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Disability Sport Research Review

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THE OSS

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EXECUTIVE SUMMARY

Since the last review of Disability Sport in Scotland in 2001 there have been significant changes on the landscape in terms of the legal rights for people with a disability and the available data specifically in Scotland. Despite the greater availability of data there are significant questions that remain particularly due to the definition of disability used in the data.

The main source of population data on disability in Scotland originates from the national surveys which define disability as self-reporting of limiting longstanding health conditions. Unfortunately, this methodology does not give any indication of functional ability and thus in the context of disability sport is of limited use. Therefore, a recommendation from this review is to in future adopt the now widely used International Classification of Functioning, Disability and Health (ICF). This would give policy makers and providers a significantly enhanced dataset to create and deliver more appropriate sporting opportunities for disabled sport.

From the available national survey data, the prevalence of disability in Scotland is about 20-24% depending on survey. This figure is fairly static over the last 20 years and would seem to be higher than reported in other countries. However as most other countries adopt the IFC definition of disability it is not possible to directly compare the headline prevalence values.

Data from the Scottish Health Survey 2018 shows that disability results in a significant reduction in sport participation for young (12% vs 81%) and adult (33.4% vs 52.7%) age groups. In addition, using the Scottish Index of Multiple Deprivation as an indicator of poverty demonstrates that the addition of poverty and disability has a very significant negative effect on sport participation. This results in only 20% of the most deprived disabled people participating in any sport in the last 4 weeks, at the time of sampling, compared to 63% for able-bodied respondents in the least deprived group. In addition, only 44% of the least deprived disabled group reported any sport participation. The research literature suggests that being female and disabled has an additional negative impact on sport participation, but this was not evident in the latest data from the Scottish Health Survey (2018) where the negative impact was slightly higher for men.

In conclusion, whilst the barriers and motivations for sport participation for people with a disability are broadly similar to those without a disability there are some additional barriers in terms of accessibility, physical and mental health directly related to disability, lack of opportunity and pain. It also seems that disabled sport participation is less focused on competition but more on the physical health benefits, fun and social interaction. It is likely that there are examples of successful interventions to increase disabled sport participation from the good works of Scottish Disability Sport but there is no central database for these examples nor has there been a systematic analysis on these interventions to establish best practice. There is no good quality data on the specific barriers and motivations for sport participation in Scotland particularly across different disabled groups and thus this is a key gap in our knowledge required to underpin policy and strategy.

Lastly, there is a great deal of discussion in the literature about definitions and classifications and the need to understand that inclusion for people with disability must move beyond the physical and geographical towards a more nuanced understanding that social structural institutions in society have the power and processes to enable change, to create an empowering and emancipatory environment, for inclusion. Once this is recognised the ability to influence and inform policy makers at Governmental level will occur.



INTRODUCTION

The last significant review of Disability Sport in Scotland was completed in 2001 by **sportscotland** (*Suphi, Butler and Worthington, 2001*) and contained a desk-based review as well as extensive qualitative research findings. We were asked to produce an update of the desk-based review element to reflect the developments in disability sport in Scotland and the nomenclature globally, and inform wider and deeper research into sport and disability, and barriers to participation.

RESEARCH AIMS

- To use the 2001 **sportscotland** report as a baseline and update the data presented to highlight developments in sport for people with disabilities over the last 20 years.
- To conduct a global desk-based assessment of the currently available data and reports since 2001, drawing on the wider developments in both law and the concept of disability sport.
- From the above review, highlight any gaps in knowledge. Building on this, our review sets out key research questions to help to address the identified gaps in knowledge.



BACKGROUND

For the general population sport has the potential to have a significant positive impact on the health and wellbeing and the same is true for people with a disability. There is no evidence that the benefits arising from physical activity and sport participation are any less for those with disabilities, it is just typically more challenging (Misener, McPherson, McGillivray & Legg, 2018). However, it is important to note that there is not currently sufficient high-quality research evidence that shows that physical activity improves both the physical and psychosocial wellbeing in all categories of disability (Public Health England, 2018).

While at risk for common health ailments and conditions, people with a disability are at a far greater risk for health-compromising conditions that are secondary to their disability; such secondary health conditions are substantially preventable (Wilhite and Shank, 2009). It is also important to note that according to a report on disability in Australia people born in 2018 can expect to live about 21% of their life with some level of disability (Australian Institute of Health and Welfare, 2020). There is no reason to believe that this figure is dramatically different in any developed country.

Sport can help reduce the stigma and discrimination associated with disability because it can transform community attitudes about persons with disabilities by highlighting their skills and reducing the tendency to see the disability instead of the person (UN, 2020).

Improvements in health and social care for disabled people has led to increases in life expectancy (Truesdale and Brown, 2017) which leads to more disabled people reaching old age and thus being subject to the additional health related problems associated with ageing.

Since the 2001 **sportscotland** report there have been significant changes in legislation and policy that impact on the daily lives of disabled people.

Established in 2006 the UN Convention on the Rights of Persons with Disabilities is the first legally binding international instrument to address the rights of persons with disabilities and sport.

“ Article 30 of the Convention addresses both mainstream and disability-specific sport and stipulates that “States, Parties shall take appropriate measures to encourage and promote the participation, to the fullest extent possible, of persons with disabilities in mainstream sporting activities at all levels.” This also requires that children with disabilities be included in physical education within the school system “to the fullest extent possible” and enjoy equal access to “play, recreation and leisure and sporting activities.” ”

The Equality Act 2010 which replaced the Disability Discrimination Act which defines a person as disabled if they:

- have a physical or mental impairment, and
- the impairment has a substantial and long-term adverse effect on their ability to carry out normal day-to-day activities.

In Scotland there is a 'Fairer Scotland for disabled people: delivery plan' for the United Nations Convention on the Rights of Persons with Disabilities, which specifically mentions sport and physical activity. This section suggests that 'disabled people's participation at all levels of sport and physical activity will increase through an action plan developed' through a 'new Equality in Physical Activity and Sport Forum' but this has yet to be established (*Scottish Government, 2016*).

The 2001 **sport**scotland report contained very little data that was specific to Scotland therefore this report uses data from several Scottish national surveys as well as other governmental reports to provide detailed information on the prevalence of disability in Scotland and how that impacts on sport participation. In addition, there has been a significant increase in the number of research studies investigating aspects of 'disability' and 'sport' with the number of publications doubling from 2010 to 2020 (*Pubmed*). While these search terms include a wide range of topics with varying applicability to community sport in the period since the 2001 it represents more than 11,300 publications.

In a paper describing the top 50 cited publications in Disability sport (1980-2017) Khoo *et al* reported that the majority of research papers were categorised as sociological and psychological as well as training and competition effects (*Khoo, Li and Ansari, 2018*). However, within these 50 papers only two could be considered to be relevant to community sport and wider sport participation.

DEFINITION OF SPORT

Sport means all forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and mental wellbeing, forming social relationships or obtaining results in competition at all levels. Here sport is described as activity that involves physical exertion and the development/use of specific physical skills by individuals whose participation may be motivated by a combination of intrinsic (e.g., enjoyment, accomplishment) and extrinsic (e.g., personal recognition, awards) factors. These activities generally include "rules" to provide structure and organization and some kind of relative measurement—whether internal (against one's own standard), external (against the performance of others), or both. This comprehensive view of sport is found in sport and physical activity programmes for people with and without disabilities throughout Europe and is commonly referred to as Sport for All. The Sport for All concept "spans the continuum from recreational physical activity to high-level competition" (*Wilhite and Shank, 2009*).

DEFINITIONS OF DISABILITY

It is important to place the concept of disability and disability rights in the context of human rights and social capital as a movement that has been gathering pace since the UN created the International Year of Disabled people in 1981 propelled the issue to the fore of policy makers attention. The extent to which people with a disability are included or excluded in physical and social spaces have become politicised since the 1990s in real terms by drawing attention to ableist values and practices and thus have become key sites of power and privilege (*Hughes, 2012*). It is these sites of power and privilege that reproduce norms of ability and the subsequent need for legislation to protect those with a disability to participate equally in society and sport in this case.

