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Adesh University Journal of Medical Sciences & Research

Review Article

Exploring the inclusion of children with disabilities in physical activities: benefits, barriers, and facilitators

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Received: 13 May 2024
Accepted: 31 January 2025
Published: 20 March 2025

DOI
10.25259/AUJMSR_20_2024

Quick Response Code:

ABSTRACT

This article explores the participation of children living with disabilities in physical activities, highlighting the benefits, barriers, and facilitators of their inclusion. Disability is defined as a result of the interaction between impairments, activity limitations, and participation restrictions, which can vary across individuals and contexts. The article delves into several models of disability, including the medical, social, and human rights models and their implications for policy and practice. Epidemiological data suggest that 15% of the global population lives with some form of disability, with a higher prevalence in developing countries. Engaging in physical activity (PA) has been shown to offer numerous health benefits for children with disabilities, such as improved physical health, reduced social isolation, and enhanced mental well-being. However, these children face various barriers, including personal, social, environmental, and policy-related factors. The article concludes by emphasizing the importance of addressing these barriers and promoting facilitators such as inclusive programs, family support, and accessible facilities to ensure equitable participation in PA. This review is essential as it sheds light on the critical role that PA plays in the health and well-being of children living with disabilities. PA offers a wealth of benefits, including improved physical health, cognitive function, and mental well-being. Despite these advantages, children with disabilities often encounter significant barriers that limit their participation, including personal, social, environmental, and policy-related challenges. By exploring these barriers and the factors that facilitate participation, this article underscores the need for inclusive programs, accessible facilities, and supportive policies. The review calls attention to the broader social and human rights implications of ensuring equitable access to physical activities for all children, advocating for a more inclusive society where children with disabilities can thrive.

Keywords: Barriers, Children living with disabilities, Facilitators, Physical activity

DISABILITY

Disability is a comprehensive term used to describe impairments in body structures and functions, limitations in activities, and restrictions in participation, as defined by the International Classification of Functioning, Disability, and Health (ICF).[1] This concept emphasizes that disability results from the interaction between individuals with impairments and personal or environmental factors that may hinder their full participation in society.[2] The United Nations[3] view disability as an evolving concept, highlighting that disability arises from the interaction between individuals with impairments and various attitudinal and environmental barriers that restrict their ability to participate equally in society. The Convention on the Rights of Persons with Disabilities similarly outlines disability as a product of this interaction and the barriers faced by individuals with impairments, impeding their participation in society.[4]

According to the ICF, human functioning is categorized into three primary areas: Impairments, activity limitations, and participation restrictions.[1]

- Impairments refer to any loss or abnormality in psychological, physiological, or anatomical structure or function, such as paralysis or blindness. These abnormalities may be temporary or permanent and involve defects, anomalies, or losses in bodily structures such as limbs or organs.[5] Intellectual, language, visceral, and skeletal impairments are examples of such conditions.[6]
- Activity limitations refer to the challenges a person may face when performing tasks such as walking, grooming or eating.[1] It is the lack of ability to carry out activities in a manner or range considered typical, which may be either temporary or permanent, reversible or irreversible, and progressive or regressive.[7] Activity limitation is characterized by excesses or deficiencies of customarily expected activity performance and behavior which may be temporary or permanent, reversible or irreversible, and progressive or regressive[8] and may arise either as a direct result of impairment or as an individual's psychological response to their impairment.[6]
- Participation restrictions involve challenges in engaging in everyday life areas such as employment, education, transportation, or sports.[1] These restrictions represent the social impact of impairments or activity limitations, highlighting how such limitations can hinder individuals from fulfilling typical roles based on their age, sex, and cultural context.[7,9]

MODELS OF DISABILITY

Disability models offer different perspectives on how society perceives people with disabilities.[4] These include the moral or religious model, the medical model, the social model, the identity model, the charity model, the cultural model, the human rights model, and the economic model.[10]

Moral/religious model

One of the earliest models, rooted in religious traditions like the Judeo-Christian faith, sees disability as a punishment for personal or ancestral sins.[11] According to one of the primary forms of moral/religious models of disability, disability should be regarded as a punishment from God for a particular sin or sins that may have been committed by the person with a disability.[12] Sometimes, it is not only the individual's sin that is regarded as a possible cause of their disability but also any sin that may have been committed by their parents and/or ancestors.[12] Rimmerman[13] explains the potential harm of this model, as it can lead to social exclusion of affected families.

Medical model

Often called the "personal tragedy" model, it views disability as inherently negative, focusing on medical treatment to make individuals as "normal" as possible.[14] The medical model treats disability as a condition requiring medical intervention to help individuals become healthier or "normal" like others in society. It views disability as a personal tragedy, something to be prevented or cured, often focusing on the individual and their family as the primary sufferers of this condition.[15,16] Griffo[17] critiques this model for neglecting the role of environmental factors that exacerbate disabilities.

