amount of potatoes, vegetables, dairy products and meat in females (Table 3). To link large portion sizes of food to excess energy intake and the increased prevalence of obesity, the effect of portion size on food intake must be established. Unfortunately, these questionnaires and software SURVEY do not calculate individual energy intake.

The fact that dietary habits were different in males and females with SCI in the present study were in accordance with the result of similar nutritional studies in SCI subjects (Moussavi et al., 2001; Walters et al., 2009). From the available studies, we can draw some recommendations. According to the study of Feasel & Groah (2009) an important factor for persons with SCI is reducing reliance on convenience foods, which tend to be high in calories, fat and sodium. This may be more difficult for some people with SCI, as limited mobility favors reliance on convenience and fast foods over cooking meals at home. Another recommendation for people with SCI is to reduce the portion sizes. General principles of the nutritional plan include consuming more of the following foods: dark green vegetables (string beans, broccoli, spinach, cauliflower, cabbage, Chinese cabbage), orange vegetables (carrots, pumpkins), legumes (lens, peas, lima beans), fruits, whole grains, and low-fat milk and milk products. Conversely, the following foods should be limited: refined grains, total fats (especially cholesterol, saturated, and trans fats), added sugars, and calories (Folsom, Parker, & Harnack, 2007).

It is highly recommended that nutrition assessment should be performed during acute, sub-acute and chronic phases of rehabilitation after SCI. Each of these phases should have a set of nutritional goals that address the adaptations in body composition, metabolism and lifestyle after SCI. The need to monitor caloric intake based on the measured basal metabolic rate is an advisable strategy to reduce the burden of obesity (Levine et al., 1992).

In conclusion, the data from the present study show significant differences in dietary habits (sizes of consumed servings of food, and the representation of individual

food groups in the diet throughout the day) of males and females with SCI. When we evaluate eating habits, it is very important to adopt an individual approach to each client.

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# The psychological influences on participation in Wheelchair Rugby: a social relational model of disability

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## ABSTRACT

Sport and exercise psychology research in disability sport seldom engages with social models of disability. As a result, the socio-historical landscape of disability is underrepresented in sport psychology research. The aim of this study is to interpret influences on participation in disability sport through the conceptual lens of the social relational model (SRM) of disability (Thomas, 1999, 2004, 2007). Ten Irish adult male athletes with physical disabilities participated in semi-structured interviews exploring the barriers and facilitators that influence participation in Wheelchair Rugby. Deductive thematic analysis produced four themes influenced by the social relational model: impairment effects; societal attitudes and discourse; opportunities and access; and psychological well-being. Links were made to the experience of embodied impairment, classification, oppression, inequality, media, independence, and self-efficacy. The analysis illustrates how cultural constructions of disability are inextricably linked to individual influences on participation in Wheelchair Rugby. The results indicate that in disability sport participation, the experience of social oppression, inequality and cultural stereotypes of disability can be synonymous with the personal experience of physical impairment. The implication of this research is that there is a value in sport and exercise psychology practitioners utilising the social relational model as a tool to conceptualise the lived experience of physical disability.

## KEYWORDS

disability studies; spinal cord injury; disability sport; psycho-emotional oppression; para-sport

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## INTRODUCTION

Disability sport is becoming increasingly popular. For example, the Paralympic Games is now the second largest multi-sport event on earth (Brittain, 2016). Nevertheless, participation by people with physical disabilities in sport in local communities is less frequent than in the general population. For example, in Northern Ireland, 26% of adults without disabilities are members of sports clubs compared to 13% of adults with disabilities (Department of Culture, Art and Leisure Northern Ireland, 2015). Common individual and societal factors that influence participation in disability sport have been identified. Common barriers to participation are the disability itself, lack of accessible facilities, and societal attitudes towards those with a disability (Jaarsma, Dijkstra, Geertzen, & Dekker, 2014). Common facilitators are improved physical health, increased social connections, and increased opportunities to get involved in sport (Jaarsma, Dekker, Geertzen, & Dijkstra, 2016). However, there remain gaps in understanding the psychology of participation (Smith, Perrier, & Martin, 2016), this may in part be due to studies with survey designs that often combine sports and/or disabilities and use measures that lack psychometric reliability (Jaarsma et al., 2014). Therefore, according to some researchers, there is a need for more qualitative designs in research to understand context and unpick the meaning of factors that influence participation in disability sport (Williams, Smith, & Papatomas, 2014; Smith, Perrier, & Martin, 2016).

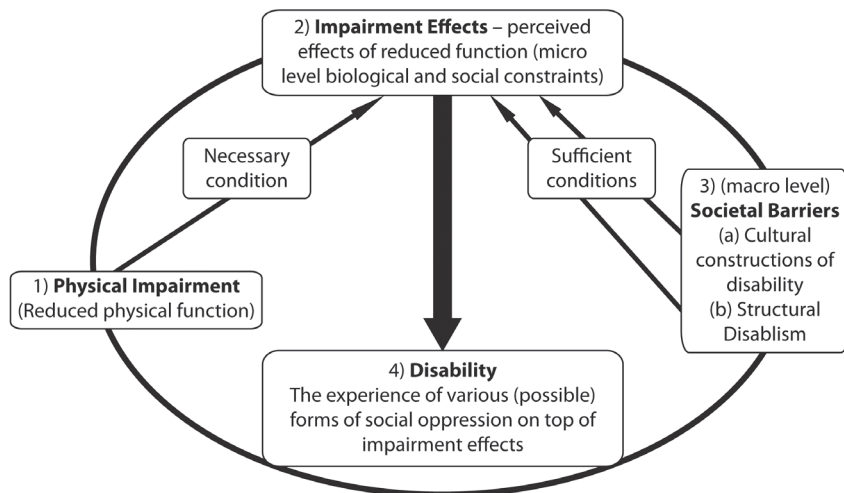
Another gap in the psychological knowledge of participation is that few researchers have used evidenced based theory to add context to their results. However, some researchers have begun to address this by incorporating behaviour change theories to interpret their findings. One example is Martin (2008) who used social cognitive theory (Bandura, 1986) to show that self-efficacy is positively correlated with enjoyment and commitment in Wheelchair Basketball. In a more recent example, Jaarsma et al. (2016) related their findings to the theory of planned behaviour (Ajzen & Madden, 1986) and argued that people who participate in sport after rehabilitation perceive more benefits (e.g. fun) than barriers (e.g. pain). The authors went on to suggest the importance of developing positive attitudes towards participation in sport. With the inclusion of a theory, this demonstrates a progressive theoretical avenue, as linking such influences to established cognitive constructs (e.g. attitudes, motivation, self-efficacy) can guide strategies to promote participation (Smith & Perrier, 2015). Although not all researchers share this view, and have argued that behaviour change theories have limitations in disability sport research (e.g., Martin, 2013; Smith & Perrier, 2015; Smith, Perrier, & Martin, 2016). Smith and Perrier (2015), for example, suggest that reducing people to universal cognitive processes neglects the important socio-cultural and relational dimensions that shape the lives of people with physical disabilities. They reason that the field of disability studies is concerned with understanding the individual and the social dimensions of disability and thus offers an alternative theoretical perspective (Martin, 2013; Smith & Perrier, 2015). In spite of these arguments, sport and exercise psychology research rarely acknowledges or incorporates models of disability (Smith, Perrier, & Martin, 2016). Therefore, this study intends to address this knowledge gap.

There are two conventional and influential models of disability; the medical model and the social model. In the medical model (also known as the individual model),

disability is a problem of reduced physical function and the solution is individual treatment (e.g. personal therapy, medical treatment) (Bury, 2001). This approach has been heavily criticised for painting a negative picture of disability; for example, implying that some individual's bodies are 'normal' while others are 'abnormal' (Reindal, 2010). Smith and Perrier (2015) argue that sport and exercise psychology research, that promotes disability sport for individual health, can either knowingly or unknowingly be framed in a medical model of disability. In the social model (Oliver, 2004), society causes disability through social oppression. The 'solution' is to challenge negative attitudes and breakdown restrictive environmental barriers (Shakespeare & Watson, 2001). The implication of the social model has been liberating for people with physical disabilities, as the 'problem of disability' is viewed as socially constructed and lies outside of the individual (Reindal, 2010). Through the lens of the social model of disability, Brittain (2004) demonstrated how the media has helped to construct a 'medical model' discourse in para-sport. For example, paralympic athletes in his study reported that their sports are often perceived by the general public as a form of rehabilitation. However, and importantly, both of these models are problematic for psychological research as they each undervalue important experiences of disability (i.e. the experience of social oppression or the experience physical impairment) (Smith & Perrier, 2015).