There are numerous debates around the language used for disability. For example, persons with a disability, people with a disability or disabled people. We have adopted the United Nations Convention on the Rights of Person with Disabilities (UN, 2015b). This definition of persons with a disability identifies “those who have a long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others” and is seen as a pivotal moment in changing attitudes towards those with a disability. Additionally, the update of this act specifically relates to access to physical activity and states “all persons with a disability should have the right to participate in recreational, leisure and sporting activities (UN, 2015a) as these activities can contribute to physical wellbeing, increasing social inclusion, improving employment prospects and enhancing self-esteem.”

Given that 24% of the population in Scotland are recognised as having some form of disability in comparison to 15% of the world population (World Bank, 2020) it would seem that this group is one of the largest minority groups that are vulnerable to social isolation, marginalisation and exclusion, and it is often cited that disability is only one of the factors of exclusion, others being increased unemployment and poverty that marginalises this group of people further (Misener et al., 2018). That said there are also other models of disability used and increasingly the Biopsychosocial Model of Disability (BMD) adopted by the WHO, as the International Classification of Functioning of Disability and Health, (ICF) this accounts for physical, personal and environmental factors (WHO, 2001) and recognises that disability is a global public health issue as well as a human-rights and a development priority for governments. It is a person-centred approach adopted by many across the globe (Stucki et al., 2017).

The World Health Organisation estimates that low physical activity account for approximately 3.2m deaths worldwide; and, participating in sport and physical activity can lift mood and boost self-esteem” (Mental Health Foundation: Let’s Get Physical, 2013). Scottish Government’s Health Survey, (2012) indicated that participating in physical activity and sport encourages social cohesions and reduces isolation, also reinforced by the work of Kamyuka, et al, examining participation in sport and physical activity during covid-19 lockdown for people with a disability (Kamyuka et al., 2020).

There is an ongoing debate about the understanding of disability and the medicalisation of disability versus the social model of disability. The key issue is about increasingly the levels of physical activity amongst people with a disability it is also about raising the visibility of those with a disability and ensuring society is inclusive of all. Kitchin (1998) has been raising these issues for over two decades and argues that this is usually because people are both physically marginalised as well as spatially isolated. This suggests the need to move away from what has been termed the medical model of disability towards a social model and beyond. The differences in these definitions are important if we are to understand the disadvantages and difficulties persons with a disability face in accessing physical activity and sport and we have highlighted the key concepts below.

“ All persons with a disability should have the right to participate in recreational, leisure and sporting activities as these activities can contribute to physical wellbeing, increasing social inclusion, improving employment prospects and enhancing self-esteem. ”

MEDICAL MODEL

The medical model sees disability as an objective scientific construct that lies within the individual and offers the possibility of a cure or treatment through medical intervention (*Barnes and Mercer, 2010*). This model places the burden on the individual to seek help for their disability and ignores the physical and social environment that presents barriers to participation (*Hughes, 2012*). Furthermore, the barriers are often attitudinal from those in positions of power and policy, and not something that can just be overcome.

SOCIAL MODEL

The social model of disability, which frames disability as a complex political and social creation based on barriers, prejudice, and exclusion created by society (purposely or inadvertently) are the ultimate factors in defining disability (*Devlin and Pothier, 2006; Misener et al., 2018*). Through the removal of these barriers persons with a disability may gain more complete access to community life. For this to happen then both the physical structures of exclusion and social support including attitudinal needs to be addressed. If those in positions of planning structural physical change and those in positions of policy making can influence change in say how we teach physical education in schools to include children with a disability then we in part deal with the attitudinal change needed from early age with young people.

BIOPSYCHOSOCIAL MODEL OF DISABILITY

This model is predicated on the social model of disability, with the additional feature of accounting for the subjective experiences of persons with a disability. The BMD is based on the psychological as well as the medical variable and can contribute or precipitate from an inability to participate in physical activity (*Kamyuka, Carlin, McPherson and Misener, 2020*) presented by social and environmental factors.



The addition this year of Covid-19 has witnessed further isolation from access to physical activity, and the added ableist response that exacerbated the situation in some areas has led to some people with a disability experiencing more mental health problems and the possibility of further physical health problems without access to physical activity.

Understanding disability is not just a right, but including persons with a disability in everything we do is the right thing to do, then allows us to create accessible buildings, spaces, transport and social support structures to lead to a more inclusive approach to providing access to physical activity and sport for persons with a disability.

EQUALITY ACT 2010

In the UK, the Disability Discrimination Act 1995 and then the Equality Act of 2010 (except in Northern Ireland, where the DDA, 1995 is still in place) were enacted to ensure people could not be discriminated against on the ground of their disability for service provision, employment, education or transport. This legislation allows sport providers and policymakers to argue for a rights based and social accessibility approach for persons with a disability.

Excerpt from Equality Act 2010 c15, part 2, chapter 1, section 6

DISABILITY

- 1 A person (P) has a disability if:
 - a) P has a physical or mental impairment, and
 - b) the impairment has a substantial and long-term adverse effect on P's ability to carry out normal day-to-day activities.
- 2 A reference to a disabled person is a reference to a person who has a disability.
- 3 In relation to the protected characteristic of disability:
 - a) a reference to a person who has a particular protected characteristic is a reference to a person who has a particular disability;
 - b) a reference to persons who share a protected characteristic is a reference to persons who have the same disability.
- 4 This Act (except Part 12 and section 190) applies in relation to a person who has had a disability as it applies in relation to a person who has the disability; accordingly (except in that Part and that section):
 - a) a reference (however expressed) to a person who has a disability includes a reference to a person who has had the disability, and
 - b) a reference (however expressed) to a person who does not have a disability includes a reference to a person who has not had the disability.

ASSESSING DISABILITY

International approaches to defining disability are broadly based on the UN Convention on the Rights of Persons with Disabilities (*UN, 2006*) and the conceptual framework set out in the World Health Organisation's (WHO's) International Classification of Functioning, Disability and Health (ICF) (*WHO, 2001*).

To determine whether someone should be counted as disabled in statistics, we have to firstly know whether they have a functional limitation (also called an impairment) caused by a health condition, and secondly whether in their current circumstances that results in some restriction on their daily activities or their participation in society. Unfortunately, most of the data available on disability and disability sport participation in Scotland is based on the self-reporting of medical conditions and whether that condition is longstanding and limiting. This limits a deeper understanding of the physical limitations of the disabled person and how sport policy could be adapted and implemented to enhance sport participation opportunities.

THE IMPORTANCE OF PHYSICAL ACTIVITY

It is well recognised that achieving an adequate amount of physical activity is important for general health and sport can play a significant role in individuals, including those with disabilities (Carty et al., 2021), meeting the required amount of physical activity.

