Physical Activity Participation Among Persons with Disabilities

Barriers and Facilitators

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Background: The purpose of this study was to identify various barriers and facilitators associated with participation in fitness and recreation programs/facilities among persons with disabilities.

Methods: Focus groups were conducted in ten regions across the United States in 2001 to 2002 with four types of participants: (1) consumers with disabilities, (2) architects, (3) fitness and recreation professionals, and (4) city planners and park district managers. Sessions were tape-recorded and content analyzed; focus group facilitators took notes of identified barriers and facilitators to access.

Results: Content analysis of tape recordings revealed 178 barriers and 130 facilitators. The following themes were identified: (1) barriers and facilitators related to the built and natural environment; (2) economic issues; (3) emotional and psychological barriers; (4) equipment barriers; (5) barriers related to the use and interpretation of guidelines, codes, regulations, and laws; (6) information-related barriers; (7) professional knowledge, education, and training issues; (8) perceptions and attitudes of persons who are not disabled, including professionals; (9) policies and procedures both at the facility and community level; and (10) availability of resources.

Conclusions: The degree of participation in physical activity among people with disabilities is affected by a multifactorial set of barriers and facilitators that are unique to this population. Future research should utilize this information to develop intervention strategies that have a greater likelihood of success.

(Am J Prev Med 2004;26(5):419–425)

Introduction

Despite the volume of evidence indicating the benefits of regular physical activity for health and functioning, people with disabilities are far less likely to engage in physically active lifestyles than are people without disabilities.[1–8] According to the *Healthy People 2010* report, 56% of adults with disabilities do not engage in any leisure-time physical activity compared to 36% among adults without disability.[8] Promoting moderate levels of physical activity among people with disabilities is an important goal for public health and public policy, as regular physical activity improves well-being and contributes to the prevention or delay of chronic disease.[9]

Little is known about why the majority of people with disabilities fail to integrate regular physical activity into their lifestyle. It has been suggested that an understanding of potential barriers and facilitators that affect participation by people with disabilities could provide important information necessary for developing interventions that have a greater likelihood of success.[10–13] Unfortunately, published literature on barriers and facilitators associated with participation in physical activity among people with disabilities is limited.[14–16]

Historically, accessibility to public spaces has limited the opportunity for people with disabilities to engage in social and recreational activities.[17] One study on access to environmental settings among adult wheelchair users, including recreational and leisure facilities, reported that many people who use wheelchairs were unable to gain access to these facilities because of such barriers as bad weather or climate, no curb cuts or blocked curb cuts, limited strength or fitness, inaccessible doors and bathrooms, no parking, poor travel surfaces, obstructed travel, personal illness, no ramps or ramps too steep, and wheelchair problems.[15] Rimmer et al.[16] reported a large number of barriers to physical activity among African-American women with physical disabilities. Barriers included lack of transpor-

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0749-3797/04/$–see front matter
doi:10.1016/j.amepre.2004.02.002

tation, inability to pay for a fitness membership, lack of knowledge on where or how to exercise, and lack of understanding on the importance of exercise in improving their condition or health.

Title III of the Americans with Disabilities Act (ADA) addresses the issue of accessibility by establishing public and commercial facility standards for people with disabilities.[18] (The ADA is a federal law passed in 1990 to protect the rights of people with disabilities.) Yet, emerging research indicates that access to fitness and recreation facilities is still a major barrier to physical activity for persons with disabilities. Studies conducted in the Kansas City metropolitan area,[19] Topeka, Kansas,[20] and western Oregon[21] using an accessibility survey that consisted of items taken from the ADA guidelines and tailored to fitness centers found that none of the assessed physical activity sites were 100% compliant with the ADA. Only 8% of exercise equipment areas, 55% of drinking fountains, and 37% of the customer service desks in facilities surveyed in western Oregon were accessible to persons with disabilities.[21] Similarly, one study involving individuals with arthritis that utilized a survey designed to assess barriers and facilitators related to participation in exercise reported inaccessibility of exercise programs due to lack of transportation and accessible exercise facilities.[22]

To date, there has never been a systematic review of barriers/facilitators associated with participation in physical activity among people with disabilities. Likewise, there is no information available on barriers and facilitators to physical activity participation reported by professionals who work in fields related to physical activity environments that involve structural or program development (i.e., architects, city managers, fitness and recreation professionals). Additional research on personal and environmental barriers and facilitators is needed to build an infrastructure for future program development and appropriate facility and community design that will enhance participation among people with disabilities. The purpose of this study was to identify barriers and facilitators associated with physical activity participation as perceived by people with disabilities, and professionals who have a direct or indirect influence on accessibility of physical activity and recreation facilities and programs for people with disabilities.

