7 Findings

Our review identified a series of barriers to play for children with disabilities. Barriers to play are an outcome of the relationship between the environment and the person, so the review acknowledges the everyday impact of children's impairment as an influencing factor. For example, many children with disabilities may experience some limitations in their activities due to a narrow margin of health or because enabling technologies do not exist as yet. These influences operate in conjunction with the environmental barriers that they encounter. Therefore, they are reported here under the heading of activity performance and play preferences in acknowledgement that all play activity is a combination of the interaction between the individual and the environment. The key barriers identified relate to:
–   Activity performance and play preferences
–   Physical barriers
–   Social barriers – attitudes and behaviours
    In what follows, we elaborate these barriers, which were found to operate in all four contexts.

7.1 Activity performance and play preferences

Impairments, activity limitations and participation restrictions can contribute to difficulties that children encounter within play. For example, studies of/with children for whom co-ordination is a challenge, for instance those who have been labelled as having Developmental Co-ordination Disorder (DCD), report that these children experience social exclusion in outdoor play activities because they find it difficult to join their peers in similar physical play activities (Poulsen, Ziviani and Cuskelly 2007). Children with physical impairments may have movement challenges, which represent barriers to their participation in play (Law et al., 2004), while the lack of provision of suitable equipment that enables a child to grasp objects can reduce their opportunities for play (Hsieh-Chun, 2012; Kernan, 2007; Mihaylov et al., 2004; Moyles, 2013). Children with autism spectrum disorders (ASDs) have been shown to experience significant difficulties in sensory processing that impact on their ability to participate in daily activities including social play (Baker et al., 2008; Baranek et al., 2006; Ben-Sasson et al., 2009; Tomcheck and Dunn, 2007; Wetherby and Woods, 2006). Children who have socio-emotional disabilities may have difficulty initiating and/or maintaining social interaction considered 'appropriate' to other children (Hestenes and Carroll, 2000). Although each childhood condition has not been studied extensively, there is a significant evidence here that characteristics of specific disabilities can and do shape activity, and specific attention to analysis of these barriers is needed.

    Although there is little research that includes the views/perspectives of children with disabilities, the small amount of literature of this type raises important issues and

questions regarding the impact of impairment on play preferences and experiences. For example, a Finnish study shows that children who have autism express their play preferences through their play choices. They often select sensorimotor and imitation play (Kangas Määttä and Uusiautti, 2012). Another study from Brazil indicates that children who have ADHD prefer play that does not involve rules or play partners (Pfeifer et al., 2011). These studies suggest that play preferences may be linked to the abilities of the child and that children with different impairments may have different aspirations for play. Understanding children's play preferences, the extent to which these are shaped by their impairment and/or other factors, is an issue worthy of further investigation. Currently, there is insufficient knowledge/evidence regarding the play needs and aspirations of children with different impairments. The existing research prompts additional questions such as whether, for example, the preference of children who have autism for solitary play should be enabled, or whether they should be encouraged towards more social play. Does respecting children's 'right to play' mean respecting their right to play entirely freely at all times? Families, health workers and educators may continue to promote the play-as-progress agenda; however, for children with disabilities, this also needs to include the child's right to experience play on his/her own terms. Squaring this circle is challenging.

In other studies, researchers found that children with different disabilities sought challenge and play partners in a community playground and enjoyed social play (Burke, 2012). In a study of access and usability of playgrounds in Sweden, however, researchers found that children with a range of disabilities reported that they wished for more interaction with other children (Prellwitz and Skar, 2007). These different findings in relation to play preferences show many play patterns similar to the play of 'typical' children. Children with disabilities, who frequently rely on adults to orchestrate play for them, however, may play in settings or with people that/who might not be their preferred choice. Issues of social inclusion or segregation, mixed ability or similar ability play come into consideration. Further research is needed to build a body of evidence on play preferences of children with disabilities from these perspectives.