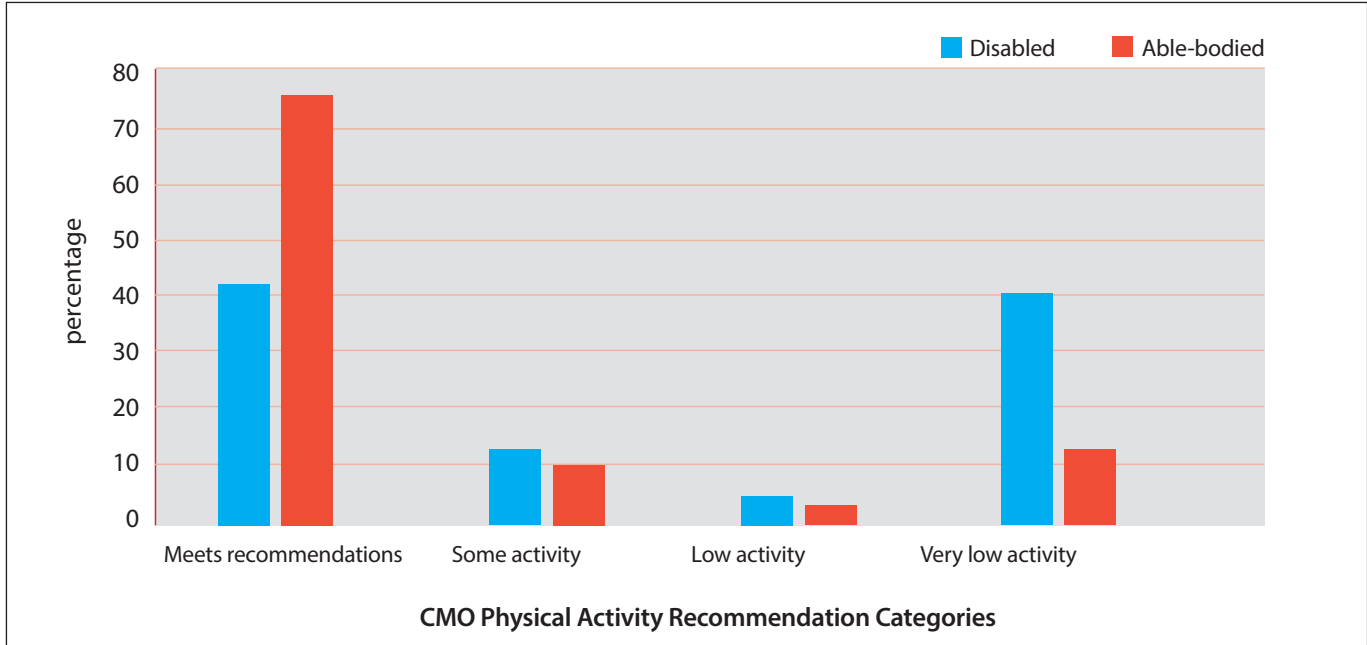
Physical activity is the total amount of activity completed in one day, usually measured in terms of total energy expenditure and is made up of any bodily movement resulting in energy expenditure. The broad components of physical activity are occupational, transport, domestic, and leisure time, which consists of exercise, sport, and unstructured recreation. To be deemed to be physically active there are internationally recognised guidelines that define a minimum level of physical activity required to maintain good health (Foster et al., 2019). Physical activity also includes exercise which has the features of “planned, structured and repetitive bodily movement, the objective of which is to improve or maintain physical fitness”.

People living with disability are at least twice as likely to be physically inactive as those without disability, increasing the risk of noncommunicable diseases and comorbidities, while also being potentially detrimental for mental health and social well-being (Carty et al., 2021)

Examining the data from the Scottish Health Survey 2018 reveals a significant difference in the proportion of disabled people reaching the Chief Medical Officers recommended amount of moderate to vigorous physical activity compared to able-bodied people (Figure 1). The proportion of disabled people meeting the recommendations is nearly half the general population level (42.1% vs 75.4%). More worrying is the proportion of disabled people in the very lowest physical activity category, nearly 4 times as many as the able-bodied population (40.4% vs 11.7%). In England and Wales only 47% of disabled people reach the required threshold compared to 67% of the non-disabled adult population (Sport England, 2020). A rapid evidence review in 2018 produced by the UK Government found that disabled people were twice as likely as non-disabled people to be physically inactive (Public Health England, 2018). In addition, the larger the number of impairments the more likely that a disabled person is inactive.

It is important to note that some physical activity is better than none, and that people living with disability should start with small amounts of physical activity and gradually increase the frequency, intensity, and duration over time where able.

FIGURE 1 Percentage of disabled and able-bodied people across the Chief Medical Officer defined physical activity levels





Physical activity is distinct from sedentary behaviour which is defined as ‘any waking behaviour’ characterized by an energy expenditure ≤ 1.5 metabolic equivalent tasks (METs) while in a sitting or reclining posture (Chia, Anderson and McLean, 2019). Sedentary behaviour is often measured based on the average amount of time spent sitting or lying down per day, elicited by the question “How many hours do you sit or lie down on an average day?” (Kim and Lee, 2019). This includes sitting watching TV, at work or commuting.

The inter-relationship between physical activity and sedentary behaviour is complex for example, individuals who run for 40 min in the morning and then spend the rest of their day sitting are considered to be physically active (having met the minimum guidelines for physical activity) and sedentary, whereas those who spend their day standing and do not engage in other physical activity are considered to be physically inactive but not sedentary. There is a growing body of literature that sedentary behaviour is a significant risk factor for ill health regardless of the level of physical activity undertaken. The general population message is often to ‘move more, sit less,’ or ‘standing instead of sitting’ rather than the term ‘sedentary behaviour’, but for disabled people this could lead to misinterpretation of the recommendations and of the underlying evidence base if energy expenditure is not also emphasized.

Accurately assessing sedentary behaviour is difficult as sedentary activity varies across the week, including at work and during leisure time. Analysing the data from the Scottish Health Survey (2018) disabled people reported significantly more weekday sedentary leisure time, on average 70-100 minutes more, than those with no disability. This suggests that overall disabled people would have at least a third more sedentary time than able-bodied people. This added to lower levels of physical activity would significantly increase the risk of hypokinetic diseases.

Using data from 54 countries it has been estimated that if sitting time (>3 h/day) is combined with inactivity (<150 min/week of moderate to vigorous physical activity) this represents a population attributable risk for all-cause mortality of 14.3% which is equivalent to >1.5 m deaths (Rezende et al., 2016). The average weekday sedentary leisure time including TV watching for disabled people in the Scottish Health Survey (2018) was 419 minutes clearly putting it above the threshold for increased health risk.

A recent review of the research evidence concluded that the associations between physical activity and sedentary behaviour on selected key outcomes could be expected to result in the same health benefits for people living with disability as the general population (Carty et al., 2021).

METHODOLOGY

SOURCES OF DATA

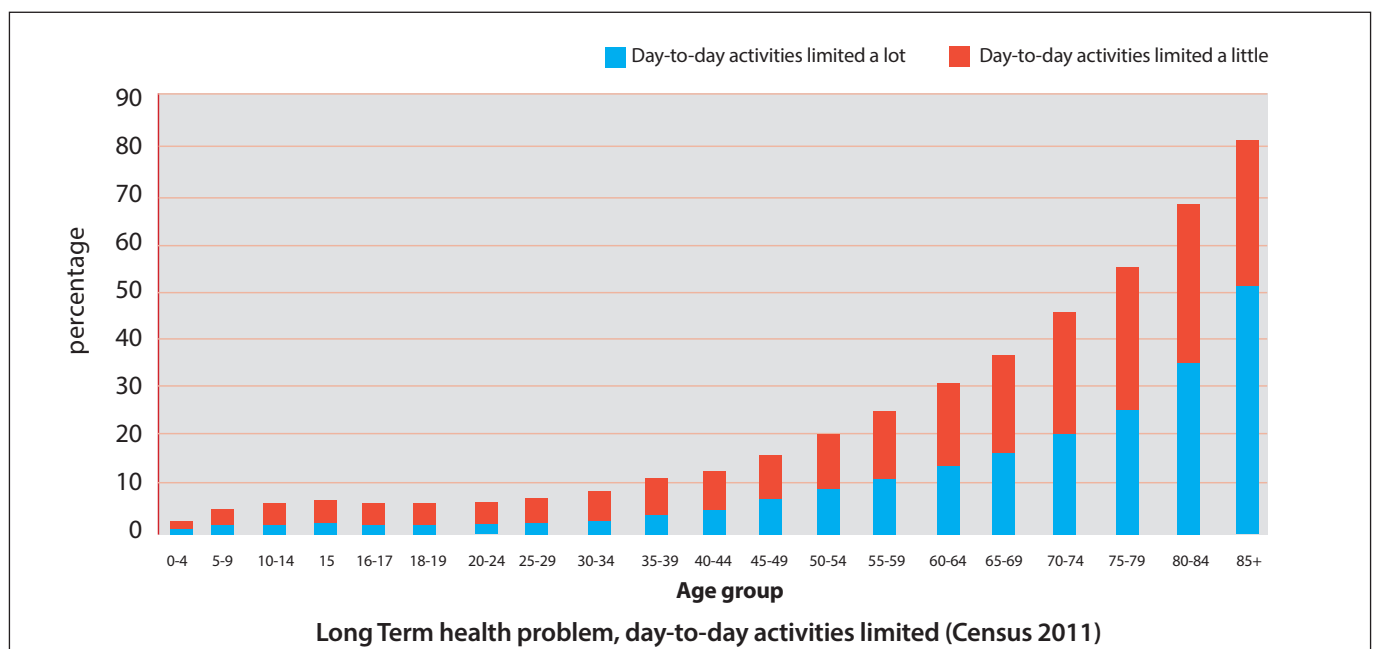
Currently there is no national database of sport participation in Scotland thus it is impossible to accurately establish the exact number of any subgroup, in this case disabled people, who take part in sport.