Methods

Participants

Focus groups were conducted in ten regions across the United States in 2001 to 2002 involving individuals with disabilities and professionals. Participants were recruited through the ten regional offices of the Disability and Business Instructional Technology Assistance Centers (DBITACs), which are federally funded centers designed to provide technical assistance to businesses and persons with disabilities regarding the ADA. The focus groups were conducted in the following cities: Atlanta, Baltimore, Berkeley, Boise, Boston, Chicago, Denver, Houston, Kansas City, and Syracuse. Within each region, four to six individuals were recruited to participate in each of four focus groups. The four focus groups included: (1) people with disabilities, (2) architects, (3) fitness/recreation professionals, and (4) city planners and park district managers. The demographic data for participants with disabilities are presented in Table 1.

Table 1. Sample demographics of focus group participants with disabilities

Variable	Mean	SD
Age	40.19	12.84
	N	**%**
Gender		
Male	23	54.8
Female	19	45.2
Health condition		
Limited ability using arms or hands	11	25.6
Limited ability using legs	18	41.9
Spinal cord injury	23	53.5
Back problems	3	7.0
Personal assistance		
Assistive device	22	51.2
Personal assistant	4	9.3
Both	11	25.6

SD, standard deviation

Procedures

Focus groups were facilitated by two members of the research team who traveled to the designated cities to conduct the sessions. At the beginning of each focus group session, group facilitators explained the purpose of the study and obtained consent from participants using an informed consent document approved by the university's Institutional Review Board. Focus group participants were instructed to address access issues related to four types of fitness/recreation venues: (1) fitness centers, (2) swimming pools, (3) parks, and (4) trails.

Data Analysis

Each of the four sets of focus groups provided a unique perspective on issues related to fitness and recreation facility accessibility. Notes taken during focus group sessions were analyzed in 2003 using a note-based approach according to the procedures of Kruger.[22] Note analysis provided an identification of major themes, (i.e., barriers and facilitators). Investigators were responsible for identifying and defining these themes. Tape recordings of focus group sessions were then content analyzed by two research assistants according to the themes identified through note analysis.

Results and Discussion

The results of this qualitative study found that there were a number of personal and environmental barriers and facilitators related to access and participation re-

Table 2. Major categories of barriers and facilitators and their definitions

Category	Definition
Built and natural environment	Barriers or facilitators relating directly to aspects of the built or natural environment
Cost/economic	Barriers or facilitators relating to the cost of participating in recreation/fitness activities or costs associated with making facilities accessible
Equipment	Accessibility of exercise and recreation equipment
Guidelines, codes, regulations and laws	Issues related to the use and interpretation of laws and regulations concerning accessibility of information, particularly building codes and the ADA
Information	Access of information both within the facility (e.g., signs, brochures) and in facility brochures and advertisements
Emotional/psychological	Physical, emotional, or psychological barriers to participation in fitness and recreation activities among persons with disabilities
Knowledge, education, and training	Barriers and facilitators regarding the education and training of professionals in the areas of accessibility and appropriate interactions involving people with disabilities
Perceptions and attitudes	Perceptions and attitudes of both professionals and non-disabled individuals toward accessibility and persons with disabilities
Policies and procedures	Barriers imposed by the implementation of facility or community-level rules or regulations
Resource availability	Needed resources that would allow persons with disabilities to participate in fitness and recreation activities, including transportation and adaptive equipment

ADA, Americans with Disabilities Act

ported by both people with disabilities and professionals affiliated with fitness and recreation facility design and/or program development (city planners and park district managers, fitness and recreation professionals, architects). These barriers and facilitators were grouped into ten major categories that are defined in Table 2.

