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Canadian Disability Participation Project

The CDPP is an alliance of university, public, private and government sector partners working together to enhance community participation among Canadians with physical disabilities. The research team for this project has expertise in childhood disability, physical activity, children and youth geographics, and planning and design of built environments.

Evidence-Informed Recommendations for Designing Inclusive Playgrounds to Enable Participation for Children with Disabilities

Importance of Play

The United Nations recognizes play as a fundamental human right of all children, including children with disabilities.[1] Despite play being a fundamental human right, children with disabilities lack equal access to play opportunities, in part due to inaccessible playground design.[2] This is particularly concerning given that play is integral to children's emotional wellbeing and cognitive, physical, and social development.[3-6] Playground play is largely unstructured, offering diverse play opportunities for children to advance their imagination, self-awareness, risk perception, identity, and their social and motor skills.[7,8]

Playgrounds (i.e., constructed play areas that contain traditional play equipment on the ground as well as structures built with paths to and between elevated play equipment)[9] are crucial to children's experience of play. However, they represent a significant barrier to children with disabilities, as their design is often informed by normative understandings of children's bodies, mobilities, and abilities that do not account for the existence of childhood disability.[10] Playground surfaces, elevated play structures, and play components themselves are often inaccessible to children with disabilities, resulting in feelings of isolation, exclusion from peer interaction, or exclusion from play spaces altogether.[10]

Consideration of Playground Design

Within playground design research and practice, the unique needs, interests, and rights of children with disabilities are beginning to be recognized. This can be seen through the existence of accessibility

standards, which, despite their limitations, represent a shift toward improving access to play opportunities for children with disabilities.[10]

Past playground-related reviews[11,12] have identified ways to improve a playground's physical design, focusing on the playground structure itself, but have not considered how a playground's social and surrounding built environments affect children with disabilities' access to play.

Evidence-Informed Recommendations

Researchers conducted a scoping review of existing literature on inclusive playground design. Consideration was given not only to the physical design of playgrounds, but also playgrounds' surrounding built and social environments, allowing for a more comprehensive approach focused on ensuring children with disabilities and their families experience inclusion during playground visits.

The scoping review included 35 studies and analyzed each study's key findings to identify playground recommendations for designing inclusive playgrounds to enable participation for children with disabilities. Researchers synthesized the key findings into 13 evidence-informed recommendations and one promising practice which were categorized into five broad playground elements: entry points; surfacing and paths; features to foster inclusive play; staffing/supervision; and design process. Below is a brief summary of the recommendations.

Playground Elements	Recommendations
1. Entry Points	1.1. Entrance to the playground space is wide and free of any obstacles 1.2. Wide, flat, and firm pathways from the entrance to the playground 1.3. Enclosing the playground to prevent children from straying (***Promising Practice***)
2. Surfacing and paths	2.1. A flat uniform surface that consists of material that is moderately firm and stable 2.2. Ramps that provide access to and between elevated play components
3. Features to foster inclusive play	3.1. Play equipment accessible to all children 3.2. Variety of play equipment that provides appropriate challenges for children of all ages and abilities 3.3. Different types of sensory play components that are spread out within the play space to reduce overstimulation 3.4. Solitary play components for escaping overstimulation 3.5. Play components shaped in recognizable designs that allow for creative and imaginative pursuits 3.6. Informational features to aid with spatial orientation, communication, and guidance on proper use of equipment 3.7. Shaded spaces to aid with temperature regulation
4. Staffing/ Supervision	4.1. Trained staff present in the play space to support play for all children
5. Design Process	5.1. User involvement (families of children with disabilities and representative from disability organizations) in the design process

These evidence-informed recommendations are not exclusive to the playground design itself; they also recognize the importance of ensuring easy access into playground spaces, how the presence of trained staff within playgrounds may improve accessibility and inclusion, and how involving children with disabilities and their families in playground design processes can help with producing playground that account for their needs, abilities, and desires.

The five playground elements highlight the importance of both the built and social environments in fostering accessible play, and include not only children with mobility impairments, but also children with sensory and developmental disabilities, who often lack sensory play spaces within playgrounds.[13, 14] Widely accessible playground entry and equipment also fosters interaction between children with and without disabilities. Moreover, the recommendations benefit all children of a wide range of developmental stages and abilities while also supporting caregivers with a disability, facilitating their ability to supervise and participate in their child's play environment.

In Summary

Overall, 13 evidence-informed recommendations and one promising practice for designing inclusive playgrounds for children with disabilities emerged from the researchers' scoping review of 35 peer-reviewed studies. These recommendations highlight the importance of both the playground itself and the surrounding social and built environments in fostering an accessible play space. We recommend playground designers and municipalities consider these evidence-informed recommendations to create play spaces that are welcoming and inclusive for people of all ages and abilities. Communities should strive for playgrounds, a common childhood environment, to be fully accessible and inclusive thus upholding play as a fundamental human right of all children – play is a right, not a privilege.

References

1. United Nations. Convention on the rights of the child [Internet]. 1989 [cited 2020 Mar 20]. Available from: https://www.ohchr.org/en/professionalinterest/pages/crc.aspx
2. United Nations. Convention on the Rights of the Child - General comment No. 17 (2013) on the right of the child to rest, leisure, play, recreational activities, cultural life and the arts (Article 31). 2013 [cited 2020 Mar 26]; Available from: https://www.refworld.org/docid/51ef9bcc4.html
3. Burghardt GM. The comparative reach of play and brain. *American Journal of Play*. 2010;(2):338–56.
4. Frost JL. A history of children's play and play environments: Toward a contemporary child-saving movement [Internet]. New York, NY: Routledge; 2010 [cited 2020 Mar 26].
5. Ginsburg KR. The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics*. 2007 Jan 1;119(1):182–91.
6. Gray P. The decline of play and the rise of psychopathology in children and adolescents. *American Journal of Play*. 2011;3(4):443–63.
7. Prellwitz M, Skär L. Usability of playgrounds for children with different abilities. *Occup Ther Int*. 2007 Sep;14(3):144–55.
8. Tamm M, Skär L. How I play: Roles and relations in the play situations of children with restricted mobility. *Scandinavian Journal of Occupational Therapy*. 2000 Jan;7(4):174–82.
9. Hayward DG, Rothenberg M, Beasley RR. Children's play and urban playground environments: 'A comparison of traditional, contemporary, and adventure playground types'. *Environment and Behavior*. 1974 Jun 1;6(2):131–68.
10. Brown D, Ross T, Leo J, Buliung R, Shirazipour C, Latimer-Cheung AE, Arbour-Nicitopoulos KP. A scoping review of evidence-informed recommendations for designing inclusive playgrounds. *Frontiers of Rehabilitation Sciences*. 2021;2:664595. doi: 10.3389/fresc.2021.664595.
11. Fernelius C, Christensen K. Systematic review of evidence-based practices for inclusive playground design. *Children, Youth and Environments*. 2017;27(3):78.
12. Moore A, Lynch H. Accessibility and usability of playground environments for children under 12: A scoping review. *Scandinavian Journal of Occupational Therapy*. 2015 Sep 3;22(5):331–44.
13. Kodjebacheva G, Tina Sabo, Molly Brennan, Rie Suzuki. Boundless playgrounds in southeast Michigan: Safety, accessibility, and sensory elements. *Children, Youth and Environments*. 2015;25(1):132.
14. Stanton-Chapman TL, Schmidt EL. Caregiver perceptions of inclusive playgrounds targeting toddlers and preschoolers with disabilities: has recent international and national policy improved overall satisfaction? *J Res Spec Educ Needs*. 2017 Oct;17(4):237–46.

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