The social relational model (SRM) of disability (Thomas, 1999, 2004, 2007) is a conceptually progressive model that explains disability as the experience of socialised impairment. This conceptualisation can overcome the limitations of previous models by recognising that impairments have direct and immediate effects (e.g. reduced function, physical weakness) and that, at the same time, socially-engendered restrictions can arise in different forms (e.g. structural and attitudinal) (Goodley, 2013). Thomas (2007) calls these the psycho-emotional dimensions of disability. By privileging disability as an experience of restrictions the SRM can help to understand the interplay of individual and societal influences on participation in disability sport (Martin, 2013). In the SRM, the concepts of impairment and disability are manifestations of social relationships, produced as people engage in social structure (order) and social agency (action) (Thomas, 2004). Reduced physical function is a necessary condition for the possibility of various forms of social oppression (e.g. cultural assumptions of disability) that can arise at different times and in different places for different people (Goodley, 2013) (see Figure 1).

In the SRM, four social contexts are identified where the experience of disability can arise (Goodley, 2013; Thomas, 2004). Restrictions can arise from the immediate everyday physical and social influence of physical impairment (e.g. chronic pain or the need for time and social support). Thomas (2004) calls these impairment effects (see Figure 1, Point 2). Restrictions can also arise directly from negative experiences of cultural constructions of disability (see Figure 1, Point 3 (b)) (e.g. having to deal with negative societal attitudes and discourse, such as being perceived as unfortunate). These types of negative interactions fall under the concept of direct psycho-emotional oppression. Furthermore, restrictions can arise indirectly from the experience of structural disablism (see Figure 1, Point 3 (b)). That is, being excluded from opportunities and services (e.g. the anger and frustration of inaccessible buildings). These negative interactions with the structural environment are examples of indirect psycho-emotional oppression. Finally, restrictions can be self imposed if psycho-emo-



**Figure 1** Impairment in context: A Social Relational Model of disability (Thomas, 1999, 2004, 2007); adapted from Reindal (2008)

tional well-being is undermined (Thomas, 2004). Repeated exposure to negative interactions with the social and built environment can result in people placing limits on what they can do and what they can become (e.g. avoid participation in sport). For example, confidence and self-esteem can be damaged as a result of internalising negative cultural stereotypes of disability (e.g. passive, weak or dependent).

The SRM is not a psychological model, it has been developed through sociological research (Thomas, 1999). And the psychological constructs of the SRM (e.g. psycho-emotional oppression) have little empirical evidence in disability sport (Smith & Perrier, 2015). However, Martin (2013) has used the SRM to exemplify some of the paradoxes and nuances in psychological research into barriers to participation in disability sport. In a review of selected articles on barriers to participation, he argued that physical, social and environmental barriers are inextricably linked. For example, the ‘barrier’ of a person in a wheelchair unable to get up a ramp can be located simultaneously in the individual (I don’t have the strength), the social (I don’t have the help), or the environmental (the ramp is badly designed) (Martin, 2013). Furthermore, the SRM has been utilised to develop psychological knowledge in areas outside sport; for example, as a theoretical framework that accounts for individual differences as well as the experience of oppression in special needs education (Reindal, 2008). In another example, the SRM has been used to offer an alternative way of conceptualising Parkinson’s Disease, by showing how stigmatising attitudes have contributed to the experience of physical restrictions (Simpson, McMillan, & Reeve, 2013).

As of yet, no study has applied the SRM to investigate the psychology of participation in disability sport. The aim of this study is to interpret participation in Wheelchair Rugby through the conceptual lens of the SRM. The context of Wheelchair Rugby was chosen as, in Ireland, the sport has low participation levels (e.g. 38 players). The objective of the study was to explore the interplay of individual and societal facilitators and barriers to participation in Wheelchair Rugby.

## METHOD

This study employed a qualitative research approach using one-to-one semi-structured interviews with Wheelchair Rugby athletes. To reflect the idiosyncratic nature of this methodology and a conceptual framework that foregrounds the influence of social relationships, a relativist ontology and constructionist epistemology was adopted. This involves an assumption of reality as mind-dependent and that the path to knowledge is similarly subjective and value-laden (Smith & Caddick, 2012). These assumptions inform an interpretivist paradigm where researchers attempt to make meaning of human experience through interaction with participants.

### Ethics Statement

Ethical approval was granted from the lead institution (Ulster University, School of Sport Research Ethics Filter Committee) on 8th Jun 16 (Ref- MSc186 2015/16). All participants provided written informed consent.

### Participants

Wheelchair Rugby athletes were recruited as they have personal experience and opinions on the individual and societal influences on participation. Wheelchair Rugby is a mixed-gender sport played in over 40 countries for people with physical impairments that affect the arms and the legs ([www.iwrf.com](http://www.iwrf.com)). The goal was to involve the maximum variation in experiences and opinions of active athletes. Criteria for inclusion were (1) one-year post injury (2) aged over 18 years and (3) actively engaged in Wheelchair Rugby (30 minutes at least twice a week). At the time of this research, within Ireland, there were 38 athletes in four clubs ([www.irishwheelchairrugby.com](http://www.irishwheelchairrugby.com)). Ten male athletes from three clubs took part in this study ( $M_{age} = 33.1$  years, age range: 22–53 years). Nine participants in this study had spinal cord injury and eight athletes described themselves as having an acquired disability. Six participants disclosed that they had played sport prior to injury. Participants had played Wheelchair Rugby from between 1.5–19 years and seven had played at an International level. The participant pool represented every Wheelchair Rugby classification group between 0.5 (lowest function) and 3.5 (highest function).

### Data Collection

Data was collected through face-to-face interviews with the aim of capturing the experience and opinions of participants in wheelchair rugby participation. A semi-structured interview guide was developed based on the components of the SRM (Thomas, 2004). For example, questions addressed the influence of immediate effects of impairment (e.g. how do you think that different impairments restrict participation?), cultural representations of disability (e.g. do stigmatising attitudes affect participation in Wheelchair Rugby?) and the structural environment (e.g. how does access to sport facilities influence participation?). Questions were designed to allow topics to be explored in a variety of ways while ensuring that systematic lines of inquiry were followed with each interview. The interview guide was pilot-tested with an academic researcher and an active female Wheelchair Rugby player. After each test the guide was adapted and improved in order to be able to best capture interviewees' meanings.



For example, the specific words ‘barriers’ and ‘facilitators’ were found to be confusing and consequently removed from all questions. The final version of the interview guide was applied to all interviews (see Appendix A).

Participants were identified via purposeful sampling and recruited by the primary researcher who works in a voluntary capacity with Irish Wheelchair Rugby. The primary researcher is not a wheelchair user and has experience using qualitative research methodologies with visually impaired athletes. Participants were provided with details of the research project via-email to confirm that they met the criteria for inclusion. Interviews were organised at suitable locations (e.g. wheelchair accessible hotel lobbies) and began with an informal conversation aimed at relaxing the interviewee. Curiosity-driven prompts were used to focus on topics relative to the research aims (e.g. can you give me an example of that experience?). All interviews were recorded (Sony ICD-PX440) and ranged from 30 min to 55 mins (avg 39 mins). Interviews were transcribed verbatim yielding 121 pages of data (single-line spaced). As there was no new experiences or opinions about the research aims after the tenth interview, saturation was deemed to be achieved.

### **Data Analysis**

Deductive thematic analysis was used to interpret and construct themes within the data (Smith & Caddick, 2012). A code book (see Appendix B) was developed based on the research objectives and the four social contexts of the SRM (Thomas, 1999, 2004, 2007; Goodley, 2013; Smith & Perrier 2015; Reindal, 2008). The code book, for example, was used to attend to data related the influences of physical impairment, disability stereotypes, inaccessible environments and psychological factors such as self-esteem or confidence. As the SRM has had little use in disability sport research, several inductive and open codes were added to the code book during preliminary analysis; for example, the experience of positive cultural representations of disability sport or positive social interactions that facilitate participation in Wheelchair Rugby.

Braun and Clarke’s (2006) six phase heuristic was used as a guideline to identify and interpret common themes across the data. The first phase involved ‘data familiarisation’ by re-reading and re-listening to transcripts (initial ideas were noted). In the second phase, the primary researcher systemically coded features of the data across the entire data (using the code book). In the third phase, potential themes were identified and data relevant to each theme were gathered. The fourth phase involved reviewing themes; similar themes were combined and specific themes were divided into new themes. The fifth phase involved defining themes; clear and distinct definitions for each superordinate and all sub-themes themes were generated. Finally, vivid quotes were chosen to exemplify themes and analysis was related back to the research aims and the social relational model. Importantly, this was circular process whereby phases were re-visited several times during analysis. NVIVO software was used to facilitate organisation of the data and to visualise relationships between codes, sub-themes and superordinate themes.