Social model

This model shifts the focus from the individual to society, asserting that it is societal barriers – not impairments – that disables individuals. It advocates for removing these societal barriers to ensure full participation for people with disabilities.[18] This implies that society fails to meet the needs of individuals with disabilities, such as through inaccessible buildings and the absence of braille books.[19] As a result, society is viewed as creating barriers that prevent the full inclusion of these individuals.[20]

Identity model

While aligned with the social model in understanding disability as socially constructed, the identity model emphasizes disability as a form of minority identity, like race or gender, and promotes "disability pride."[18,21] The identity model has faced criticism, with one key concern being that it pressures individuals to align with a particular group culture. In addition, critics argue that it overlooks the need for economic redistribution and fails to adequately address the economic inequalities experienced by people living with disabilities (PLWDs).[22]

Charity model

This model views people with disabilities as victims in need of charity and pity,[17] while promoting special treatment to help them cope with their impairments. Retief[23] argues that this model views people with disabilities as tragic figures who endure their impairments and thus require special services and institutions due to their perceived differences.

Human rights model

Focused on legal rights, this model insists that people with disabilities should enjoy equal rights and access to services and entitlements.[24]

Economic model

This model focuses on the economic consequences of disability, especially regarding employment and labor force participation.[25]

These diverse models contribute to the understanding of disability, influencing policies, and practices aimed at improving the lives of individuals with disabilities.

EPIDEMIOLOGY OF DISABILITY

The World Health Organization's (WHO's) 2011 Disability Report estimates that 15% of the global population lives with some form of disability, with 2–4% experiencing significant functional difficulties.[2] Most children with disabilities (approximately 85%) reside in developing countries.[26] Walker[27] states that 50% of disabilities are preventable, including 70% of blindness and 50% of hearing impairments in children from developing countries, which can either be prevented or treated.

Factors such as poverty, limited access to healthcare and education, and malnutrition contribute to the higher prevalence of disabilities in these regions.[2] In addition, inadequate healthcare, social protection, and discriminatory attitudes further exacerbate the situation in these countries.[22]

PHYSICAL ACTIVITY (PA)

PA is any bodily movement that requires energy expenditure.[28] It involves people moving, acting, and performing within culturally specific spaces and contests and influenced by a unique array of interests, emotions, ideas, instructions, and relationships.[29] It also encompasses a range of activities such as walking, cycling, or engaging in sports, influenced by cultural practices and individual interests.[30] PA is critical in childhood and adolescence, as these periods help establish long-term health behaviors,[31] and the transition to adulthood is pivotal for addressing chronic health risks.[32]

Engaging in PA offers various benefits, including reducing social isolation, improving mental health, and enhancing overall quality of life.[33] Exercise, a form of structured PA, provides numerous health benefits, including reducing the risk of chronic conditions such as diabetes and cardiovascular diseases.[33]

BENEFITS OF PA

Regular PA is associated with a wide range of health benefits. International guidelines generally recommend at least 150 min of moderate-to-vigorous PA per week,[28] which helps prevent and manage non-communicable diseases such as hypertension, diabetes, and cardiovascular conditions. Moderate-intensity PA has been found to help prevent the development of type 2 diabetes in middle-aged men, with even stronger benefits for those at high risk.[34] It also plays a crucial role in managing hypertension, dyslipidemia, obesity, and insulin resistance, which helps reduce the risk of cerebrovascular disease and metabolic syndrome.[35]

PA has also been linked to better memory and cognitive function, especially through aerobic exercises that promote neurogenesis and brain health.[36,37] For instance, intense workouts, for instance, boost the levels of brain-derived neurotrophic factor in the body, which supports decision-making, cognitive functions, and learning.[38]

RECOMMENDATIONS FOR PA

Despite the benefits, many individuals with physical disabilities do not meet recommended PA levels and are thus at higher risk for secondary conditions such as cardiovascular disease and obesity.[39] The WHO recommends that adults aged 18-64 engage in 150 min of moderate-intensity or 75 min of vigorous-intensity aerobic activity per week, in addition to muscle-strengthening exercises twice weekly.[40] For children and adolescents, at least 60 min of moderate to vigorous PA daily is recommended.[40] Likewise, the American Heart Association advises children aged 2–18 to participate in at least 60 min of moderate to vigorous-intensity PA daily, focusing on aerobic, muscle-strengthening, and bone-strengthening exercises.[41] These guidelines highlight that any PA is beneficial, and PLWDs can experience significant health improvements even with less than the recommended 60 min/day (for children) or 150 min/week (for adults), as many PLWDs are inactive. Even small increases in PA could lead to substantial positive health outcomes for PLWDs.[42]