7.2 Physical barriers – accessibility and usability

The concept of universal design goes far beyond physical accessibility to include much broader issues of social inclusion socio-economics, enabling human agency and *usability* (see UNCRPD, Article 2). Physical accessibility to sites/locations for play remains, however, a logical precursor to play itself. If the physical environment is not accessible for children with disabilities, they will be excluded from the environment. This exclusion is thought to reinforce negative attitudinal barriers towards children with disabilities (Atmakur, 2013). Although all European countries have adopted and ratified the UNCRC, the right to play has not been universally supported in state

legislation or policy to remove barriers in the built environment. Consequently, different nation states are at different stages in enacting play policy and directing national resources for play provision. For example, in a 2003 project on public play provision for children with disabilities (Webb, 2003), it was noted that only two international pieces of legislation existed at the time related to playgrounds: the UK's DDA (Disability Discrimination Act, 1995) and the USA's ADA (Americans with Disabilities Act, 1990). While this situation is improving, there appears to be a definite gap between international rights of the child and the operationalising of their rights into legislation and policy for universal play and social inclusion in public play spaces. Legislative and policy gaps result in barriers to rights-based play provision in Europe. Further research is needed to establish how different countries in Europe are developing policy to promote play in relation to universal design and the physical environment.

A key barrier in establishing children's rights to play relates to the lack of knowledge and experience of disability and universal design among service providers and landscape architects or designers (Dunn and Moore, 2005; Prellwitz and Tamm, 1999; Woolley, 2013). In one study, planners or providers of playgrounds were found to have inadequate knowledge/understanding of universal design. This was compounded by poor communication in the planning process, a lack of clear guidelines and, most importantly, lack of consultation with persons with disabilities (Prellwitz and Tamm, 1999).

Another important finding from research is that 'getting it right' in the design of play spaces to enable children with disabilities to play can be challenging. Where 'special' accessible features are included in design, playground amenity officers in the United Kingdom, for example, have reported that this can also lead to segregation (Dunn and Moore, 2005). Planning needs to be for inclusion – for environments that are usable, not just physically accessible: 'activity rather than appliance oriented design creates a setting where all children may be included in the fun' (Christensen, 2002).

Physical barriers also refer to the characteristics of a physical setting that promotes or limits play. Observations by Rigby and Gaik (2007), in three different environments of children with physical impairments, show that where environmental conditions are less supportive, children with physical impairments are least playful. They highlighted the influence of the physical environment in determining and shaping play opportunities. Their research also emphasised the importance of availability, accessibility and usability of play materials. The specific characteristics of the physical environment that produce barriers to participation are numerous, but include noise, crowding, temperature, lighting, design and accessibility, depending on the child's specific needs (Law et al., 1999; Rimmer et al., 2004).

Some studies suggest that the home setting is best for supporting playfulness, when compared to school or community settings, with environmental barriers increasing with age as the child expands his or her horizon into more varied community and

recreational settings (Law et al., 2007; Rigby and Gaik, 2007). Other studies, however, point to physical barriers within the home, highlighting how children often require assistance transferring between play spaces in the home (e.g. up/down stairs). In some homes, there is not enough room for wheelchairs to manoeuvre about or enough room to accommodate visits from friends due to the space taken up by assistive technologies and other equipment (Brotherson et al., 2008; Connors and Stalker, 2003; Geisthardt et al., 2002). Almost three decades ago, Lewis (1987) highlighted the reality that some parents may delay in adapting the home environment due to difficulty in coming to terms with their child's disability. Anecdotal evidence from professional health practitioners suggests that this is still an ongoing issue. Thus, the home space can also be a physical barrier to play, in terms of inaccessibility, especially in early years of childhood before any adaptations are made to the home's physical layout.