### **Trustworthiness**

Procedures were employed to ensure that accurate and rigorous results were reported. Firstly, participants were provided the opportunity to add, clarify and authenticate their transcripts. One participant clarified a response; all participants indicated their transcripts were accurate. Secondly, to enhance researcher decision making, a re-

flexive journal was used to record ongoing thoughts and ideas throughout the data collection and analysis process. Thirdly, to triangulate the analysis, the primary researcher presented emergent themes to an accredited sport and exercise psychologist and a disability sport researcher to dispute, support or reject. This process resulted in a consensus of themes and sub-themes. Finally, extensive quotations have been used in this report to illustrate participants' meanings (Smith & Caddick, 2012).

## RESULTS AND DISCUSSION

Four superordinate themes emerged (see Table 1). Each superordinate theme was influenced by the four contexts representing the experience of disability as conceptualised by the social relational model (Thomas, 1999, 2004, 2007). Within each superordinate theme, there are a number of sub-themes containing barriers and facilitators that influence participation. To provide insight into participants' experiences, the

**Table 1** Summary of themes

Superordinate Themes	Sub-Themes	Participant Quote	Factors that Influence Participation
Impairment effects	Physical body	"Any bit of strength I got, I got it from Wheelchair Rugby" (John)	secondary health conditions, health benefits
	Needs and requirements	"Some people don't drive, and they don't have money, so then you're dependent on people" (Connor)	time, money, social support, transport
	Classification	"Who are we to pick and choose to play [Wheelchair Rugby]?" (Jack)	eligibility ambiguity
Societal attitudes and discourse	Attitudes of others	"In Ireland [people with spinal cord injury] kind of get locked away in a cupboard" (Brian)	families, medical professionals, teachers, general public
	Media representation	"There's always this kind of 'super human' aspect of [disability sport], which is wrong" (Barry)	facilitating media, misrepresenting media
Opportunities and access	Structural barriers	"There's no gym that's 100% wheelchair friendly" (Connor)	access to rugby, general access
	Perceptions of inequality	"A lot of people say that we are discriminated against. I don't look at it like that at all" (Karl)	funding, minority sport
Psychological well-being	Internalising negative stereotypes	"People struggling to think that wheelchair sports are for them. Not because of others' attitudes but because of their own attitudes" (Karl)	self restrictions, medical model assumptions
	Independence	"I would probably be more independent than a lot of other people who would have the same level of function" (Barry)	incidental learning, sense of community
	The rugby wheelchair	"If you put them in the [rugby] chair they won't get out. You kind of have to experience it" (Rossa)	stress relief, confidence

themes are discussed with supporting quotes. To ensure anonymity, pseudonyms for each participant have been inserted.

### **Impairment Effects**

This theme describes how the immediate day-to-day experience of impairment can influence participation. In terms of the SRM, this reflects the lived (biological and social) experience of impairment (Smith & Perrier, 2015). Participants discussed the influence of the *'Physical body'*, *'Needs and requirements'* and *'Classification'*.

*'Physical body'* refers to how participants characterised the influence of secondary health conditions and physical health benefits. These factors have been found to influence participation in disability sport (Williams et al., 2014). However, little is known as to why and how these factors influence participation in Wheelchair Rugby. A number of athletes explained why health conditions can restrict participation. For some people, physical weakness or 'bowel and bladder' complications can take years to manage. For others, weight gain from post injury inactivity can restrict participation in sport. All athletes emphasised the physical benefits of Wheelchair Rugby. It can improve balance, mobility and arm strength, required to benefit life outside sport; for example, pushing day-chairs, or transferring from car to chair. As one athlete stressed "every bit of strength I got, I think it is from Wheelchair Rugby" (John).

*'Needs and requirements'* reflects the participants' accounts of how individual differences in the need for time, finance, transport and support, can influence participation. Athletes described how there are few Wheelchair Rugby clubs in the country (i.e. there are no clubs in the West of Ireland) and that different impairments can mean different social effects for different people. For example, athletes reported that many people with spinal cord injury are unemployed, those who can't drive often rely on family, and some people rely on carers. Depending of the level of impairment, some people could not work full time and play rugby, whereas others describe themselves as completely 'independent'. Conceptualising the factors 'time', 'finance', 'transport' and 'support' as day-to-day impairment effects is useful. This can allow research to attend to effects of changes at an immediate social level (Reindal, 2008) (Point 2 in Figure 1), that is in contrast to changes at a wider societal level (e.g. social attitudes, social inclusion) (Point 3 in Figure 1). The concept of 'additionality' (Norwich, 2002), borrowed from adapted education research (Reindal, 2008), can help understand individual differences in needs to participate in sport. For example, additional requirements such as technological (e.g. adapted cars), medical (e.g. drugs) or social support (e.g. carers) can be common, shared or unique across a group of people with similar impairments (Reindal, 2008).

*'Classification'* reflects the participants' descriptions of why the eligibility criteria to play Wheelchair Rugby can enhance but also restrict participation. Many participants described how Wheelchair Rugby is the ideal sport for people with tetraplegia (quadriplegia) and that the game suited the level of function that comes with this physical impairment. However, the analysis indicated an ambiguity amongst athletes about who should and who can play Wheelchair Rugby. Some athletes expressed concern for the 'new impairments' entering the game (e.g. amputees); for example, one athlete said: "You see guys walking around and that's sort of, that doesn't seem fair, you know, when it was started for quadriplegics" (Aiden). Another athlete argued

that if the game is to grow: “Who are we to pick and choose [who can play]?” (Jack). One player even expressed concern for prejudice within the sport: “It’s meant to be inclusive, you know, [but] I don’t think it’s fully inclusive” (Simon). Altmann, Hart, van Limbeek and Vanlandewijck (2014) provided evidence for wide scale dissatisfaction about the current classification system in the Wheelchair Rugby community (e.g. 60% of respondents disagreed that eligibility should only be open to people with tetraplegia). However, in their study, vital aspects of athletes’ opinions were missed as they used a questionnaire with dichotomous questions. The finding from the present study adds an athlete narrative to the literature (e.g. descriptions of why eligibility ambiguity can influence participation). This can assist the International Wheelchair Rugby Federation’s aim of developing an evidence-based Wheelchair Rugby classification system (Altmann et al., 2014) that considers the opinions of athletes.

### **Societal attitudes and discourse**

This theme describes the influence of societal attitudes and cultural representations of disability and disability sport on participation. Participants discussed the influence of ‘*Attitudes of others*’ and ‘*Media Representation*’.

‘*Attitudes of others*’ reflects the participants’ descriptions of why societal attitudes can influence participation. Athletes frequently described how patronising and ill-informed remarks from the general public can put people off sport. They spoke of the annoying and unwanted “sympathy card” (Connor) for playing sport. One athlete describes: “There’s always ‘oh aren’t you brilliant, you’re playing [...] isn’t that great, you’re bashing into people’” (Barry). He then goes on to explain:

There’s a general consensus of disability sport as tokenism. Like ‘it’s great that you’re getting out and you’re playing something and you’re doing something’. Whereas that’s not the reason we’re doing it [...] I’ve had a lot of people misunderstand disability sport, in particular Wheelchair Rugby (Barry).

In addition, some athletes spoke of the effects of being mistaken for people with intellectual disabilities; for example:

I don’t know how many times people had turned around and said – ‘are you going to the Special Olympics this year?’ talking about Rio coming up. Nothing against mental disabilities, absolutely not, but that’s fucking jeez, that gets under my skin like (Connor).

Athletes emphasised how these negative interactions are often unintended but can still have effects. One athlete responds to the question; Do you think that discriminatory attitudes or stigmatising attitudes have an effect on participation in Wheelchair Rugby?

It is hard to say like, discrimination to some degree is there, even if it is subconscious. I think like when I am going down the street, people will give me a look or ‘oh do you need help’ and stuff like this, that is not them being mean or that’s not them like purposely trying to discriminate but innocently giving me a look. Or when I say ‘Wheelchair Rugby, I play for Ireland’ and they are ‘oh that’s amazing, that’s inspirational’. I’m not

inspirational, like I play a sport, I have always got the crap, because mine's a physical disability. People have depression, people have family bereavements, people can't see, but because mine is a physical obvious thing you can see. It shouldn't affect how people see my sport (Jack).