EFFECTS AND BENEFITS OF PA FOR PEOPLE LIVING WITH DISABILITIES

PA significantly improves the well-being and quality of life for individuals with disabilities.[43] These benefits extend to reducing the risk of various diseases, improving physical function, and enhancing overall mental health. The United Nations Convention on the Rights of Persons with Disabilities acknowledges the need for inclusive participation in PA for people with disabilities.[44] Studies have shown that PA helps mitigate the risk of non-communicable diseases, such as heart disease, among people with disabilities.[45]

BARRIERS AND FACILITATORS OF PARTICIPATION IN PHYSICAL ACTIVITIES FOR PEOPLE WITH DISABILITIES

The involvement of children with disabilities in PA can be influenced by a range of barriers and facilitators. Barriers

are challenges that prevent or limit their participation in PA, whereas facilitators are factors that enhance their abilities and create opportunities for engagement.[46] Addressing these barriers is crucial to improve participation and increase both the quantity and variety of PA; these children can take part in.

Children with disabilities face various barriers to participate in physical activities. These include personal barriers (e.g., attitudes and impairments), social barriers (e.g., lack of family support or negative attitudes), environmental barriers (e.g., inadequate facilities and transportation), and policy barriers (e.g., insufficient funding for inclusive programs).[47,48]

In contrast, facilitators that promote participation include access to supportive social networks, suitable facilities, and family and community encouragement.[49] Understanding and addressing these barriers while reinforcing facilitators can help improve the level and quality of participation in PA for children with disabilities.[50]

Limitations

One limitation of this review is its focus on existing literature, which may not fully capture the current, real-world challenges faced by children with disabilities in diverse settings. In addition, the review emphasizes general categories of barriers and facilitators without deeply exploring specific case studies or regional variations, particularly in low-resource contexts. The absence of direct, up-to-date data on the effectiveness of certain programs or interventions could also limit the practical applicability of the findings.

CONCLUSION

The participation of children living with disabilities in physical activities is essential for their overall well-being and development. As highlighted throughout this article, disability is a complex and multifaceted concept, shaped by the interaction between impairments, activity limitations, and participation restrictions. While numerous benefits of PA, such as improved physical health, cognitive function, and mental well-being, are well-documented, children with disabilities often face significant barriers to engagement in physical activities. These barriers, including personal, social, environmental, and policy-related factors, create challenges that hinder their full participation and inclusion in society.

However, by understanding the diverse models of disability, such as the social, medical, and human rights models, we can better address the obstacles faced by children with disabilities and promote inclusive, supportive environments. Facilitators such as family support, accessible facilities, and appropriate programs are a key to overcoming these barriers and enhancing participation. Policies that promote inclusivity, alongside efforts to eliminate attitudinal and physical barriers, can play a pivotal role in improving access to PA for children with disabilities.

Ultimately, ensuring equal access to physical activities for children with disabilities is not only a matter of health but also of human rights and social equity. It is crucial for society, governments, and communities to work together to create an environment where all children, regardless of their abilities, have the opportunity to participate, thrive, and lead healthy, fulfilling lives.

Recommendations

1. Policy Development: Governments and policymakers should prioritize the creation of inclusive policies that guarantee equal access to physical activities for children with disabilities. This includes allocating funding for accessible facilities and inclusive sport programs that cater to diverse needs.
2. Education and Awareness: Community awareness and education campaigns should focus on shifting societal attitudes toward disability, emphasizing inclusion, and equal participation. These efforts can help reduce stigma and encourage more positive perceptions of children with disabilities engaging in physical activities.
3. Accessibility Improvements: To facilitate participation, efforts should be made to improve physical environments. This includes making public spaces, transportation, and recreational facilities accessible and safe for children with disabilities, ensuring they have the opportunity to engage in physical activities within their communities.
4. Future research could explore the effectiveness of specific intervention models in different geographical and socioeconomic contexts, especially in developing countries. Investigating how specific disability types (e.g., physical, intellectual, and sensory) face unique barriers and facilitators in PA participation could further refine inclusive practices. In addition, exploring longitudinal studies on the long-term impact of inclusive physical activities on children with disabilities would be valuable. Research into technological solutions for promoting accessibility, such as adaptive equipment and digital platforms for remote participation, is another promising area for future exploration.

Ethical approval

Institutional Review Board approval is not required.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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How to cite this article: Fatudimu MB, Gbonjubola YT, Francis L. Exploring the inclusion of children with disabilities in physical activities: benefits, barriers, and facilitators. Adesh Univ J Med Sci Res. 2024;6:5-10. doi: 10.25259/AUJMSR_20_2024