Literature notes that physical barriers to children's play also occur in schools, where older school buildings in some countries are not designed for wheelchair accessibility (Santer et al., 2007), and outdoor school playgrounds are all too often constructed for 'typically' developing children and are not easily accessible for children with physical impairments (Rigby and Gaik, 2007). Indeed, with regard to outdoor play, children with disabilities have been found to be 'under represented users of public open spaces and play spaces' (Woolley, 2013, pp. 451).

All sorts of benefits to children (with and without disabilities) of playing outdoors, including play in and with 'nature', have been identified (Blakesley et al., 2013; Kuo and Faber Taylor, 2004; Pavey, 2006). Children acquire life skills through playing outside in their communities, such as sharing, looking out for one another and asking for help (Beunderman, 2010). Most importantly, playing outdoors has a significant place in most children's lives and is typically a setting for social inclusion.

To date, the focus for considering outdoor play spaces for children with disabilities has, primarily, been on the physical accessibility of public, built playground environments (e.g. Moore and Lynch, 2015; Webb, 2003). Three Swedish studies, for example, found that children with disabilities were deprived of play on/in playgrounds due to physical inaccessibility and limited usability (Prellwitz and Skar, 2007, Prellwitz et al., 2001; Prellwitz and Tamm, 1999). In Prellwitz and Skar's study (2007), sand significantly limited mobility; play equipment was too small for wheelchair users and some children with cognitive impairments/disabilities to use. For children with visual impairments/disabilities, grey wood play equipment and lack of visual markings limited their access to play, and some play equipments were too complicated to understand. This resulted in children developing other strategies, frequently through fear. Afraid to be seen to use the equipment in the 'wrong way', they waited until nobody else was on the playground before having a 'go' (Prellwitz and Skar, 2007).

Although access to nature is included in the UNCRC, it has been acknowledged that it is all too often a forgotten human right and one that needs to be addressed for all children (Anderson-Brolin, 2002), but acutely for children with disabilities.

Studies of children with ADD/HD, for example, found that there is a direct relationship with green spaces and attention: spending time in nature promotes better attention and decreases symptoms of ADHD (Kuo and Taylor, 2004; Taylor, Kuo and Sullivan, 2001). While, again, this type of finding is at risk of prioritising the 'play-as-progress' concept, denial of a right to nature play is arguably a denial of the right to the benefits of this type of play and thus of concern.

Policy documents and guidelines for built environments for children with disabilities typically do not include natural elements (e.g. Canadian Coalition for accessible play-spaces, 2014; DESSA, 2007). Hence, designing for inclusion has tended not to incorporate ways to access nature as a core feature, and this has resulted in further barriers in the physical environment for children with disabilities.

7.3 Social barriers – attitudes and behaviours

Even when the physical environment has been built or adapted to maximise accessibility, it may still operate as a social exclusion area (Dunn et al., 2003). Often this is because of social and/or attitudinal barriers. Literature suggests that while professionals, parents and peers can all play important roles in facilitating and empowering play for children with disabilities, their attitudes and/or behaviours can also, at times, impact negatively on the play experiences of these children.

Research suggests that children with disabilities can experience social exclusion from their peers; they are not always invited to play with friends or are not always encouraged/supported to invite friends to come over to their houses to play (Mundhenke et al., 2010; Sandberg et al., 2004). Parents of children with disabilities have reported problems with bullying and difficulties that other (non-disabled) children have in knowing how to play with their children (Oates et al., 2011; Preece and Jordan, 2009). In addition, studies have shown that children with ASD, for example, who have fewer playdates organised for them in the home have more difficulties in negotiating play with peers in the school playground (Frankel et al., 2011). There is evidence to suggest, however, that even when inclusive, collaborative play is facilitated, and it is not always a positive experience for the children with disabilities. The non-disabled children tend to take the lead in the play, while the children with disabilities become onlookers, particularly in outdoor play, where the activities might be more physically demanding (Rigby and Gaik, 2007).

