The Pathway to Inclusion: Improving the Health of All Americans

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ABSTRACT

People with disabilities (PWDs) are an underrecognized population who tend to experience poorer health outcomes than those without disabilities. Many of these disparate health outcomes are preventable and can be addressed through various lifestyle interventions, such as physical activity and access to appropriate health care services. However, PWDs face significant barriers to health care and health-promoting activities within their communities that can positively affect these health outcomes and improve quality of life. In order to ensure access to these beneficial programs, inclusive practices must be incorporated into all aspects of the physical and social environment, including the built environment, equipment, service delivery, policy and decision making, programming, and staff training. The purpose of this article is to discuss barriers often experienced by PWDs in accessing health promotion programs and address practical considerations that can ensure inclusion of PWDs' health care and health promotion programs and address practical considerations that can ensure inclusion of PWDs' health care and health promotion programs that will provide a foundation to offer inclusive programs and practices to all Americans, including those with disabilities. *Journal of Clinical Exercise Physiology*. 2020;9(2):59–66.

BACKGROUND

Sixty-one million adults in the United States live with a disability, representing 1 in 4 adults or approximately 26% of the population. The most commonly reported disability type is mobility limitation, affecting 13.7% of adults reporting a disability, followed by cognition (10.8%), independent living (6.8%), hearing (5.9%), vision (4.6%), and self-care (3.6%) (1,2). The Americans with Disabilities Act (ADA) defines disability as a person who (a) has a physical or mental impairment that substantially limits one or more major life activities, (b) has a record of such an impairment, or (c) is regarded as having such an impairment (3). The term disability is often used to describe a single group of individuals; however, disability is diverse, encompassing those with mobility, cognitive, hearing, and vision issues (1,2). In addition, disabilities can range from more severe (60% of the population) to moderate or slight (40% of the population). This diversity

contributes to a reduced level of understanding of disabilities and how to effectively address the needs of this vulnerable population (4,5).

Disability can affect an individual at any age but is more common among adults age 65 years and older (2 in 5), women (1 in 4), and non-Hispanic American Indians or Alaska Natives (2 in 5) (2) with the highest proportion of individuals living in the southern regions of the United States (1,2,4,5). Despite the growing number of individuals who identify as having a disability, people with disabilities (PWDs) continue to represent an underrecognized health disparity (4,6) who experience significant barriers to health care access, resources to maintain health, and to participate in health promotion programs such as diabetes prevention, physical activity (PA) or nutrition community-based programs, walking clubs, and fitness or aquatics centers compared with other underserved groups and individuals without disabilities (1–3,5). Many of these disparities include

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modifiable risk factors that can be addressed through lifestyle interventions such as PA and appropriate access to health care. PWDs are more likely to perceive their own health as fair or poor compared with adults without disabilities (7,8), and 87% of PWDs report at least one secondary condition (9). Compared with individuals who do not have disabilities, PWDs are more likely to be obese (38.2% versus 26.2%), smoke (28.2% versus 13.4%), have heart disease (11.5% versus 3.8%), and diabetes (16.3% versus 7.2%) (2). Additionally, people with mobility limitations display cardiometabolic profiles that put them at a higher risk of experiencing an adverse health outcome than those without disabilities (10).

Working-age adults with disabilities also experience barriers to health care access compared with individuals without disabilities. Many do not have a usual health care provider (1 in 3), and 33% have an unmet health care need due to cost. One in 4 adults with disabilities aged 45 to 64 years did not have a routine checkup in the past year compared with people without a disability (2,3). Moreover, the cost of disability-associated health care expenses among US adults was estimated to be nearly \$398 billion, with health care costs accounting for nearly 27% of all disability-associated health care expenditures (11). As the largest minority group in the United States, the health status of individuals with disabilities is a major and significant public health concern.