Stephens, Neil and Smith (2012) argue that these unhelpful societal attitudes stem from a lack of public awareness of participation in disability sport. In the SRM, direct psycho-emotional oppression (Thomas, 2004) is a form of social oppression that arises directly from negative social interactions between able-bodied and people with disabilities. For example, being repeatedly defined by disability, having to deal with (unintended or intended) hurtful words, or being stared at by others can effect how people view themselves (e.g. inferior). Linking these interactions to a theorised construct is useful, as research can attend to the influence of particular social interactions. For example, athletes in this study spoke of the influence of more personal negative social interactions. They spoke of how overprotective parents, overly cautious medical professionals, and ill-informed school guidance councillors can push people away from sport. In addition, athletes mentioned how positive social interactions can facilitate participation, such as Wheelchair Rugby staff (non-disabled) who can 'deal with' people with physical disabilities.

'*Media representation*' reflects the participants' perceptions of how the media influences participation. All athletes highlighted how the coverage of London Paralympics 2012 has been 'massive' for para sport. One athlete elucidates:

I think after London [2012], GB got a big wave of players. I think so, they got a lot of clubs now, they have a lot of money. But like we got [a player] after London. You know, If you think of it, if you have a disability and you are a young guy and you turn on the TV and there is a guy with the exactly the same disability as you, flying about the place, you know, in front of 10,000 people, you would be crazy not to want to play!! (Jack)

However, in addition, athletes warned of the condescending 'super human' stereotype often used in the media to portray disability sport. The particular concern was how portraying participation in recreational sport as somehow 'inspirational' can influence attitudes of people with and without disabilities. Another athlete explains why:

You know that Guinness Ad that ran there a couple of years ago? The 'life is more', ad? I found it condescending and it just really misrepresented disability sport. If you think of it- so there was one Wheelchair User, and he was playing the sport, and then he had a couple of [non disabled] friends who were joining in. At the end they all stood up and they were being applauded for taking part in disability sport, you know yourself - [...] you don't do it [play sport] to be applauded or to get a pat on the back (Barry).

The Paralympic paradox, according to Purdue and Howe (2012), describes the finding of an apparent contradiction in the para-sport community about the emphasis that 'the disability' should be given in coverage of Paralympic sport. One argument is that

the stigma of ‘otherness’ can be broken down by media portrayals that focus on the sporting aspects of identity; this in turn can encourage participation. The other argument is that participation can be encouraged when people identify with an impairment (Purdue & Howe, 2012). There is evidence that viewing people with disabilities involved in sport can aid in undermining negative disability stereotypes (i.e. frail and dependent) for people without disabilities (Kittson, Gainforth, Edwards, Bolkowy, & Latimer-Cheung, 2013). This theme adds to Shirazipour, Sweet, Perrier, Ginis and Latimer-Cheung’s (2015) argument that there is a need to understand how the status of disability, as portrayed by the media, influences participation (e.g. superhuman qualities or human story characteristics). Interestingly, some athletes in this study described how social media videos are useful for raising awareness as they can show a true representation of the sport.

### **Opportunities and accessibility**

This theme describes the influence of socio-environmental factors on participation. Participants discussed the influence of ‘*Structural barriers*’ and ‘*Perceptions of inequality*’.

‘*Structural barriers*’ reflects the participants’ perceptions of how negative interactions with the built environment can restrict participation. All athletes explained how the lack of opportunities (e.g. few clubs and suitable facilities in the country) is a major frustration. They explained how nearby facilities can attract players by reducing travel costs and the reliance on support. Moreover, athletes described how many inaccessible environments can create exclusion. For example, inaccessible Gaelic football grounds, or being split-up from (non-disabled) friends at Rugby games, can put people off sport. One athlete describes his experience of gyms;

In this country we’re majorly behind on a lot of places [...] the gym I go to is [supposed to be] ‘100% wheelchair friendly’. [but] There’s no gym that’s 100% wheelchair-friendly [...] not one of them knows a thing about wheelchairs and then you’re explaining the whole lot. So that would definitely turn off somebody from going to the gym that say didn’t know much about it themselves even, or that was maybe a bit self conscious and wouldn’t ask for help and would use it (Connor).

Richardson, Smith and Papatomas (2016) have researched barriers to attending gyms for people with physical disabilities and describe this type of negative experience as ‘disabling messages from the physical environment’. In the SRM, this theme is evidence for the influence of indirect psycho-emotional oppression (Thomas, 2004) to participation in Wheelchair Rugby: that is, possible anger, frustration, and feeling lesser value as a result of the repeated experience of Structural Disablism (exclusion from opportunities due to ‘able-bodied’ power) (Goodley, 2013). A recent study identified organizational stressors across 34 competitive sports (e.g. logistics, leadership) (Arnold, Fletcher, & Brown, 2016). However, it failed to include any disability sports. The present study adds ‘the negative experience of inaccessible environments’ as a distinct stressor in Wheelchair Rugby.

‘*Perceptions of inequality*’ reflects participants’ views on the influence that discrimination has on participation. The majority of athletes provided examples of why

they perceived 'able-bodied' sport as getting preferential treatment. Athletes cited perceived inequalities such as high unemployment rates, limited interest from politicians, minimal opportunities for young people, and minimal corporate sponsorship opportunities. One athlete argues:

It's unfair because they are always saying everything is equal, there is no discrimination. But then you try to get funding and its – 'oh no, you are a para-sport, you're not getting funding from us'. It's tough, it's very tough, especially with the cost involved (Brian).

However, in a counter to this view, a few athletes insisted that there was no inequality. They took the view that Wheelchair Rugby is just a relatively new, niche and expensive sport that is fighting for recognition like any other small sport. One athlete explains:

A lot of people say that we are discriminated against. I don't look at it like that at all. It's just numbers. It's about trying to get more people involved. We are a small number. We are a minority sport. You ask the question – should we have more money? It is easy to say – yes, we should – but it is not that simple. There is X amount of money and it has to be spent across bigger organizations with more push and more numbers. I don't look at it in that way. I wouldn't go down the discrimination thing. For example, there are little able-bodied sports out there, judo clubs, who would be treated in the same way (Karl).

This sub-theme is pursuant to the finding by Smith, Bundon and Best (2016) that Paralympic athletes hold different orientations towards advocating change to reduce social inequality. They found that all 36 elite para-athletes in their study were concerned with advocating change within disability sport, such as perceived inequalities between able-bodied sport and disability sports. However, only seven athletes were concerned with challenging inequalities outside sport. For example, one reason is that participants thought that in general people are treated equally in society. Smith, Tomasone, Latimer-Cheung and Martin Ginis (2015) suggest that sharing stories of perceived inequalities can help expand the menu of narrative recourses across a group of athletes with disabilities. This process can facilitate dialogue to improve well-being and tackle inequalities in sport (Smith et al., 2015). However, contrary to this theme, it is important to note that some athletes did not hold any views about inequality.

### **Psychological Well-Being**

The final theme describes the influence of autonomy and self-restrictions on psychological well-being. Participants discussed the influence of '*Internalising negative stereotypes*', '*Independence*' and '*The rugby wheelchair*'.

'*Internalising negative stereotypes*' refers to the participants' descriptions of self-restricting behaviour from internalising different forms of social oppression. Athletes spoke of how people with spinal cord injury often don't leave their homes. They indicated that this could be because they 'feel inferior', or they have lost their social circle, or they are afraid to get injured again. Other reasons for not participating is some people focus time and resources on the often unattainable goal of walking, or that people might not 'lower' themselves to play wheelchair sports. Feelings of low self-worth as

a result of acquired spinal cord injury can restrict participation in sport (Smith, 2013). In the SRM, internalised oppression can result in people placing self-imposed limits on what they can do (Thomas, 2004). Repeated exposure to dominant ‘medical model’ understandings of disability (e.g. unfortunate or defined by impairment) can damage self-esteem (i.e. feeling lesser value) (Goodley, 2013). One athlete quote illustrates how negative cultural attitudes can lead to self-restricting behaviours:

The main one would be depression, especially in people with spinal cord injuries, especially in Ireland, they kind of get locked away in a cupboard. Especially if they are from rural kind of counties, they wouldn’t go out or anything. Especially if they were playing sport before their accident, then they get injured and like – ‘oh, there is no point in me doing sport anymore, I’m never going to be as good as what I was’. Whereas they could be the next world champion for all we know (Brian).

*‘Independence’* reflects participants’ perceptions on why increased autonomy can facilitate participation. All athletes spoke avidly about how involvement in Wheelchair Rugby can contribute to independent lives. Athletes described how people with similar stories fashioned a sense of community and family. Moreover, all athletes emphasised the importance of learning ‘little things’ of each other that can help in daily life. Such as, using day chairs correctly, emptying leg bags, transferring chairs, driving, picking up a bottle of beer and eating. One athlete recounts a story that exemplifies the importance of being around people with similar impairments:

So you get to the hotel and – ‘shit, how am I going to shower?’ And then you realise – ah well, I’ll ask one of the lads, [...] and he said ‘just get into the bath’. And I said ‘how am I going to get into the bath!?’ So then basically he comes, ‘I’ll show you’. I had a look at him getting into the bath, obviously not into the bath naked, but into the bath, [and then I followed] how he done it (Connor).