In trying to review disability sport in Scotland there are several relevant data sources which help to understand the current situation. Some of these sources are national surveys that attempt to describe the Scottish population across a large number of different variables. While these national surveys are conducted to a very high standard unfortunately the questions that relate to disability and sport do not provide enough details to provide a deep understanding of the relationship between disability sport and physical activity. However, while the data presented in this report is not perfect it does provide extremely valuable information on disability in Scotland and how that relates to sport participation. It is also important to note that as self-report surveys none of them provide an adequate picture of 'objectively' assessed levels of disability in Scotland.

DISABILITY DATA FROM NATIONAL SURVEYS

The last full census in Scotland was in 2011 and this included a question on limiting long term illnesses. Specifically, it determined whether long term illnesses impacted on 'Day-to-day activities' a lot, a little, or not limited. Figure 2 shows the profile of long-term health problems across the age categories. Overall, this census suggested that 10% of the population were limited a lot by long term illness. However, the threshold for classifying disability also included long term health problems that limited daily activities 'a little' resulting in the reported prevalence of 20%. This proportion of disability in the population is significantly higher to that reported in the Irish Census 2006 (9.3%). The Irish National Disability Survey conducted interviews with a sample of those who self-reported disability in the Census finding that there was a false positive rate of 12%. In other words, individuals had reported a disability as defined in the Census but did not meet the minimum disability threshold for the National Disability Survey. This resulted in the estimation of disability in the population being revised down to 8.1% (*Central Statistics Office, 2010*).

FIGURE 2 Age distribution of 'long-term health problem' with day-to-day activities limited 'a lot' or 'a little'.



Scottish Census 2011

TABLE 1 Distribution of health conditions from Scottish Census 2011 Scottish Census 2011

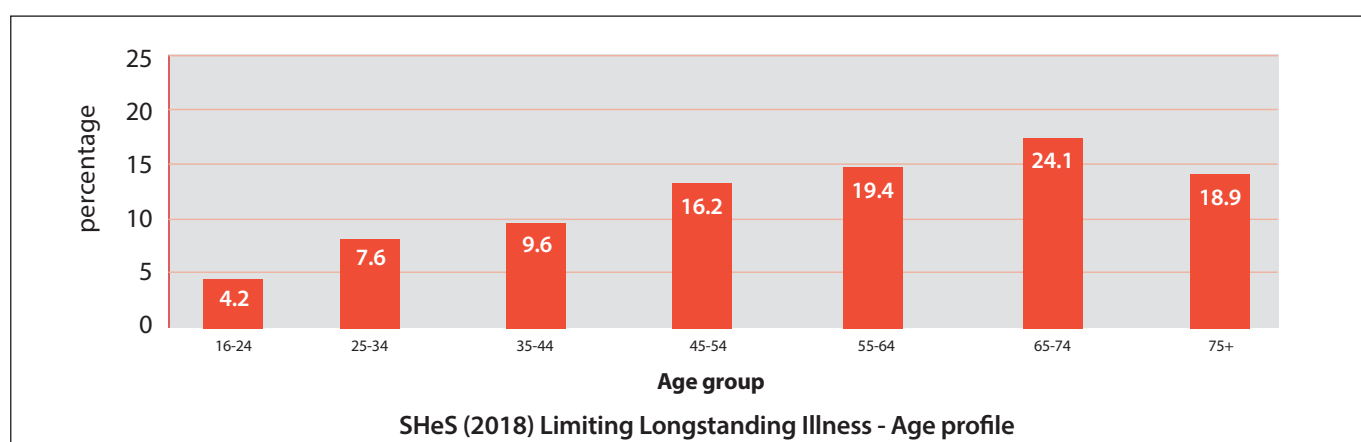
HEALTH CONDITION	% OF POPULATION
No condition	70
Other condition	18.7
Physical disability	6.7
Deafness or partial hearing loss	6.6
Mental health condition	4.4
Blindness or partial sight loss	2.4
Learning difficulty	2.0
Developmental disorder	0.6
Learning disability	0.5

It is important to note that respondents to this question in the Census 2011 were asked to tick all boxes that apply so this data will include responses where individuals classified themselves with more than one long-term health problem. As a result, data in Table 1 more accurately reflects the prevalence of the health problem rather than the proportion of disabled people in the population.

Across three of the Scottish national surveys Scottish Crime and Justice Survey, the Scottish Health Survey and the Scottish Household Survey there are several 'core questions' where identical indicator questions have been asked across all surveys. This enables the pooling of this data to significantly increase the sample size up to approximately 20,000 respondents across these core questions. A report from these core questions is published by the Scottish Government on a regular basis with the last publication in 2017. The latest data available is for 2018.

Within these questions are a number of questions that directly relate to long term physical and mental illnesses. From these 'Limiting long-term physical or mental health conditions are taken as a proxy for disability in national statistics. It is important to note that despite the careful definition of the questions the health condition, whether it was long term and whether it was limiting were all self-report variables and thus are subject to the potential errors associated with self-reporting.

As might be expected with the increase prevalence of ill health with age the percentage of those reporting limiting longstanding illness increases with age up until age 75 as illustrated by Figure 3 below.

FIGURE 3 Percentage of individuals with limiting longstanding illness within the age ranges