Traditionally, disability has been viewed through the lens of a medical model of disability. In this model, the word disability refers to someone who has a physical or mental pathology that solely resides within the person. Under this definition, disability is a personal problem, and the focus is on treating or curing the individual. On the other hand, the social model of disability states that disability is a societal issue, not an individual issue. Disability affects the individual when policies, systems, and environments do not support the individual's level of functioning. The emphasis within this model focuses on approaches such as barrier removal and antidiscrimination legislation, (i.e., the ADA) (12). This view of disability is in line with the social ecological approach that addresses the effects of the interpersonal, intrapersonal, community, and policy level as influencers of health and healthy behaviors (13). Inclusion of PWDs must permeate through each of these significant levels to address health disparities and encourage healthy behaviors among PWDs.

Inclusion is based on social justice principles and occurs when all community members (a) are presumed competent, (b) are recruited and welcome as valued members of their community, (c) fully participate and learn with their peers, and (d) experience reciprocal social relationships. Inclusion has been effective in decreasing the development of secondary conditions, reducing or delaying functional limitations, increasing capacity to engage in PA, and increasing overall PA (14). Efforts to continue to promote inclusion in health care and health promotion programs can help to decrease the health disparities experienced by PWDs. The purpose of this article is to first outline the disparities and barriers faced by PWDs to accessing health promotion programs and secondly to provide practical considerations to ensure inclusion of PWDs in services and programs to improve the health of all individuals, with and without disability. This article aims to provide a basic working knowledge for clinical exercise physiologists of how to make programs and practices inclusive of PWDs.

PA AND DISABILITY

Research continues to support the promising effects of PA as beneficial to PWDs. One study found that, across disability types resulting in mobility limitations, every 60 min per day of light-intensity PA is associated with a 14% reduction in all-cause mortality (15). Research also suggests that PA reduces obesity, pain, fatigue, and the risk of developing secondary conditions in most individuals. Additionally, PA increases strength, balance, and quality of life in PWDs (16–22).

The Physical Activity Guidelines for Americans advises PWDs to participate in at least 150 min of moderate-intensity aerobic activity or 75 min of vigorous-intensity aerobic activity per week. Additionally, strength training is advised as is able for all appropriate major muscle groups 2 or more days a week (23). These guidelines are no different than those for people without disability, but meeting those guidelines may require modified exercises. Specific PA recommendations have been published for specific disability groups, such as spinal cord injury (24), poststroke, multiple sclerosis, and Parkinson disease (25). These guidelines have diagnosis-specific considerations. For example, a primary issue associated with multiple sclerosis is heat sensitivity, which can be accommodated by specific approaches such as exercising at a cooler time of day or using a fan to increase both convective and evaporative cooling (26).

Despite demonstrated benefits and national recommendations, more than half of all adults with disabilities report high amounts of physical inactivity (27,28). For instance, 1 study identified that PWDs consistently engage in more sedentary time than those without disability (523 min per day compared to 418 min per day, respectively) and engage in less objectively measured PA (303 min per day of lightintensity PA and 12 min per day of moderate to vigorous PA), compared with those without a disability (364 min per day and 28 min per day, respectively) (10).

Additional barriers faced by PWDs in accessing health and wellness programs may be a factor affecting PA levels. According to the Healthy People 2020 report, approximately 77% of PWDs report barriers exist that prevent them access to local health and wellness programs in their communities. In addition, PWDs experience significant physical and social barriers related to access that are beyond the control of the individual (22,29,30). Physical barriers include elements of design (i.e., uneven sidewalks, lack of ramp access) and temporal barriers, which are those that may arise at given times of the day or year (i.e., lack of snow removal) (31). Within facilities, the design can more easily allow for or

TABLE 1. Principles of universal design (38).

Universal Design Principle	Definition
Equitable use	The design is useful and marketable to people with diverse abilities.
Flexibility in use	The design accommodates a wide range of individual preferences and abilities.
Simple and intuitive use	Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
Perceptible information	The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
Tolerance for error	The design minimizes hazards and the adverse consequences of accidental or unintended actions.
Low physical effort	The design can be used efficiently and comfortably and with a minimum of fatigue.
Size and space for approach and use	Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture and mobility.

limit or deny access to the facility services. Common examples include a lack of elevators and accessible restrooms (32). Social or attitudinal barriers have been identified via qualitative studies. These studies indicate the attitudes of service providers can make PWDs feel unwelcome or unimportant due to a lack of willingness to make accommodations or a lack of understanding of the need to do so (33). Implicit bias can create a stigma that PWDs are not able to participate in PA like any other member of society. However, with inclusive programs, adapted equipment, accessible facilities, and policies that support inclusion, PWDs can successfully participate in all types of physical activities. (29,32,34).