This theme confirms the finding of Stephens et al. (2012) that incidental learning (learning from others) in disability sport is an important influence in becoming more autonomous in life. Enhancement of autonomy is understood to be an important influence in self-determined motivation to participate in sport (Deci & Ryan, 2000). The common experiences and emotional connections that are found in Wheelchair Rugby can benefit psychological well-being (Goodwin, Johnston, Gustafson, Elliott, Thurmeier, & Kuttai, 2009). This suggests that 1) role models are important in facilitating participation and 2) enhancement stories of empowerment can be used as a narrative recourse to counter fears (e.g. worried parents) and influence participation (Goodwin et al., 2009).

*‘The rugby wheelchair’* reflects the participant’s descriptions of how the experience of the rugby chair can facilitate participation. Quotes from the athletes such as, “once you get into the chair I think you’ve automatically got people” (Aiden) and “If you put them in the chair they won’t get out” (Rossa), describe how the chair is often the trigger to participation. A number of athletes stressed that a sense of empowerment and confidence can be installed in people when they realise that they have the ability to play Wheelchair Rugby, as one player said:



There is that stigma as well with [disability], like, 'oh, I'm in a wheelchair and I can't do anything now – my life is over'. Then they come to sport and they see all the lads bashing each other and they are like, hang on a minute, if they can do that I can do that. Then I think that stigma kind of goes, with that person (Brian).

Moreover, players discussed how playing rugby is great stress relief, for example: "Just the buzz of getting into a rugby chair, pushing the shit out of it and smashing other lads [...] Just where my head goes when I'm playing [Wheelchair Rugby]. You just get into it" (John). Martin (2008) had provided evidence for a relationship between confidence in ability (self-efficacy) and commitment to playing Wheelchair Basketball. Litchke et al. (2012) found that Wheelchair Rugby athletes associate a deep meaning with the 'hard hitting' and 'maximum power' aspects of the sport. They argue these aspects run counter to the conventional disability image (e.g. weak and frail). The finding from the present study fits with ideas from social cognitive theory (Bandura, 1997), by suggesting that the rugby chair can play an important role in the interaction of personal, behavioural and environmental influences on perceived capabilities (self-efficacy). This in turn can influence participation in Wheelchair Rugby.

## SUMMARY

The aim of this research was to interpret the factors that influence participation in disability sport through the conceptual lens of the social relational model of disability (Thomas, 1999, 2004, 2007). The results provide new evidence in support of the SRM as a heuristic to investigate participation in disability sport. By foregrounding disability as an experience of socialised impairment, categorising influences as either individual or societal does not do justice to the lives of people that are simultaneously shaped by restrictions in society and restrictions imposed upon by society. For example, weakness or lack of time can be individual barriers to participation and, at the same time, socially imposed barriers (e.g. limited accessible facilities). Similarly, cultural assumptions about the meaning of physical disability and disability sport can influence how people feel about themselves (e.g. confidence) and behave (e.g. participate in Wheelchair Rugby).

The specific research objective was to explore the interplay of individual and societal barriers and facilitators to participation in Wheelchair Rugby. As described, individual and societal factors that influence participation in Wheelchair Rugby are inextricably linked. Barriers and facilitators come in the form of (1) direct physical and social effects of impairments, such as the experience of secondary health conditions or perceptions of classification, (2) social interactions, such as the experience of cultural attitudes and discourse about disability and disability sport, (3) structural barriers, such as limited sport opportunities and social inequality and finally (4) psychological well-being, such as increased autonomy through involvement in Wheelchair Rugby or the influence of the rugby wheelchair on confidence.

Taken collectively the current findings support some researcher's arguments that disability sport research is at times framed in a medical (or individual) model of disability (Smith & Perrier, 2015). As psychological research often promotes sport for health benefits, barriers to participation are implied as problems to overcome.

And some studies (justifiably) report ‘the disability itself’ or ‘their disability’ as personal barriers to participation in sport (e.g. Jaarsma et al., 2014; Jaarsma et al., 2016). Moreover, research that promotes participation based on cognitivist behaviour change theories, such as self-determination theory (Deci & Ryan, 2000), can imply that there is an individual responsibility to participate in sport. The importance of societal influences (e.g. lived experience of disability) gets undervalued in research (Smith & Perrier, 2015). Detrimentally, those who do not participate can be perceived by some as lacking in individual qualities (e.g. motivation, attitude, self-efficacy) (Smith & Perrier, 2015).

The current study has a number of strengths. It is novel in that it is the first study to use the SRM as a conceptual framework to investigate the psychology of participation in disability sport. The SRM can help psychologists to attend to the effects of contemporary issues in disability sport; such as perceptions of classification, inequality, and media representation. Linking the disciplines of critical disability studies with sport and exercise psychology can help to expand ways of knowing and allow researchers to think differently. For example, by giving weight to the lived experience of disability this approach honours how the experience of reduced function can also enrich lives. Furthermore, this research has been methodologically strengthened by a large sample size, that is 25% of current Wheelchair Rugby athletes in Ireland were interviewed. This study also has limitations. The psychological constructs of the SRM (e.g. psycho-emotional oppression) still lack empirical evidence in the context of sport. That is in contrast to established psychological constructs backed with empirical evidence in sport, such as the constructs ‘autonomy’ or ‘competence’ from self-determination theory (Deci & Ryan, 2000). Although the SRM foregrounds disability as an experience, more weight is given to how negative interactions (social and structural) can damage psychology (e.g. self-esteem and confidence) than to how positive interactions can have psychological benefits. In this sense, a progressive conceptualisation of disability has been favoured over the influence of universally assumed evidence based psychological constructs (e.g. self-efficacy or competence). There was also a methodological weakness. Interpreting data according to the SRM produced an analytical task to separate restrictions in society from restrictions imposed upon by society. This task is particularly challenging using a qualitative methodology. Interpreting a social interaction, for example, as ‘socially engendered discrimination’ can depend on the political orientation of the researcher.

Future studies should be conducted that focus on the intersection of ideas from social models of disability with behaviour change theories (e.g. self determination theory). Researchers should test the SRM as a tool to inform psychology in other areas of disability sport, such as the experience of transitions out of sport or barriers to performance in sport. It would be interesting to compare the influence of cultural representations of disability sport across different disability groups; for example, visually impaired athletes or Boccia athletes with cerebral palsy. To facilitate larger scale quantitative studies, it would be useful to develop a questionnaire to assess SRM in disability sport. This can be achieved by selecting multiple measures representing the four social contexts of the model and subjecting the data to psychometric analysis to determine validity and reliability estimates.

## CONCLUSION

The social landscape of disability and disability sport is changing (Smith & Perrier, 2015). With the change, the SRM can add value to sport and exercise psychology research. The psychological concepts in the SRM have little empirical evidence in sport; nonetheless this conceptualisation offers a forward thinking way of understanding the lived experience of reduced physical function in athletes. The implication of this study is that new evidence is available in support of the SRM as a heuristic to investigate participation in disability sport, and there is research value in further exploring the intersection of the disciplines; sport and exercise psychology and critical disability studies.

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## APPENDIX A – INTERVIEW GUIDE

1. What are the benefits of Wheelchair Rugby?
2. How do you think that different impairments restrict participation?
3. What social factors restrict participation in Wheelchair Rugby?
4. How would you promote the benefits of getting involved in Wheelchair Rugby?
5. What is it like to be around so many others who share your sport?
6. Has Wheelchair Rugby influenced how you see yourself and your capabilities?
7. How do you feel the general public view Wheelchair Rugby?
8. Do you think that para-sport gets treated differently to able bodied sport? How?
9. What personal factors help enable participation in Wheelchair Rugby?
10. What social factors help enable participation in Wheelchair Rugby?
11. How does access to sport facilities influence participation?
12. Are there any other factors that restrict participation in Wheelchair Rugby?
13. Have you ever felt excluded from opportunities in sport due to your impairment?
14. Do stigmatising attitudes affect participation in Wheelchair Rugby?
15. Do you see Wheelchair Rugby as elite sport or rehabilitation?