Scottish Health Survey 2018

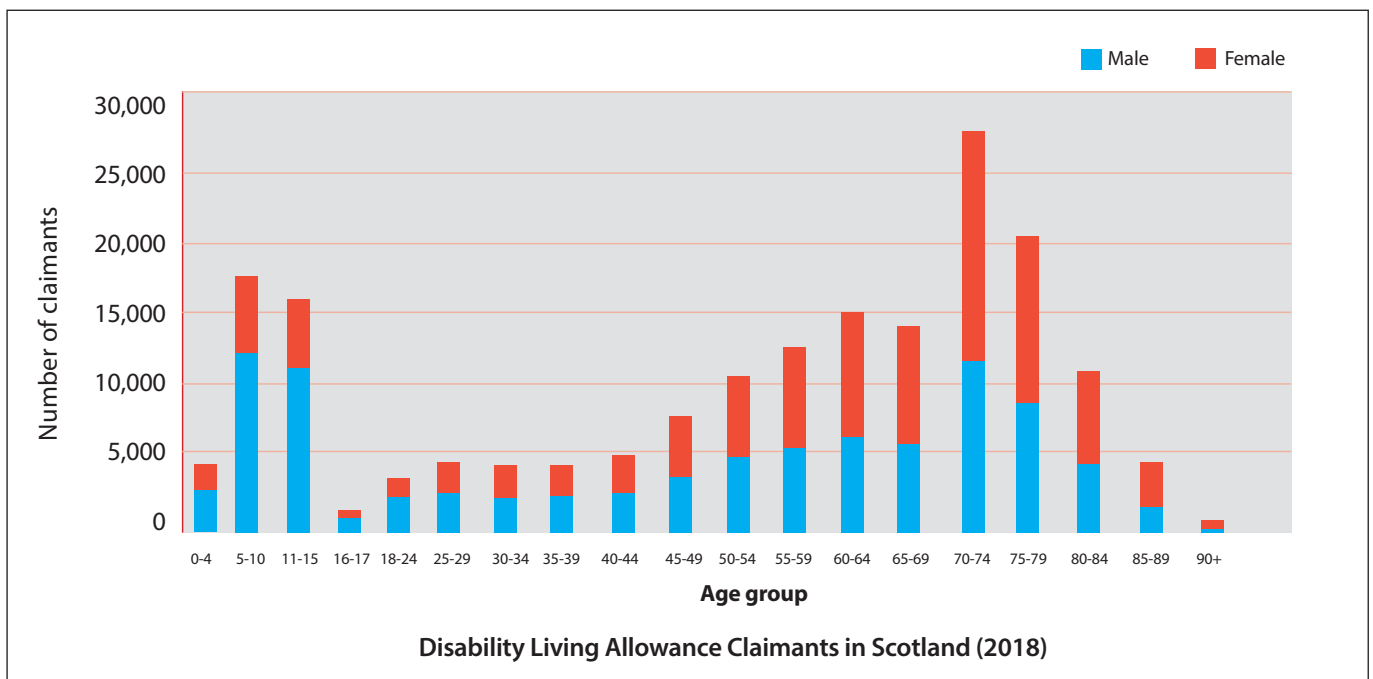
Analysing the data across the Scottish Survey Core Questions 2012-2018 there is a fairly consistent prevalence of disability using the definition of all limiting long term health conditions. The average prevalence of disability across Scotland in 2018 was 24.7%, with a range across local authorities of 33.6% (North Ayrshire) to 17.2% (City of Edinburgh).

DISABILITY DATA FROM OTHER REPORTS

Those claiming Disability Living Allowance

The profile of numbers claiming disability living allowance also provides a picture of the prevalence of disability in Scotland as presented in Figure 4. As might be expected numbers eligible to claim disability allowance increase with age up to age 74 where the absolute number declines in line with the declining population above that age. This data does indicate unusually large numbers of claimants in the 5-16-year age category for which there are two possible explanations. The most likely explanation is the switch from the medical condition-based Disability Living Allowance to the functionally based Personal Independence Payment at age 16 changing the eligibility status for many individuals. In addition, it is possible that with maturity the impact of disability for some children may reduce resulting in changes in eligibility. This pattern is also evident at a lower magnitude in the 2011 Census data and can be seen in data from other countries. Even data from Australia using the more rigorous ICF criteria shows a similar pattern, although reduced in magnitude, of an increase in the prevalence of disability in the 10-19 year-old age group which declines until 30-34 year age group before starting to increase with age (*Australian Institute of Health and Welfare, 2020*).

FIGURE 4 Number of individuals claiming Disability Living Allowance/PIP across age ranges.



Additional Support for Learning Report

In 2019 the Scottish Government published a report assessing the 'Implementation of Additional Support for Learning' in schools (Scottish Government, 2019). Recognising the definition of 'Additional Support' needs is relatively wide ranging and includes other categories like English as an additional language the data from this report does also give an indication of the numbers of disabled children who require additional support in the school context.

This report indicates that 26.6% of pupils required additional support, with 60% of those being male. Interestingly only 2.4% (16,742) of pupils declared that they had a disability. It is also possible that some of this 2.4% would not require Additional Support.

Scottish Commission for Learning Disability, Learning Disability Statistics Scotland 2019

While the data presented in this report do help provide a picture of the prevalence of learning disability in Scotland they do need to be caveated by the fact that some data is missing returns from some of the largest Local Authorities in Scotland therefore impacting the result (*National Statistics Scotland, 2019*).

In 2019 there were 23,584 adults with learning disabilities known to Scottish local authorities. This approximates to 5.2 per 1000 of the Scottish Population, ranging from 8.8 to 3.4 per 1000. This number will be an underestimate due to under-reporting and adults with learning difficulties not being known to the local authority. Of these 4,383 adults identified as being on the autism spectrum. There is a gender imbalance with a significantly higher number of male adults (59.3%) with a learning disability.

Other European countries generally report much lower prevalence of disability due to the different assessment methodologies which are more based on functional ability (ie ICF). For example, the Irish Census (2006) reported that 9.3% of the population were disabled however the more detailed National Disability Survey in 2006 put the population average at 18.5% and the reported rate of disability in Australia in 2020 was 18%. Like Scotland there are several national reports that describe disability but very few address either the physical activity or sporting participation of disabled individuals thus there is very limited international data for comparison.

Deafness in Scotland Report 2016

The 2011 Census estimated that 6.6% of the population of Scotland are affected by deafness which is about 350,00 people. As deafness is also associated with ageing the number of people affected will track the ageing demographic of the population (Bezuijen, 2016). The largest group of people affected by deafness concerns people who become hard of hearing later in life. Using a threshold of hearing loss of at least 35 dB the prevalence of deafness in the younger age group 18-30 was 0.6% for females and 0.1% for males. For the purposes of disability sport this number of adults affected by deafness is probably the most relevant.



DISABILITY AND SPORT PARTICIPATION DATA FROM THE NATIONAL SURVEYS

From the Scottish Health Survey (2018) it is possible to link limiting longstanding illness (disability) to sporting activity to assess the extent by which disability impacts on sporting participation compared to the able-bodied population. In the younger age group (2-15 years old) the proportion of children who undertook any sporting activity in the disabled group was 12% vs 81% for those who reported no limiting longstanding illness. For adults (16-74 years old) the corresponding participation was 33.4% vs 52.7%. This data for Scotland is comparable to that for England and Wales (29.3% vs 51.4%, Taking Part Survey, 2012/13). It is also possible to determine the most popular sports for those individuals classified as disabled and this is presented in Figure 5.

FIGURE 5 Percentage of individuals with limiting longstanding illness who take part in specific sports/exercise.