WHAT IS INCLUSION?

Inclusion ensures that everyone has an equal opportunity to participate in every aspect of life to the fullest of their abilities and desires. This requires assessing, identifying, and removing barriers that may prohibit a person, with or without a physical, intellectual, developmental, or other disability, to fully participate in activities. Inclusion involves equal access for PWDs to all aspects of life, including, but not limited to, transportation, communication devices, government services, public accommodations, employment, and participation within community activities. Inclusion also addresses nondiscrimination and aims to eliminate the belief that PWDs are less healthy than individuals without disabilities (35).

The ADA addresses barriers to access with minimal design standards that may not fully meet the access and inclusion needs of PWDs. A broader standard is universal design (UD), which attempts to ensure access by all potential users, not just PWDs. Universal design is suggested as a way to boost further engagement in healthy behaviors by encouraging independent access to every environment, including rehabilitation, PA, and community settings (36,37). According to the Disability Act of 2005 and The Center for Excellence in Universal Design, the design and composition of an environment should be such that anyone can use the environment without the need for adaptation,

modification, or specialized solutions. This is not limited to the physical environment, but also reaches to the social, informational, electronic, and political environments. All services, products, and systems should be independently useable by any individual, with or without disability (38). To achieve this, UD is based on 7 principles developed by a working group of individuals with design expertise including architects, engineers, production designers, and environmental design researchers, led by Ronald Mace (Table 1).

ADAPTATIONS FOR INCLUSION

Exercise program adaptations are made with the intention to increase participation and to ensure that everyone can safely and successfully participate in all program activities. Adaptations do not attempt to modify the program fidelity but provide accommodations for all program activities that allow PWDs to participate fully and experience the intended health benefits. For example, cardiac rehabilitation may use a stress test to identify aerobic capacity and develop the exercise prescription. Individuals who use manual wheelchairs can perform exercise testing using protocols on alternate devices, such as a roller system (39). This does not interfere with the integrity of the test but allows the test to be adapted to the individual's needs. Another example is the focus of rehabilitation programs on regaining strength. An individual using a manual wheelchair may perform strength training exercises using machines with removable seats or no seat (i.e., a cable machine). This allows the PWD to fully participate in strength training activities in a manner so that they may achieve intended health outcomes. At times, a simple accommodation will suffice. For instance, in a group setting, demonstrating alternative ways of performing strength training activities, such as from a seated or standing position, allows any individual to use the form that works for them.

It is important that the supervisory personnel do not overadapt to the extent that the activity is completely different and does not provide enjoyment and benefits to all the participants. Adaptations should never change the program, but rather enhance the program's accessibility for every

TABLE 2. Inclusion domains of the GRAIDs framework (40).

Summary	Examples
All structural features for the setting where the program is to be held. Includes but is not limited to buildings, structures, playgrounds, and gyms.	 Elements of a building Ramps Clear paths or sidewalks Curb cuts Doorways Drinking foundations Adequate temperature Lighting
Person-to-person assistance.	 Transportation Aide for a person with a disability Peer assistant in a physical activity program Program advertisements
Any technique used to enhance learning.	 Educational materials or handouts Communication materials Staff uses inclusive language Modeling or demonstrating
Any adapted equipment, products, materials, assistance technological devices or systems.	 Sports or activity related equipment (i.e., handcycle) Signage Utensils Bus lifts Online systems and Web accessibility
Any laws, regulations, rules, protocols, and procedures designed to guide or influence behavior which can be legislative or organizational in nature.	 ADA Internal policy to train staff in disability education Policies for timely snow removal
	Summary All structural features for the setting where the program is to be held. Includes but is not limited to buildings, structures, playgrounds, and gyms. Person-to-person assistance. Any technique used to enhance learning. Any adapted equipment, products, materials, assistance technological devices or systems. Any laws, regulations, rules, protocols, and procedures designed to guide or influence behavior which can be legislative or organizational in nature. ations. Adaptations Including Disability: ADA

participant. PWDs are often the best resource when creating adaptations and accommodations and therefore should be involved in the developmental process. Often, a person with many years of experience living with a functional limitation has adapted activities in his or her daily life and likely has experience as to what will work in each programmatic activity.