Barriers and Facilitators in the Built and Natural Environment

Barriers. Members in all four groups (persons with disabilities, fitness and recreation professionals, architects, and city planners/park district managers) expressed the view that the natural environment is inherently inaccessible. This included lack of curb cuts, inaccessible access routes, doorways being too narrow for wheelchair access, facility front desk being too high for persons in wheelchairs to communicate with the person at the desk, and lack of elevators. Participants with disabilities specifically mentioned difficulty in accessing hot tubs and saunas, explaining that doors to saunas are too narrow and ramps are seldom available for access to hot tubs or whirlpools. Members in the architect group also highlighted safety issues, including slippery floors and the absence of handrails on stairs.

Facilitators. Several facilitators were mentioned by the four different focus groups to address built-environment barriers in fitness centers. These included providing nonslip mats in locker rooms; providing an adequate number of accessible parking spaces; installing push-button operated doors; constructing multilevel front desks that can accommodate both wheelchair users and nonwheelchair users; lowering or removing door thresholds to facilitate wheelchair access; providing ramp access to whirlpools and hot tubs; and in new construction, building zero-depth entry pools that can be entered by a person using a wheelchair without the need for a ramp or pool lift. One of the most frequently mentioned facilitators was to provide family changing rooms, which would make it easier for parents to help their children with disabilities with changing, or in situations where a person with a disability needs assistance dressing and undressing usually by another family member or a personal assistant. All of the groups were in agreement that making the built environment more accessible would be beneficial to all members of the facility, particularly older adults who often have similar functional limitations in terms of accessing various parts of a facility.

Cost/Economic Barriers and Facilitators

Barriers. According to members in the fitness professional group, budgetary restraints are particularly severe in small facilities and facilities located in rural areas. Several focus group members in both the consumer and fitness/recreation professional groups indicated that facility owners and managers are more concerned with the "bottom line," placing a greater priority on profit than accessibility. Several participants in all of the groups indicated that retrofitting existing facilities to comply with ADA guidelines is far more costly than designing and building an accessible facility from the outset. As one focus member pointed out,

"The worst thing that can happen is to not do it right the first time." The cost of maintaining facilities, including facility equipment, was mentioned as another barrier by the fitness/recreation professional group participants. With respect to equipment, members in the consumer and fitness/recreation groups indicated that the high cost of adaptive equipment makes its availability limited.

Focus group members, particularly those in the consumer group and less so in the other groups, noted that membership and transportation costs are the primary economic barriers directly affecting their ability to access recreation and fitness facilities. Not only do persons with disabilities have fewer economic resources compared to their nondisabled counterparts, as some members in the consumer group indicated, they are often expected to pay the same membership fee as persons without disabilities, even though the facility is not fully accessible.

Facilitators. Several common facilitators were proposed by all of the groups to address the costs related to the design and construction of accessible facilities. Avoiding retrofit costs by designing and building an accessible facility from the outset was a consistent theme, particularly among members in the architect groups. Others suggested that accessibility should be included as a line item in facility budgets, that grant funding be sought in order to support accessibility-related projects, and that tax credits be given to facility owners who update their facilities in order to comply with the ADA. In response to costs associated with joining a facility, several participants in all of the focus groups suggested that owners/managers provide scholarships and/or sliding fees to persons with low incomes, which often includes people with disabilities. Team sponsorships to support athletic programs for persons with disabilities and soliciting donations from major corporations were also mentioned by the consumer group.

Equipment-Related Barriers and Facilitators

Barriers. Members of the consumer and fitness/recreation professional groups identified three main equipment-related barriers: not enough space between equipment for wheelchair access, poor equipment maintenance, and lack of adaptive and/or accessible equipment.

Facilitators. Several recommendations were made by both the consumer and fitness/recreation professional groups regarding the need for more adaptive equipment, including pool water chairs, Velcro straps to allow individuals with disabilities to grip exercise equipment, upper-body aerobic exercise equipment, and strength equipment that does not require transferring from a wheelchair to the machine. It was also recommended by the consumer group that facilities seek input from persons with disabilities regarding exercise equipment purchases.