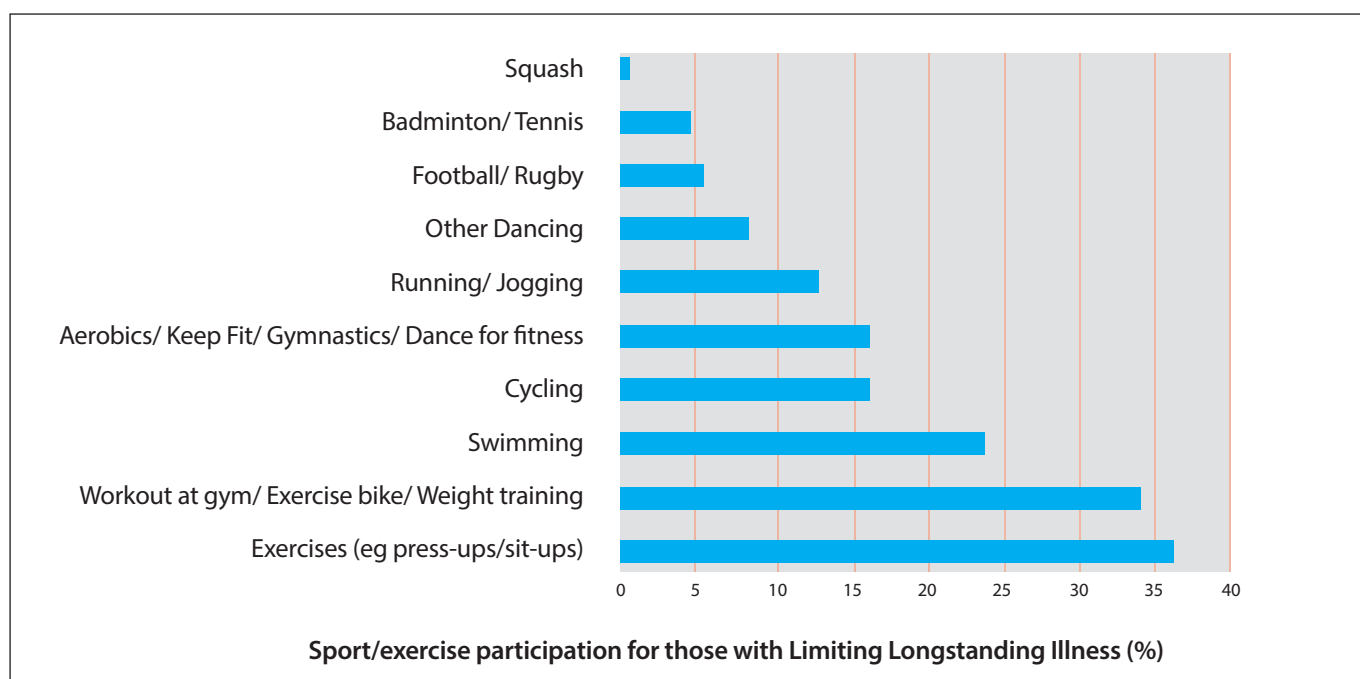


Figure 5 shows that individual activities are more popular than traditional team sports. This is probably not that surprising as integration of disabled people into a team context is difficult. It is also difficult to reach a critical number to be able to form a fully disabled team and have the opportunity to compete against another



disabled team. However other research in able bodied individuals would suggest that the social context is a powerful motivation for the initiation and maintenance of sport and exercise participation. It is however important to consider that this data only refers to individuals self-reporting having participated any of the sports listed in the questionnaire, and does not include detailed information about frequency, duration or intensity of that activity. As highlighted in other reports (*Robertson and Emerson, 2010*) the measures available for sports participation are very general and, in many cases, does not include the type of sport that disabled people took part in or either their frequency, intensity or duration.

IMPACT OF POVERTY ON DISABLED SPORT PARTICIPATION

There is a well-recognised relationship between sport participation and poverty, highlighted in the OSS academic review by Prof Tess Kay (Kay, 2019). From the 2018 Scottish Health Survey it is possible to link Scottish Index of Multiple Deprivation (SIMD) status to sport participation for disabled and able-bodied respondents. The data presented in Figures 6+7 clearly illustrate that the influence of deprivation is greater for disabled people. This results in only 20% of the most deprived disabled people participating in any sport in the last 4 weeks compared to 63% for able-bodied respondents in the least deprived group. In addition, only 44% of the least deprived disabled group reported any sport participation thus it seems that there is an additive effect of disability and deprivation on sport participation compared to the general population. It needs to be recognised that SHeS only reports SIMD status which is a geographic based measure of poverty and deprivation, and not individual. Thus, it is possible for deprived people with a disability to live in an area with a high SIMD (least deprived).

FIGURE 6 Any sport participation in the last four weeks across SIMD quintiles for individuals who have limiting longstanding illness.

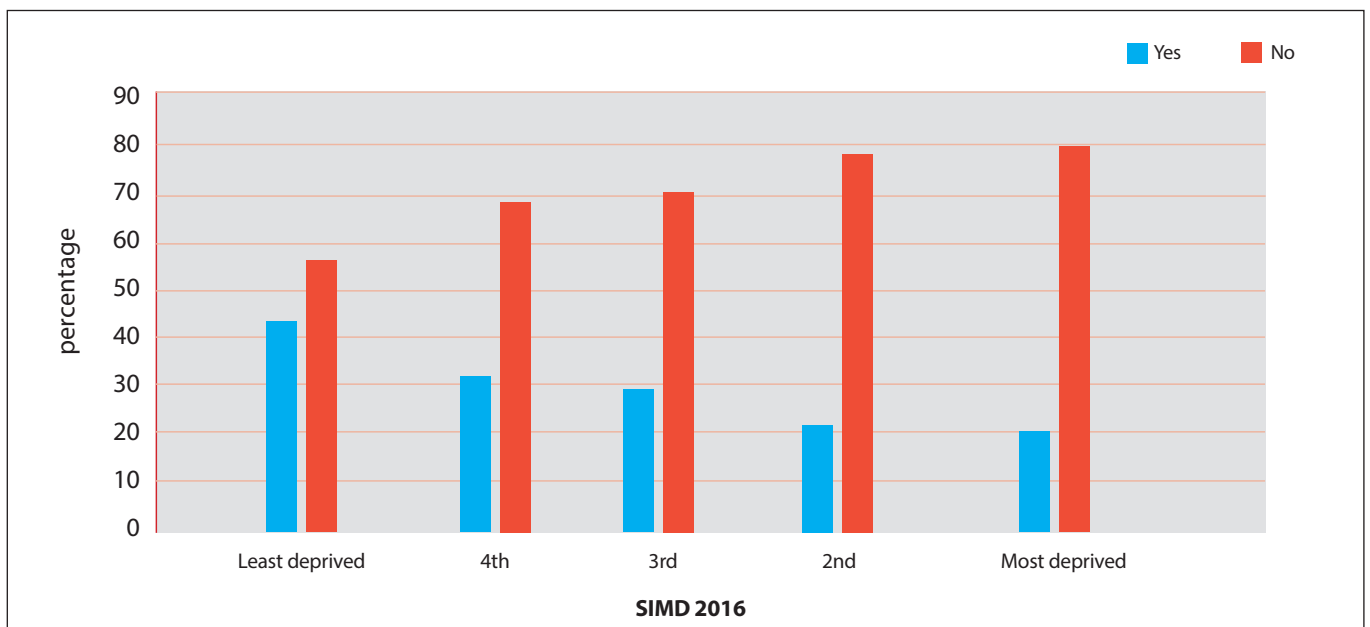
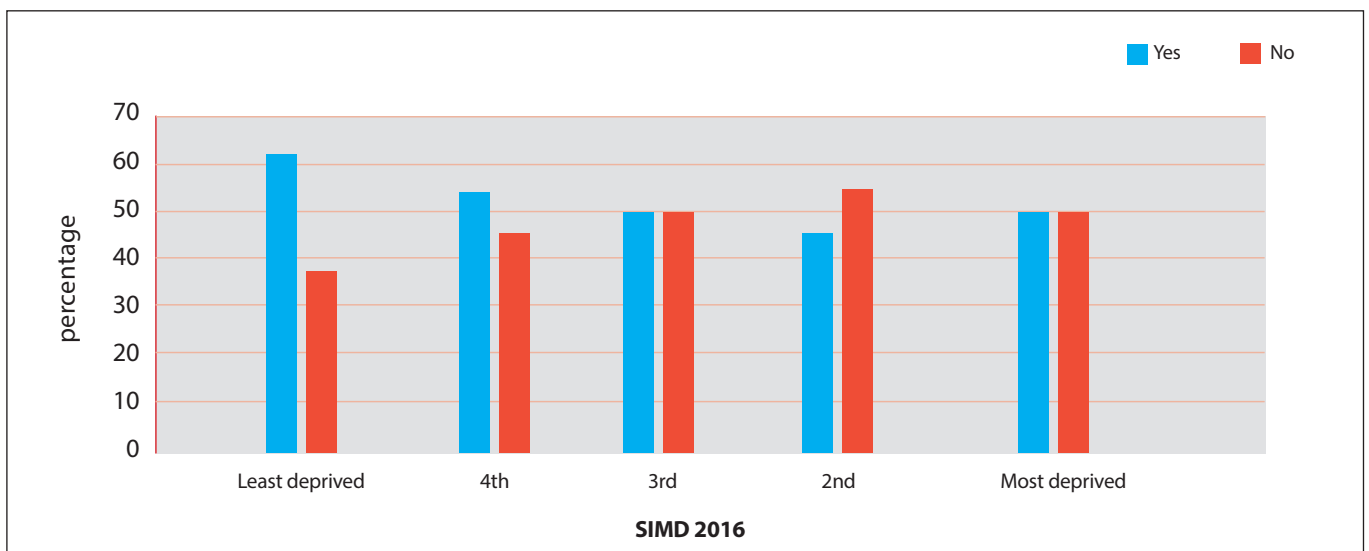


FIGURE 7 Any sport participation in the last four weeks across SIMD quintiles for individuals who do not have long term illness that is limiting.