An evidence-informed tool to guide program adaptations is the *Guidelines, Recommendations, Adaptations Including Disability* (GRAIDs) (40). The GRAIDs is used in various settings to guide inclusive adaptations, including within program offerings and clinic spaces. The set of inclusion and adaptation recommendations are organized around 5 domains (Table 2). Each domain must be considered when making reasonable adaptations to any program.

CONSIDERATIONS FOR INCLUSION Include PWDs in Decision Making

Most often, it takes more than ramps and accessible parking spaces for PWDs to be fully included in programs and have the same opportunities for successful exercise outcomes as those without disabilities. Many barriers experienced by PWDs cannot be seen but rather are experienced. These include negative attitudes, a lack of knowledge of a particular disability, or difficult communication. As exercise professionals, one of the first steps toward full participation and inclusion of PWDs is an understanding of the universal nature of disability. Disability does not discriminate—it cuts across racial, ethnic, age, socioeconomic status, and gender lines while involving various physical, mental, emotional, sensory conditions, or all of the above. It is important to understand that every disability is different, and the same disability can affect each person differently.

A best practice approach is to treat every person as an individual and always include PWDs in decision making as they are often the greatest resource to achieve an inclusive exercise experience. One strategy to ensure that PWDs are included in program planning, implementation, and evaluation is to form a diversity and inclusion committee. This type of committee is responsible for applying the facilities' inclusion strategies or policies and should represent the full diversity of its facilities and programs. To ensure this goal, it is important to include representation from PWDs. If there is no one on staff at the facility or available to represent PWDs, a committee can develop partnerships with disability organizations or experts. For example, a Center for Independent Living (CIL) is an organization made up of people with and without disabilities whose work is to ensure PWDs can live independently and be active in the community. These CILs often have expertise in promoting accessible environments, programs, and services and can provide consultation on accessibility and inclusion.

A resource to assist with this process is *The Guidelines* for *Disability Inclusion in Physical Activity, Nutrition, and Obesity Program Initiatives*. These guidelines have information to assist with updating health promotion and exercise programs and policies to become fully inclusive of the needs of PWDs (41). Fitness and recreation facilities, as part of a community, should use these same guidelines to promote inclusion within the exercise setting. *The Guidelines for Disability Inclusion* and the *Implementation Manual* can be found online (42).

Make Changes Toward Inclusion

Evidence-informed promising practices for inclusion in health promotion and exercise have resulted in the following basic steps to ensure that all people are given the same opportunity to participate in PA:

- Ensure that the physical environment meets accessibility requirements such as those provided by the ADA.
- Ensure that all programs and services that are offered to the general population are also offered to PWDs, making every attempt to integrate programs instead of offering "special or separate" programs.
- Provide disability awareness education to volunteers and staff.
- Ensure that written materials and other means of communication are accessible and are culturally and linguistically appropriate.
- Ensure that policies and procedures do not discriminate against PWDs or limit their participation.
- Provide necessary adapted equipment to allow PWDs to participate fully, including accessible fitness, sports, or recreation equipment.
- Provide necessary staff training on how to use adapted equipment and how to adapt activities for different kinds of disabilities.

Increase Awareness of Opportunities

Inclusive outreach and marketing activities help to broaden a program's participant base and ensure meaningful inclusion of PWDs. Outreach and marketing of accessible facilities, programs, and activities should be designed in a variety of formats so that all PWDs can access them (e.g., those who are blind). In addition to alternative formats, outreach and communications should be culturally and linguistically appropriate. This includes information that is available in non-English languages often spoken in a region as well as written in plain language that is easy to understand.

A best practice approach is also to make the outreach materials show the inclusion of PWDs through language and visuals which make it explicit that the program is open and available for PWDs. Inclusive marketing approaches help create feelings of belonging, motivation, and identity, which often results in greater participation and supports positive health outcomes. Creating a marketing experience that presents inclusive imagery allows people to see examples of themselves taking part in fitness and health promotion initiatives and conveys a health equity approach that adequate fitness and nutrition applies to everyone. Reaching out to the disabled community through partnerships and local networks can inform program design, implementation, and outreach.