## APPENDIX B – DEDUCTIVE THEMATIC ANALYSIS – CODE BOOK

Code	Social Relational Model construct	Description of social context (Thomas, 2007; Goodley, 2013; Smith & Perrier 2015)
1	Barrier – Direct social interaction.	The undermining of psycho-emotional well-being directly from negative interactions directly with others (oppression). For example, (1) Being stared at by strangers (2) Hearing oppressive jokes (4) Direct experience of (unintended or intended) hurtful words (5) Being directly defined by disability (6) Direct negativity at the hands of non-disabled people (7) direct over-medicalization.
2	Barrier – Direct experience of attitudes and discourse.	The undermining of psycho-emotional well-being directly from negative experiences of societal attitudes and discourse. Stigmatisation as a result of unhelpful media and cultural representation. (1) Tokenism (2) Viewing sport as rehabilitation (3) Assumptions about para-sport (4) The 'super human' stereotype (5) Being viewed as passive, frail or dependent (6) Being hailed as inspirational for doing recreational sport.
3	Barrier – Indirect; social norms.	The undermining of psycho-emotional well-being due to the experience discriminatory social norms. For example, oppression from being excluded from opportunities. This can arise from social relationships/experiences in areas such as employment, education, transport, housing, health, welfare services and sports organisations.

4	Barrier – Indirect; built environment.	Structural 'disablism' due to power imposed by 'able-bodied' policies. The experience of oppression from the built environment; for example, limited accesses to facilities and services. Oppression arising from policies in areas such as employment, education, transport, housing, health and welfare services, sports organisations.
5	Barrier – internalising negative cultural stereotypes.	The undermining of psycho-emotional well-being as result of internalising (1) Personal Tragedy Discourse (2) Abnormality Discourse (3) being positioned as inferior (4) Defining themselves by disability (5) unfortunate individual (6) placing restrictions on themselves (7) adhering norms about disability.
6	Barrier – impairment (Biological fact).	The direct and immediate restrictions due to impairment, e.g. pain, discomfort, secondary health conditions, fatigue.. If all oppressive attitudes and restrictive barriers were removed these experiences would remain real.
7	Barrier – Impairment effects (Social).	Direct and immediate effects of biological restriction in contemporary society; things that you can't do because of impairment, e.g. transfer into chairs, drive.
8	Facilitator – impairment (social).	The effects of social 'additionality' on physiology and psychology at a micro level. This can be in the form of formal (rehab programmes) or informal (teammates/volunteers) care. For example, the effect of sport on health and strength. Changes at a micro level that promotes participation (Cures, therapy, interventions, physical adjustments, technology).
9	Facilitator – psycho-emotional well-being.	The enhancing of psycho-emotional well-being (self-esteem & confidence).
10	Facilitator – Indirect – changes to structural environment.	Macro level changes in the structural environment due to inclusive policies. For example, increased access to facilities and services (progressive and inclusive policies). From policies in areas such as employment, education, transport, housing, health and welfare services, sports organisations.
11	Facilitator – indirect; changes to social norms.	Changes in social norms resulting in increased opportunities for people with disabilities. This can arise from social relationships/experiences in areas such as employment, education, transport, housing, health, welfare services and sports organisations.
12	Facilitator – Direct; changes to attitudes and discourse.	Changes in societal attitudes and discourse as a result of shifting media and cultural representation. (1) para-sport as sport and not rehabilitation (2) the sport not the person (3) changes in stigmatisation of people with disabilities.
13	Facilitator – Direct; social interaction.	The enhancing of psycho-emotional well-being directly from positive interactions with others. For example, (1) Sports people (3) families (4) positive discourse (5) being defined as an athlete (6) medical staff (8) educational staff.

# The Kladruby Games, the Paralympics, and the pre-history of disability sport

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## ABSTRACT

The place of Dr Ludwig Guttmann in the founding history of the Paralympic Games is universally acknowledged. Briefly stated, Guttmann is credited with the aspiration to improve the dismal prospects of post-war spinal injury patients, and the inspiration of using sports as rehabilitative practices. Given his initiation of the Stoke Mandeville Games in 1948 with a small-scale archery contest between two local teams, he was able to draw a ready parallel between his beginnings and the model of the London Olympic Games, and in a few short years the multi-disability Paralympic Games had been established.

However, there was both an historical context and a co-history to these brief details – there are lessons from both time and place. We must not forget (or fail to acknowledge) some of the pre-history and parallel histories, which we should attempt to recover.

This article presents an account of the development of the Kladruby Games in Czechoslovakia from 1948, which in 2017 celebrate their 100th edition, in order to bring to light some of the hidden history of disability sport. We might be led to speculate on how the Kladruby Games might have developed from these very promising beginnings, had Srdečný received earlier support from the authorities, and the impetus to consider Olympic connections. Such speculations we consider to be fruitless, given the very different conceptions of disability sport at work here. Srdečný's continuing commitment was to seeing the Kladruby Games as an impetus to the rehabilitative and recreational benefits of sport, rather than the contradictions experienced by the Paralympics in balancing elite performance values with its other aims.

## KEYWORDS

Kladruby Games; Paralympics; disability sport; Vojmír Srdečný

## DOI

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## INTRODUCTION

The place of Dr Ludwig Guttman in the founding history of the Paralympic Games is universally acknowledged, and has been described in detail elsewhere (Brittain, 2016). Briefly stated, Guttman is credited with the aspiration to improve the dismal prospects of post-war spinal injury patients, and the inspiration of using sports as rehabilitative practices. Given his initiation of the Stoke Mandeville Games in 1948 with a small-scale archery contest between two local teams, he was able to draw a ready parallel between his beginnings and the model of the London Olympic Games, which were opening at the same time. In a few short years, the International Stoke Mandeville Games were held at Olympic venues in Rome, where, in a private audience, Pope John XXIII called Guttman “the de Coubertin of the paralysed” (Scruton, 1979, p. 55). The 1988 Seoul Paralympic Games was the first to be so called, and after its founding in 1989, the IPC back-dated (and re-named) its first edition to Rome 1960.

Guttman wrote, as early as 1949: “I foresaw the time when this sports event would be truly international and the Stoke Mandeville Games would achieve world fame as the disabled person’s equivalent of the Olympic Games” (Guttman, 1949). However, Guttman called the games of 1949 a “Grand Festival of Paraplegic Sport” (Brittain, 2012, p. 8) which confirms his main interest as focussed on Stoke Mandeville and on patients with spinal cord injury.

“Initially Guttman was adamant the Games would only be open to those with spinal cord injuries and for 16 years (1960–1976) this remained the case” (BPA, 2016). Several of the early editions of the ‘Paralympic Games’ were actually held as editions of the International Stoke Mandeville Games (in 1960, 1968, 1972 and 1984).

In wider discussions of the history of disability sport, an oft-cited example of early provision is that of sport for the deaf (e.g. Depauw & Gavron, 2005, p. 37). The Sports Club for the Deaf was founded in Berlin in 1888, and the First International Silent Games were held in Paris in August 1924, days after the closing ceremonies of the successful VIIth Olympic Games. They were intended as an equivalent of the Olympics designed specifically for deaf athletes, and are claimed as the first officially recognised international games for athletes with a disability (Séguillon, 2002). Now known as the Deaflympics, and sanctioned by the IOC, the games are seen by some as a first step for organised disability sports, and have been held every 4 years since the first games. However, we should note firstly the tendentiousness of treating deafness as a ‘disability’, since many deaf people reject this label (see Ammons & Eickman, 2011); and secondly that organisations of sport for the deaf have maintained independence from the Paralympics.

Nevertheless, since 1976, other disability categories were gradually admitted to the ‘paralympic’ fold, some with long and independent histories, beginning with blind and amputee athletes in Toronto 1976 and athletes with cerebral palsy in Arnhem 1980.

The etymology of the word ‘paralympic’ exhibits a classic semantic shift, following the fault lines identified above, from its early associations with ‘paraplegic’ to its current status as ‘games alongside the Olympics’ (IPC, n.d.). Whilst it is true that, in the early days, when Guttman’s focus was on paraplegic and quadriplegic patients, the games were envisaged as only for spinal cord injury patients. However, this is not



the position of the International Paralympic Committee (IPC), which was set up only in 1989, by which time other categories of disability were already represented at the games. No edition of the games had been named ‘Paralympics’ or ‘Paralympic Games’ until the 1988 Seoul Games (that is, until those from 1960 to 1988 were retrospectively designated and numbered as such). The games were no longer paraplegic games (as had previously been insisted upon by Guttmann), but rather “for the physically handicapped” (Tokyo, 1964), or “for the physically disabled” (Toronto, 1976).

The IPC, then, must have had a more inclusive definition of ‘para-’ in mind than its relation to paraplegia, as evidenced in its aim expressed by IPC CEO Xavier Gonzalez in his presentation of strategic plans for the various sports at the IPC General Assembly in 2013 in the following terms:

Provide a platform for para-athletes to regularly practice and to showcase their ability to their full potential and to reach their sporting pinnacle and dreams (IPC, 2013b).