IMPACT OF GENDER ON DISABLED SPORT PARTICIPATION

The UN have reported that women with disabilities often experience double the discrimination on the basis of their gender and disability. As a result, 93% of women with disabilities are not involved in sport and women comprise only one-third of athletes with disabilities in international competitions (UN 2020). Depending on the nature of the question in virtually all national surveys on sport participation more men take part in sport than women in virtually every age group with the exception of activities like walking, swimming and keepfit/aerobics. (Breuer, Hallmann and Wicker, 2011; Shibli, 2018)

Data from the Scottish Health Survey 2018 (Figures 8+9) demonstrate the clear impact of disability on sport participation, in addition there is a smaller gender effect. This shows that a very high proportion of disabled males (72.8%) and disabled women (70.9%) do not take part in any sport. It would seem that there is a slightly higher proportional difference in sport participation for disabled men compared to able-bodied men (54% to 27.2%) than the equivalent comparison for women (52.7% to 29.1%).

FIGURE 8 Any sport participation in the last four weeks across sex for individuals with limiting longstanding illness.

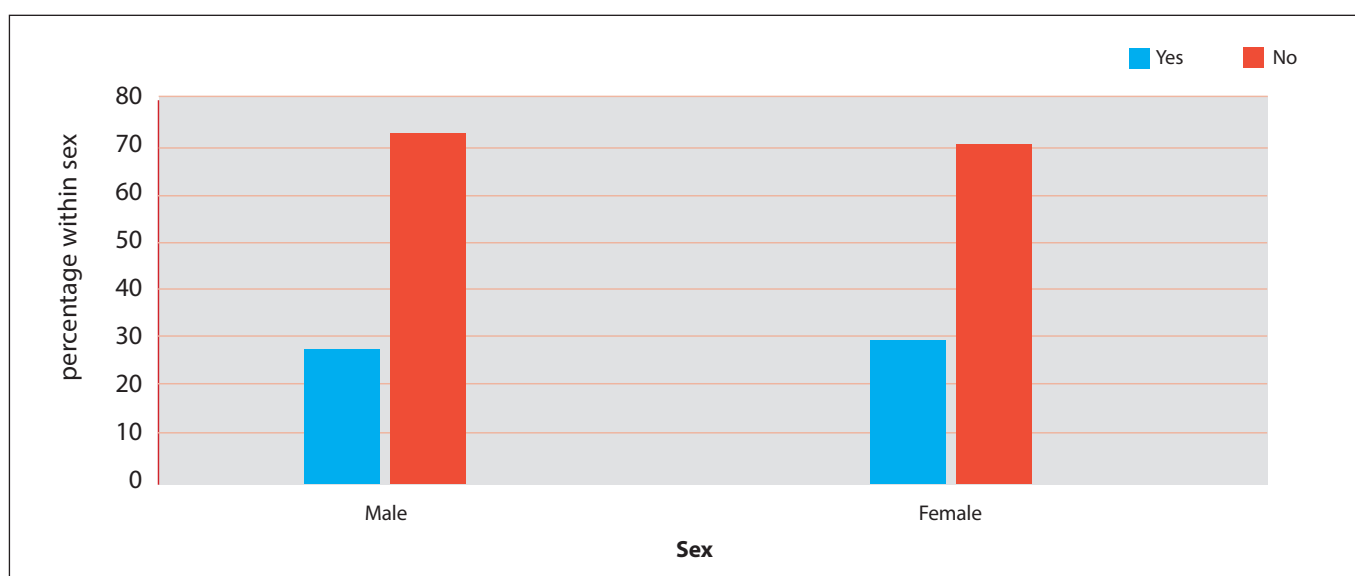
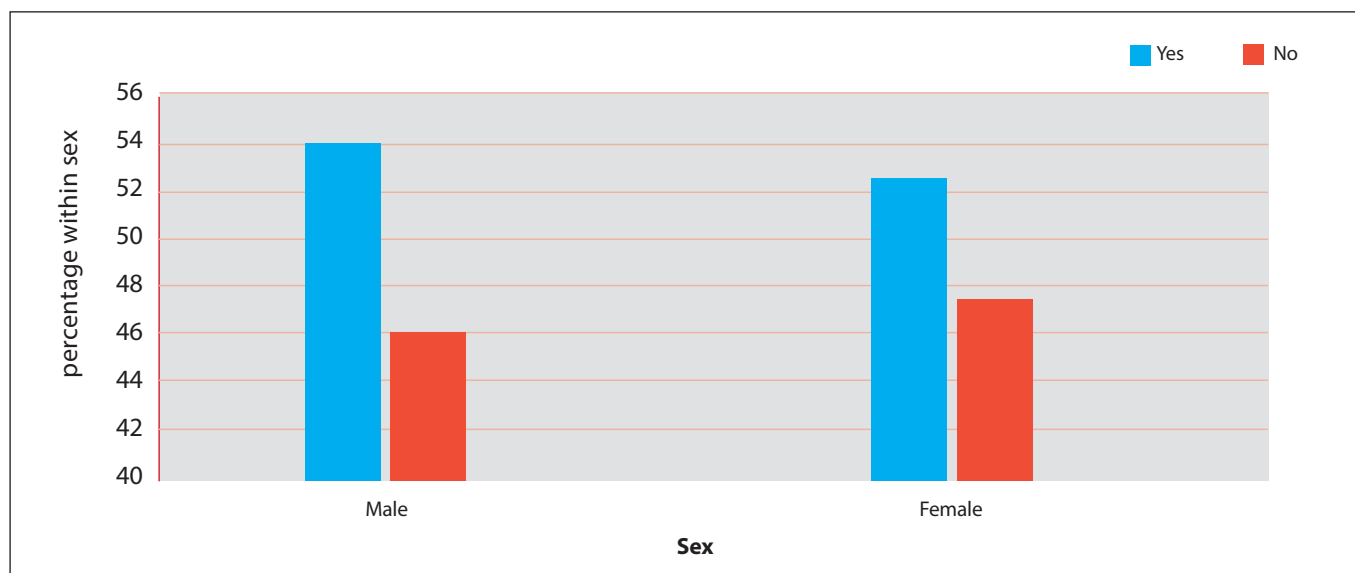


FIGURE 9 Any sport participation in the last four weeks across sex for individuals with no limiting longstanding illness.





ACTIVE SCOTLAND OUTCOMES FRAMEWORK

sportscotland are required to report against the Active Scotland Outcomes Framework on a regular basis which includes reporting on Equality measures like disability. This data is generated from two main sources - their 'Club Survey' (*sportscotland 2020a*) and data collected from 'Schools' (*sportscotland 2020b*), mostly related to their Active Schools programme. Unfortunately, the methodology used in these surveys has changed over the reporting period 2017-2020 and thus it is difficult to make comparisons between reports.

The earlier reports were largely convenience based and lacked any weighting in their analysis and thus are less likely to be representative. Weighting was introduced in 2019-20 and thus this report can be considered more representative. Taking into consideration these methodological differences the most recent surveys, for those taking part in sport in clubs and schools the prevalence of disability is 8-11% varying slightly year to year. While this is in line with the proportions reported in national surveys and the 2011 census this should be considered in the context that the methodology employed in these self-report surveys does differ. Unfortunately, apart from this self-report prevalence of disability there is no further information on the type or frequency of the sport undertaken by disabled participants.