Assess Current Space

The most fundamental requirement for a PWD to engage in regular PA is to have environmental access. Physical access refers to the ability to use the built environment (e.g., recreation centers, fitness gyms, community spaces, parks, trails). This physical environment must be accessible to PWDs for equal and full participation in any health promotion program. In addition, exercise facilities should provide inclusive opportunities for individuals to participate in all group fitness classes as well as independently access adapted exercise equipment that is available and accessible. For many PWDs, a piece of adapted equipment can be the link for meaningful participation. Examples of adapted exercise equipment can include a cuff or straps that allow someone with poor grip strength to maintain a grip on a handle, a handcycle or arm ergometer for cardiovascular activity in those with mobility limitations in their lower extremities, stationary exercise machines with swing-away seats for wheelchair users, medicine balls with straps built in for grip assistance, nonlatex exercise bands and balls for those with allergies, and ankle or wrist weights for those with limited grip or dexterity (Figure 1).

There are many reasons and benefits to consistently measure accessibility of the environment. It allows the facility to identify gaps, strengths, areas in need of improvement, and to prioritize the greatest needs. Once the facility is knowledgeable about its current level of accessibility, exercise professionals can work with consumers to adapt the facilities as needed. Two options of accessibility tools and checklists to help fitness facilities and organizations identify areas where accessibility can be improved are the Accessibility Instruments Measuring Fitness and Recreation Environments (AIMFREE) (32) and the Community Health Inclusion Index (CHII) (43). The AIMFREE focuses on the accessibility of fitness facilities and has a version for both the fitness professional and the consumer. The CHII is more broadly focused and evaluates the capacity of various sectors of a community, including fitness facilities, to support health promotion programs that are inclusive of PWDs. The On-Site and Organizational Assessments can be particularly useful to fitness and health professionals.

Pursue Further Training Opportunities

There are many professional development and learning opportunities in the field of fitness and health promotion for PWDs. The National Center on Health, Physical Activity and Disability (NCHPAD) is an online resource center that provides materials, programs, and services for health and fitness professionals. The NCHPAD Web site (www.nchpad.org) has information to help disability and health professionals, as well as health care providers and individuals with a disability, find ways to participate in PA. Freely available guides such as *Get the Facts, Inclusive Exercise Testing*, and *Discover Accessible Fitness* can help equip service providers with the knowledge to provide a more enriching PA environment for all.

A professional certification is available through the American College of Sports Medicine/NCHPAD Certified





Wrist Cuff



Latex-free bands



Accessible cardio equipment

FIGURE 1. Examples of accessible equipment.

Inclusive Fitness Trainer (CIFT). A CIFT is a fitness professional who has the knowledge and skills to assess, develop, and implement individualized exercise programming for persons with a physical, sensory, or cognitive disability. The scope of practice of a CIFT includes knowledge specifically related to PWDs including exercise physiology; exercise testing and assessment; how to write safe, effective, and individualized exercise recommendations, precautions, and contraindications to exercise; inclusive facility design and current accessibility legislation for fitness facilities; and appropriate instruction and communication skills. Clinical exercise physiologists are eligible to become a CIFT.

CLINICAL IMPLICATIONS

To ensure services are accessible to all individuals, inclusive practices must be used. Inclusion is not limited to physical access, although that is an important part. Also

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Accessible strength equipment with swing away seat

consider the training of those delivering services and providing appropriate equipment or adaptations such that those with various disabilities can participate. Policies to safeguard inclusive practices should be developed, maintained, and upheld by all involved. PWDs must not be an afterthought and must be afforded the same opportunities to improve their health and wellness. Design program offerings, program space, training of personnel, and policies to include PWDs, which will improve the health and wellness of a historically underserved population. Addressing the removal of both physical and social barriers is required to ensure access to PA opportunities as well as empowering the individual. By providing inclusive practices, UD, and adaptations, PWDs can receive PA benefits of prevention or reduction of secondary conditions, improved health outcomes, and increased capacity to engage with their community.

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