The use of the word ‘para-athletes’ here (and also, later, the word ‘para-sport’) is clearly intended to indicate that the scope of IPC activity is not limited to paraplegic athletes, and so the meaning envisaged by the IPC, and the one in current employment, clearly relates to the second association of ‘para’, meaning ‘alongside’ or ‘next to’. The Paralympic Games are best seen as ‘parallel with’ the Olympic Games.

As the IPC itself says, on its current website:

The word ‘Paralympic’ derives from the Greek preposition ‘para’ (beside or alongside) and the word ‘Olympic’. Its meaning is that Paralympics are the parallel Games to the Olympics and illustrates how the two movements exist side-by-side (IPC 2016).

Alongside the retrospective naming and numbering of seven editions of the games as Paralympic Games, a simplified ‘Official Story’ has been created whose claims do not always stand examination. The history of the Paralympic Games is a sub-category of the history of disability sport, and whilst it is understandable that Paralympic authorities should concentrate on the former, it should be more careful when making claims about the latter. For example, the archery contest at Stoke Mandeville in 1948 was certainly not “the first recorded competition between disabled athletes” (BPA, 2016). Many examples of pre-existing competitions are given below.

Secondly, wheelchair basketball was not invented at Stoke Mandeville as a development of the ‘netball’ game that was played there, which itself replaced the rather too robust ‘hockey’ or ‘polo’ (see Brittain, 2016, p. 9). Wheelchair basketball was played in the USA from 1944, and by 1948 there was a competitive league of 6 teams. If we are to believe the International Wheelchair Basketball Federation, it was introduced to Stoke Mandeville by the arrival of American players in 1955, and superseded netball:

The Pan Am Jets of USA brought wheelchair basketball to Europe when they were invited to play at the International Stoke Mandeville Games in 1955, initially having to settle for wheelchair netball. After dominating the competition, their performance initiated the switch from wheelchair netball to wheelchair basketball for future Games (<http://iwbf.org/the-game/#game-history>).

Further, there is a rich and almost forgotten pre-Second World War history of disability sport. The Mandeville Legacy website shows photographs of “billiards at the Royal Star and Garter Home, early 1940’s”, which presumably pre-dates Guttman, and of the “First ever wheelchair sports day, 1923”, at which “a group of disabled ex-servicemen competed in a Zig Zag obstacle race in their rather primitive wheelchair tricycles” (Mandeville Legacy, 2014).

Cohen (2001) lists an even earlier event: a “Programme of Sports and Concert to be held August 6th 1917 at 2.30 pm” (Star and Garter Collection, British Red Cross Archive). One can only speculate as to the nature of the sports programme announced, but it is surely evidence of sporting activity in response to the exigencies of the First World War.

Further such evidence is to be found in popular Sports Days in hospitals like Roehampton, which held its first in 1916 (Anderson, 2001, p. 77). Anderson claims that “doctors were quick to make use of games for both their physical and mental recovery” and she gives a number of examples (2001, pp. 78–9): At the Prince of Wales Hospital in Cardiff, a golf course was constructed for amputees, with bunkers, bridges, stiles and gates. Stoolball was revived in 1917 as a game for wounded soldiers, and a tournament was organised which was held at Lords annually until 1927. The British Legion held an Imperial Sports Rally at the newly opened Wembley Stadium on 14 July 1923, and events for disabled ex-servicemen were included, such as a mile walk, a 100-yard race for the blind, and a 250-yard race for single leg amputees.

As Anderson (2008) notes, commenting on Bailey’s (2008) book on the history of the Paralympic movement:

There is a substantial amount of documentary evidence that exists detailing disabled people playing sport prior to the 1940s which is not mentioned. Crowds would turn out in London to watch the blind men of St Dunstan’s, which was a hostel for blind ex-servicemen from the First World War, compete in their Saturday Sports. [...] The One-Armed Golfers Association had their first tournament in 1933 at the Burgess Golfing Society of Edinburgh.

... and in 1934 an international one-armed tournament between Scotland and England took place (Anderson, 2001, p. 79).

Of course, there are also many records of disabled athletes competing against the able-bodied. One early and outstanding example is that of American George Eyser, a single leg amputee who competed in the 1904 Olympics, where he won 6 medals in gymnastics. He was the only prosthesis wearer to compete in the Olympics for 108 years, when Oscar Pistorius was allowed to compete with ‘blades’ (Mackay, 2014).

We adduce the above examples to show that reality is more complicated than can be captured by the ‘Official Story’, and that there was both an historical context and a co-history – there are lessons from both time and place. Whereas we understand that the ‘Official Story’ must be very simplified for its purposes, it does tend to overemphasise certain aspects of the story of the emergence and development of disability sport, whilst forgetting (or failing to acknowledge) some of the pre-history and parallel histories, which we should attempt to recover.

In the next section, to illustrate the above points, we will present an account of the development of an initiative in disability sport in the former Czechoslovakia after the Second World War, in order to bring to light some of the hidden history of disability sport, and to alert us to the fact that there are doubtless similar stories to be unearthed elsewhere.

Firstly, as background, we will present the biography of Vojmír Srdečný, the founder of the Kladruby Games in Czechoslovakia in 1948. The Kladruby Games pre-date the Stoke Mandeville Games, and will this year celebrate their 100th edition. We will also then present a brief history of the development of these Games.

### **Vojmír Srdečný (1919 – present)**

Vojmír Srdečný was born in 1919 in Albrechtice in eastern Bohemia. In 1939 he was admitted to the Institute for Physical Education Teachers in Prague. After only five weeks of study he was arrested on 17 November 1939 by the Gestapo along with many other students, and taken in trucks to be transported to the concentration camp in Sachsenhausen-Oranienburg, north of Berlin. (Later in life, he became a member of the International Sachsenhausen Committee.) That day, 1083 Czech university students entered the gates of the camp.

After one year, one month and one day he was released along with another two hundred students. After returning to Czechoslovakia in December 1940 he worked as a trainee in an insurance company and later did forced labour in a factory in Holice. During the years 1945–1947 he finished his war-interrupted studies in physical education, and on 1 September 1947 he joined the Rehabilitation Institute in Kladruby, which had just opened. Here, he immediately began to organise sports activities for people with amputated upper or lower limbs, and this was very popular amongst the staff. With the support of management he purchased all the equipment required for sporting activities, which became part of comprehensive rehabilitative care in the Department of Physical Education.

However, in the beginning, sports games for disabled athletes were not universally popular amongst patients. Mr. Srdečný recalled a situation when he went through the corridors in the Rehabilitation Institute with athletic equipment and overheard a patient say: “Guys, look out! Here he comes again and he will chase us!” Over time, though, when the games became established, their popularity increased (Seidl, 2016).

Very quickly, within six months, the idea had taken hold, and in April 1948 the first Kladruby Games were organized (Srdečný, 1948, 2001), a multi-event programme for paraplegics and also for those with other disabilities. The first Stoke Mandeville Games, a single event programme for paraplegics only, took place three months later. The Kladruby Games were held again in 1949, but were then interrupted, as Srdečný was sacked from the Institute (as explained below).

In 1949, after five months’ military service in a tank unit, Srdečný was sent to the state spa and sulphur baths in Great Losiny, where for ten years he worked in the polio department. He felt that he was lucky, since the spa did not fall under the Ministry of Health, so he was able to continue with sport and physical activities for the physically disabled. In 1959, the situation at the Ministry changed, and Srdečný returned to Kladruby where, after a ten-year hiatus, he once again began to organise the Kladruby Games. (See Memory of Nations Project, 2000; Paradenik, 2014.)

### **The Kladruby Games in Czechoslovakia, from 1948 to 2017**

The first Kladruby Games lasted 10 days, 15–24 April 1948, with the participation of 82 competitors (Srdečný, 1948, 2001). The games were launched with a fanfare at the arrival of competitors and a solemn speech by the institute director.

Contestants/patients were divided into four groups according to the type and degree of disability:

- Group A – upper limb disability,
- Group B – lower limb disability,
- Group C – lower limb amputation,
- Group D – paraplegia of the lower extremities.

The programme of the games was divided into three parts: sporting, cultural and institutional. In the sports section athletes participated in the following disciplines:

For men – shot put, medicine ball throw, darts, shooting at the basket, swimming, diving, underwater endurance, high jump, long jump, 3 km walking, 1 km running, 3 km cross-country running, table tennis, board game.

For women – medicine ball throw, darts, shooting at the basket, high jump, long jump, table tennis, board game.

In the cultural section were included competitions in music, art, poetry, chess, checkers, recitation and singing. The ‘institutional’ section involved competitions in decency and order in the wards, and attendance at exercise (Beran, 1974; Jarošová, Beran, & Ján, 1996; Srdečný, 1948, 2003).