Barriers and Facilitators Related to ADA, Building Codes, and Other Guidelines

Barriers. This theme was concerned with the interpretation, implementation, and effectiveness of guidelines related to the ADA and building codes. Architects were the most vocal with respect to this category. Several members expressed the view that adherence to ADA guidelines and building code regulations stifles the creativity of architects, preventing them from being more creative in designing buildings or use areas that would be accessible to persons with disabilities. Some members in the architect group indicated that while the ADA provides only a minimum standard of accessibility, most architects are reluctant to stray from ADA and building code guidelines in order to design a more accessible facility. Others indicated that the ADA should be viewed as guidelines or recommendations rather than as strict or "absolute" regulations. Further, some members contended that following these guidelines does not guarantee that the facility will be accessible. A few architects commented that building codes are often confusing and difficult to interpret. As might be expected, the other groups did not provide substantive input regarding ADA and building code regulations.

The consumer and city planner/park district manager groups noted that the ADA is often not enforced, and, in some cases, taking legal action in response to ADA violations is the only way to force facility owners to take positive steps towards improving their facility's accessibility. One member of the architect group also indicated that some facility owners or managers would claim that the facility is in compliance with ADA guidelines without any review or assessment process to ensure ADA compliance. In both the architect and the city planner/park district manager groups, a prominent theme was the challenge of complying with ADA guidelines while preserving the natural surroundings of parks and trails.

Facilitators. Members in all four focus groups recommended that legislation is needed to enforce ADA guidelines.

Information-Related Barriers and Facilitators

Barriers. Both professional and consumer groups noted that there is a lack of information regarding available and accessible facilities and programs in their community. Fitness professionals also indicated that they need more information about adaptive equipment.

Members in each of the four focus groups raised issues related to professional knowledge, education, and training. Generally, the three professional groups addressed issues specific to their own discipline. Several fitness/recreation professionals commented that fitness facility staff, such as personal trainers, are not knowledgeable about disabilities and do not understand the rationale or "why" behind the ADA. Members in both the fitness/recreation professional and city planner/park district manager groups indicated that staff in both fitness and recreation facilities are not knowledgeable in terms of how to adapt programs and equipment in order to make it more accessible to people with disabilities. Consistent with comments in the fitness/recreation professional group, consumers with disabilities indicated that fitness center employees are often not knowledgeable about disabilities. Consumers also indicated that "front-line" employees are frequently not knowledgeable about available programs and services that are accessible to persons with disabilities.

Facilitators. According to several members of the professional focus groups, there is a strong need for various forms of support that will allow them to gain additional training and education related to accessibility issues and persons with disabilities. For example, several participants noted that facility management should support the continued education and training of professional staff by providing release time for seminars and workshops, or by providing on-site workshops or seminars for employees.

Emotional and Psychological Barriers and Facilitators

Barriers. Focus group members, particularly those in the consumer and fitness/recreation professional groups, identified several psychological and emotional barriers. The most frequently cited reason for the reluctance of persons with disabilities to use fitness and recreation facilities was the perception that these facilities are unfriendly environments. This perception was often made in connection with other comments regarding the negative attitudes and behavior of persons without disabilities, including professionals working in the facility and nondisabled individuals who use the facility. Similarly, members in the consumer group indicated that they felt self-conscious when visiting a fitness facility. Other psychological or emotional barriers identified by consumers included fear of the unknown, concerns about needing and requesting assistance, and lack of support from friends and family to access and participate in fitness and recreation facilities or programs.

Fitness and recreation professionals noted that feeling self-conscious in a fitness facility, lack of support from friends and family, perception of facility as unfriendly, fear of the unknown, and fear of failure were major emotional/psychological barriers experienced by persons with disabilities. Several fitness/recreation professionals also stated that persons with disabilities frequently feel that they are unable to participate in physical activity and that children with disabilities do not participate in physical activity often because many family members are overprotective.

Facilitators. Members in the consumer, fitness/recreation professional, and park district manager/city planner groups recommended that making facilities friendlier would help to minimize emotional and psychological barriers to participation. Consumer group members in particular indicated that professionals need to present themselves as being more friendly and motivated when interacting with persons with disabilities. In addition, opportunities need to be offered to persons with disabilities to "test the water" through the use of free passes to facilities, allowing them to determine their comfort level before joining the facility. Peer support, facility orientations, and rehabilitation professionals (i.e., physical and occupational therapists) assisting with the transition from rehabilitation to community transition programs were also mentioned by the consumer group as a means of reducing the reluctance of people with disabilities to join and participate in fitness and recreation facilities and programs.