BARRIERS/MOTIVATIONS FOR PEOPLE WITH A DISABILITY

For able-bodied individuals the main barrier to sport and physical activity is time, while still mentioned as a barrier by individuals with a disability it tends to be of lesser importance (*Jaarsma et al., 2014*). When considering barriers to sport for those with a disability it is common to break these down into personal and environmental barriers. Personal barriers often include the disability itself, pain, lack of time, health, inactivity of friends and family, lack of energy and fatigue. The environmental factors include lack of opportunities, accessibility and transportation lack of information and cost (*Jaarsma et al., 2014; Úbeda-Colomer et al., 2019*). It is also important to note that individual/personal barriers are likely to be different depending on the type of disability however as very few studies provide barriers for single disabilities differences in barriers per disability cannot be distinguished. The likelihood of different barriers suggests an individualised approach with specific counselling may be needed to facilitate those with longstanding illness/disability into sport (*Heron et al., 2015*).

Robertson and Emerson (2010) investigated the sporting participation in individuals with intellectual difficulties and found that 41% of respondents had taken part in sports or swimming in the last month. These numbers are significantly lower than the level of sport participation in the Scottish general population (~66%). Of those who did not take part 34% said that they would like to. Most importantly they found that participation was not related to support needs which suggests that individuals with intellectual disabilities do not take part in sport because they simply do not want to rather than their higher support needs (*Robertson and Emerson, 2010*).

Previously most of the research on barriers to participation in sport for those with a disability have focused on the disabled individuals and their caregivers and less so on the providers. Therefore, recently Comella *et al.* (2019) asked sporting providers in Australia what they perceived were the barriers to sport participation for individuals with a disability. The key barriers identified by the sporting organisations included;

- lack of funding, particularly at local level
- low levels of awareness of what was available
- lack of coordination and collaboration
- stigma and pre-existing attitudes towards people with a disability
- limited availability of facilities suitable for both able-bodied and people with a disability
- lack of qualified staff and high reliance on volunteers

Research findings from other countries also points to the lack of awareness as an issue where specialised adapted sporting opportunities have been provided (*Declerck et al., 2021*). This suggests that communication of both the benefits of sporting activity and availability of suitable opportunities need to be carefully considered in any strategy to increase participation levels.

Profiling of those people with disabilities who do take part in sport does in part indicate that there are more barriers for those who do not take part without specifically identifying the barriers themselves. Further investigation of these groups may help identify additional barriers. Typically, those who take part in sport are younger, male, better socioeconomic status, live in less deprived neighbourhoods (*Robertson and Emerson, 2010*).

Unfortunately there is no research data on the specific environmental and personal barriers faced by people with a disability in Scotland who would like to take part in sport therefore an important first step prior to developing any new strategies would be to establish these barriers preferably across the range of disabilities. For many people with a disability participation in sport is often not for the competitive element or its physical health benefits but other aspects like fun, empowerment, freedom, relaxation, enjoyment, motivation, and social interaction (*Jaarsma et al., 2014; Wilhite and Shank, 2009*).

CONCLUSION

Whilst the barriers and motivations for sport participation for people with a disability are broadly similar to those without a disability there are some additional barriers in terms of accessibility, physical and mental health directly related to disability, lack of opportunity and pain. It also seems that disabled sport participation is less focused on competition but more on the physical health benefits, fun and social interaction, despite the best efforts of some key organisations in Scotland. It is likely that there are examples of successful interventions to increase disabled sport participation from the good works of Scottish Disability Sport but there is no central database for these examples nor has there been a systematic analysis on these interventions to establish best practice. However, there is no good quality data on the specific barriers and motivations for sport participation in Scotland particularly across different disabled groups and thus this is a key gap in our knowledge required to underpin policy and strategy.

Lastly, there is a great deal of discussion in the literature about definitions and classifications and the need to understand that inclusion for people with disability needs to move beyond the physical and geographical towards a more nuanced understanding that social structural institutions in society have the power and processes to enable change, to create an empowering and emancipatory environment, for inclusion. Once this is recognised the ability to influence and inform policy makers at Governmental level will occur.

RECOMMENDATIONS FOR FURTHER RESEARCH

1. This review was only a desk-based review and thus has the limitations of that type of review. For a more detailed update to the **sportscotland** 2001 Report it would be invaluable to follow-up this review with an equivalent qualitative piece of research including focus groups with disabled people and interviews with key stakeholders to provide:
 - A deeper understanding of the barriers faced by people with a disability with regard to participation in sport.
 - Examples of good practice.
 - A comprehensive list of key indicators of good practice in relation to encouraging participation amongst the target groups.
 - Further guidance on future research needs
2. Currently no part of the UK utilises the WHO's International Classification of Functioning, Disability and Health (ICF) which leads to incomplete and inconsistent identification of people with disability. Without this detailed information it makes it more difficult to create policy and practice to best support the needs of disabled people including sport and recreation provision. Further research is required to develop better methods to assess the prevalence and severity of disability based on 'ability' rather than on medical condition.



3. As highlighted in other reports (*Robertson and Emerson, 2010*) the measures available for sports participation are very general and, in many cases, does not include the type of sport that disabled people took part in nor their frequency, intensity and duration. In addition, none of the current surveys in Scotland specifically include questions on attitudes to sport and physical activity. This is particularly important in young people as attitudes at this age tend to determine behaviour in later life. Therefore, to give a better understanding of the complete disability sport landscape a National Disability Sport Survey could be developed. This may include several different modules to provide more details in specific contexts for example, availability of specific disabled sport opportunities, accessibility of sport facilities, availability of suitability qualified coaches, community sport vs competitive pathway sport provision, disabled sport in schools.
4. Critical to the widening of sporting opportunities for disabled people is the development of a knowledgeable trained coaching workforce. Several sports do have optional coach education modules on disability but there is no information on the suitability, availability or the delivery volume of these courses. Therefore, there is a need for research to determine the current capacity and expertise of sports coaches to support disabled sport as well as an assessment of the required workforce to give all disabled people the potential opportunity to take part in sport.
5. Integration of disabled sport has made significant progression over the last 50 years but there has been significantly less progress with inclusive sport. Inclusive sport has been shown to be particularly effective at changing attitudes towards disabled people. While the concept of inclusive sport is simple there is very little research into the creation and development of successful inclusive sport opportunities. Thus, research into developing an inclusive sport framework that would allow more sports to offer inclusive sport opportunities.
6. As highlighted in the **sportscotland** 2001 report there are several examples of good practice in disability sport but many of these examples go unreported and there is not central database of good practice and successful interventions. Therefore, the creation of a web-based database of these examples would be an invaluable resource for those planning to increase provision for disabled sport. This database could be initiated by a review of all of the current interventions across Scotland with an academic evaluation of these interventions. This would enable the establishment of a reporting and evaluation framework which would then be utilised by the database going forward.
7. SDS funded the training of a large number 1000+ PE teachers as part of the Commonwealth Games Legacy. This has led to Disability Inclusion Training (DIT) being embedded in all PE and primary teaching students attending initial teacher training and students attending further and higher-education initial coaching courses. The training has also made a positive impact in 13 universities and colleges, an increase of five in the last two years (**sportscotland**, 2019). It would be good to see what impact this has made with the pupils and students and how this has been evaluated, and the potential for further roll out in sport/coach education courses.

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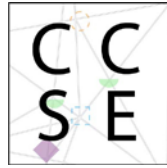
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“ Sport can help reduce the stigma and discrimination associated with disability because it can transform community attitudes about persons with disabilities by highlighting their skills and reducing the tendency to see the disability instead of the person. ”

(UN, 2020)



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