The first Kladruby Games were a first attempt at the optimal selection of sporting disciplines. Already in the 2nd Kladruby Games of 1949, the selection of disciplines had changed, eliminating the medicine ball throw and underwater endurance, which were replaced with loop-ball throwing, and weightlifting of 13 kg and 25 kg at maximum repetition (Beran, 1974).

The 2nd Kladruby Games took place over 15 days, 9–23 July 1949, with the participation of 95 competitors. The first day of competition began with all patients making a solemn proclamation, in which they were reminded of the true purpose of these games. Compared to the previous year, the sports programme expanded into matches between town and country in fourteen social games and sports, with a final team score of 7–7 (see table 1) (Petlach, 1949).

Despite this very promising start, however, political conditions in Czechoslovakia were not conducive to the development of disability sport in a rehabilitative environment. After the Second World War, the communist regime pushed the handicapped to the edges of society. The Ministry of Health did not approve of sports activities at the Rehabilitation Institute. After the 2nd edition of the Kladruby Games, they were banned by the Ministry of Health in 1949, and the Sectional Director uttered the memorable phrase: “Do not mix sports with rehabilitation.” On the basis of these restrictions the founder of the games was forced into redundancy, as a physical education specialist, and to leave the Kladruby Rehabilitation Institute (Seidl, 2016; Srdečný, 2003, 2017).

**Table 1** Match results, town against country (Petlach, 1949)

	Town	Country		Town	Country
Basketball	11	7	Whisking	2	1
Volleyball	1	2	Skittles	100	175
Tennis	3	2	Russian skittles	174	176
Ping-Pong	5	0	Sitting Handball	1	6
Cowboy	6	0	Foot tennis	2	0
Water polo	1	4	Drifting	7	5
Water rugby	0	2	Board game	1	2

The final scoreboard 7 : 7

After their 2nd edition, the Kladruby Games were interrupted for a full 10 years, until 1959, when the political situation changed. The initiator of the Games, Mr. Srdečný, returned and immediately organized the 3rd Kladruby Games on 1 September 1959. At these games there were notable differences in the competition programme, which now included the triathlon and tetrathlon, small-bore rifle shooting and 3m rope climbing (Beran, 1974; Srdečný, 2001). From 1960, the Kladruby Games split into spring and autumn editions, so the Games were held twice a year until 2002 (Balzar, 1968). Table 2 shows a detailed overview of the records of the Kladruby Games between 1948–1973.

**Table 2** The Kladruby Games overview 1948–1973 (Srdečný, 1974)

	Date	Participants		Date	Participants
I.	15. 4. – 24. 4. 1948	82	XVI.	6. 9. – 8. 9. 1966	138
II.	9. 7. – 23. 7. 1949	95	XVII.	24. 4. – 27. 4. 1967	139
III.	1. 9. – 12. 9. 1959	166	XVIII.	20. 9. – 22. 9. 1967	173
IV.	14. 6. – 25. 6. 1960	170	XIX.	24. 4. – 26. 4. 1968	156
V.	19. 10. – 22. 10. 1960	179	XX.	28. 8. – 30. 8. 1968	142
VI.	25. 5. – 10. 6. 1961	189	XXI.	29. 5. – 30. 5. 1969	135
VII.	9. 10. – 31. 10. 1961	176	XXII.	22. 9. – 26. 9. 1969	122
VIII.	4. 6. – 8. 6. 1962	184	XXIII.	15. 5. – 16. 5. 1970	129
IX.	24. 9. – 28. 9. 1962	181	XXIV.	21. 9. – 25. 9. 1970	139
X.	1. 7. – 6. 7. 1963	185	XXV.	27. 5. – 28. 5. 1971	121
XI.	22. 6. – 26. 6. 1964	178	XXVI.	23. 9. – 24. 9. 1971	130
XII.	23. 9. – 26. 9. 1964	167	XXVII.	18. 5. – 19. 5. 1972	135
XIII.	26. 5. – 29. 5. 1965	127	XXVIII.	28. 9. – 29. 9. 1972	145
XIV.	20. 9. – 22. 9. 1965	157	XXIX.	24. 5. – 25. 5. 1973	136
XV.	25. 5. – 27. 5. 1966	140	XXX.	28. 9. – 29. 9. 1973	147

It should be noted that, since the first years, participation in the Games has been consistently high. Typically the number ranges from 150–200 athletes (Foxová, 2017; Rehabilitační ústav, 2007).

Records from the years 1974–1981 are so far undiscovered, despite archive and publications searches. From 1982 to 2006, the Games were held continuously, with minimal changes to the sports programme. We should draw attention to a significant change in the organization of the Games in 2006. Until then, patients competed only as individuals in the Games, even when contributing as a ‘town’ or ‘country’ team member in 1949. For the first time in 2006, all participants were divided into four teams, which competed together in all competition categories, some of which were also sub-divided into classification categories. The competition categories were also newly devised:

A – physical disability upper extremities (hand, elbow, shoulder),

B – physical disability lower limbs (ankle, kneeP\*, vertebraeP\*),

C – less mobile (group hemiparesis, paraparesis, hips, vertebraeS\* + Z\*, kneeZ\*),

D – wheelchair users (group mats),

E – immobile (wheelchair users, who are not included in any group exercise).

\* The classification categories were divided on the level of ‘eventual burden’ on the patient due to his abilities, skills and health condition.

Z = beginner, S = intermediate, P = advanced

Another milestone in 2006 was to diminish the number of athletic disciplines. What remained were a relay race and orienteering (Foxová, 2017; Rehabilitační ústav, 1995; Srdečný, 2003).

The Kladruby Games also included in its programme exhibitions of national teams of disabled basketball players against whom patients played a team match as the closing event. A substantial criterion is the effort to involve every patient in the Games, so that the Games help the rehabilitation process to fulfil its social dimension.

On the 50th anniversary of the Rehabilitation Institute in 1997, the Games hosted its 75th edition. It should be noted that the 100th Kladruby Games will be held on 23–26 May 2017, at which the founder of the Games, 97-year-old Mr. Srdečný, has promised his attendance.

## CONCLUSION

Guttman will forever be remembered as the organizer, at Stoke Mandeville, of small-scale paraplegic games that very quickly evolved into the much larger International Stoke Mandeville Games, which were in turn the precursor of the multi-disability Paralympic Games. Indeed, some of the editions of the International Stoke Mandeville Games were even retrospectively named as Paralympic Games. Guttman had the advantage of having emigrated to a stable post-war society, receptive to his views. He also benefitted from the model of the Olympic Games in London in 1948, and seized on this historical accident as a motivation for his prescient vision of the future development of disability sport, on the Olympic model.

However, it should be noted that:

1. the Kladruby Games preceded the Stoke Mandeville Games, albeit by a mere 3 months,
2. the Stoke Mandeville Games were on a tiny scale compared with the first Kladruby Games of 1948 (and also the second, of 1949), in terms of numbers of participants (12 : 82), and duration of event (1 : 10 days),
3. the Stoke Mandeville Games of 1948 had one sport and one disability category, whereas the Kladruby Games had seven sports and four categories of disability,
4. the Kladruby Games included not just individual events, but also social games and sports,
5. the Kladruby Games had elements of oath-taking, ritual and ceremonial (which are also found in the Olympic Games),
6. the Kladruby Games had competitions in the arts and culture, as did the Olympic Games until 1948, when competitions for medals in the arts were discontinued,
7. the first Kladruby Games also had an explicitly 'ethical' component – not only in oath-taking, but also in competitions for 'institutional' virtues,
8. recently, the Kladruby Games has been experimenting with 'mixed' groupings (teams competing together in all competition categories).

We might be led to speculate on how the Kladruby Games might have developed from these very promising beginnings, had Srdečný received earlier support from the authorities, and the impetus to consider Olympic connections. Such speculations we consider to be fruitless, given the very different conceptions of disability sport at work here. Srdečný's continuing commitment was to seeing the Kladruby Games as an impetus to the rehabilitative and recreational benefits of sport, rather than the contradictions experienced by the Paralympics in balancing elite performance values with its other aims.

Considering the huge success of the elite Paralympic Games over the past four decades, it is difficult to compare them with the Kladruby Games which, despite troubled beginnings in an unfavourable regime, grew into a magnificent sports event focused on patients with disability, in the form of rehabilitative and recreational contests.

## NOTE

The first author, RR, conducted interviews with staff at the Rehabilitation Institute in Kladruby in March 2017, and plans to attend the 100th Kladruby Games to be held on 22–26 May 2017. He was also able to interview 97-year-old Mr. Vojmír Srdečný on 13 March 2017 in Prague.

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