How to address children with disabilities' exclusion by peers is an under-researched topic. Where it has been considered, the challenge it poses for practitioners is made clear. Spencer-Cavaliere and Watkinson (2010) found that the children with disabilities in their study reported not being asked to play by other children and being told that they were not welcome to take part and that this led to them not being included. Children stated that gaining entry to less-structured play environments – such as play within recess – was particularly challenging. Taub and

Greer (2000) found that children with physical impairments/disabilities not only valued their unstructured play experiences but also reported being excluded by their peers. This highlights what appears to be a major difficulty in the promotion of play for children with disabilities: how to promote children with disabilities' engagement with inclusive, 'free play', while not intervening in that play to such a degree that it is no longer 'free'. For example, in a school setting, Hestenes and Caroll (2000) found that the presence of a teacher was a significant predictor of children's inclusive interactions.

Teachers can initiate play between children with and without disabilities (Odom et al., 1996) and facilitate continued play in part by modelling appropriate behaviour for individual children (Odom et al. 1993) and in part by supervising play. It is clear that a teacher's presence and support can impact positively on the frequency with which inclusive interactions occur. Yet this type of play is usually 'structured'. How adults might facilitate inclusion in free play opportunities – if to be 'free', the play must be child directed and determined – is less well understood. Identifying relevant strategies to support inclusive 'free play' is a major challenge for practitioners and warrants further investigation by researchers.

Within school settings, there is some evidence that teachers, particularly those who specialise in 'special educational needs', do not always encourage and support children with disabilities to engage in a various forms of play: investigative and manipulative, imaginative, construction, play with natural materials and outside play (Ozen et al., 2013). Within such settings, children with disabilities may not be given the same opportunities as their peers to make choices, to take risks, to accept challenges or to make friends (Richardson, 2002). Further, Buchanon and Johnson (2009) and Richardson (2002) considered that without knowledgeable and sensitive professionals, a 'fix and serve' educational policy is delivered that often denies the opportunity for play.

Other attitudes held by a range of professionals can be barriers to the play of children with disabilities (Cross et al., 2004). For example, Ludvigsen et al. (2005) found staff at an outdoor adventure play recreation site attempting to stop disabled children engaging in 'messy' activities such as kicking and throwing leaves, perhaps reflecting the heightened control of disabled children (Curran and Runswick-Cole, 2013). Furthermore, Ludvigsen et al. (2005) also found that parents (of children with disabilities) although initially positive about the idea of adventure play, perceived the play site to be 'unsafe'. So perceptions of 'risk' also figure highly. Gleave (2010) supports this point, reporting that staff at outdoor recreation sites considered less supervised outdoor opportunities to be 'too risky' for disabled children.

Sometimes, the presence of a parent in a play situation is less about parental attitudes and more about necessity. For example, in a study by Prellwitz and Skar (2007), children were found to need parental assistance to move around and use playground equipment since the design of the playground did not support their independent mobility. The children indicated, however, that they would have liked

to have been able to use the playground without an adult being present. Parents themselves are sometimes aware that being with their children in playgrounds contributed to their children feeling stigmatised. Their 'solution' to this problem, however, was sometimes to avoid playgrounds, thus leading to further exclusion of their children from play opportunities (Prellwitz, 2007).

Children with disabilities rely on the home social environment for much of their play opportunities; they tend to have fewer friends and spend more time with adults than other children (Skar, 2002 and Tamm, 2005 cited in Mundhenke et al., 2010). Parent's perceptions of risk in this setting can, however, also be a barrier to play for their children. Connors and Stalker (2003) found that parents could be a barrier to friends coming over to play and sometimes applied restrictions for the purpose of 'protection' and avoidance of risk. Parental perceptions of risk have also been found to restrict children with disabilities' play within natural environments. Parents have been found to attribute additional 'vulnerability' to their children with disabilities, with unintended negative consequences (Gleave, 2010). Children with disabilities have themselves reported experiencing 'over-protection', which precluded their opportunities for creativity, risk and physical challenge, all essentials for play (Andrews, 2012).