Perceptions and Attitudes Related to Accessibility and Disability

Barriers. Consumers indicated that professionals working in fitness and recreation facilities as well as the owners of these facilities tend to view accessibility as either a "necessary evil" or as unimportant, believing that persons with disabilities are not interested in engaging in fitness or recreation activities. Consumers also stated that facility owners may not wish to include persons with disabilities in fitness or recreation programs due to fears concerning liability in the event of injury. Members in the fitness/recreational professional focus group identified staff laziness, negative attitudes toward persons with disabilities, and concerns about liability as major barriers.

Facilitators. The costs associated with accessibility need to be viewed as an investment to meet the needs of a growing number of consumers who will use facilities and facility programs provided that they are accessible. Similarly, as one participant noted, facility owners need to be aware that persons with disabilities are often accompanied by family and friends who bring added revenue to the facility.

All of the focus group participants generally agreed that professionals need to be more aware of and

sensitive to the needs of persons with disabilities. Proposed methods of fostering greater awareness and sensitivity included having students in related fields and professionals use wheelchairs, crutches, and other assistive devices in order to have a firsthand experience of facility barriers, as well as bringing them in contact with persons with disabilities.

Policies and Procedures

Barriers. There was general consensus among the groups that fitness and recreation facilities lack policies that are relevant to persons with disabilities. Similarly, facilities often do not have a designated staff member who is responsible for accessibility issues. Facilities frequently do not provide sufficient time for persons with disabilities to use the facility. For example, several focus group members noted that fitness facilities may have open swim periods that are too short to allow an individual with a disability to access the facility and change and enter the pool. Policies regarding permission to use service animals in facilities and charging membership fees to personal assistants were also mentioned as barriers. Members of the architect group pointed out that facilities often fail to adopt a maintenance plan that would help ensure the accessibility of the facility and facility equipment. At the community level, city planners as well as consumers frequently cited lack of transit planning as an important barrier to facility access.

Facilitators. Members in the three professional groups indicated that, as a step toward developing more disability-specific policies, facilities must implement their own accessibility review process. Professionals also recommended that facilities should be responsive to requests by persons with disabilities to adapt equipment in order to make it more accessible, and that facilities should be responsive to and have a formal review process for accessibility-related complaints. The consumer group also noted that prorating membership fees based on facility accessibility was a good way to recruit new members with disabilities.

Despite the costs often associated with improving facility accessibility, several members in each of the focus groups pointed out that accessibility needs to be seen, particularly by facility owners and managers, as a value-added benefit.

Lack of Resources

Barriers. Lack of transportation and accessible facilities and problems regarding facility staffing were most frequently cited as resource barriers by all four focus groups. Fitness/recreation professionals and city planners/park district managers also commented that there is a dearth of fitness and recreation programs that are accessible to persons with disabilities, particularly in rural areas.

Facilitators. Several members of the fitness/recreation professional, park district manager/city planner and consumer groups recommended that neighboring communities with limited funds should pool their resources in order to provide accessible facilities and programs that benefit persons with disabilities in both communities. Several members also recommended that free or reduced fee transportation be provided to persons with disabilities in order to get to and from the facility. Hiring volunteers and/or student interns, particularly students with training in adapted physical education or therapeutic recreation, was recommended by members of the fitness/recreation group as an inexpensive means of addressing staff retention problems as well as providing services tailored to the needs of persons with disabilities.

Conclusion

It is clear from the many and diverse responses provided by the four sets of focus group participants that access to physical activity venues by people with disabilities is a complex, multifaceted issue. Moreover, access can be viewed from the perspective of the person with the disability or the professional who works in the facility or has some association with its structure and design. These perceptions could potentially be quite different in terms of whether a facility is considered accessible.

Several investigators have expressed the need to identify a greater array of behavioral and environmental factors that may serve as potential mediators of physical activity change in specific subpopulations.[11,12,24,25] An emerging area of research involves the identification of "high-level" factors that increase physical activity participation at both the personal and environmental levels.[26–30] In a recent paper by Satariano and McAuley[31] regarding the promotion of physical activity among the elderly, it was recommended that an ecologic model be established to identify biologic, behavior, and environment factors related to participation. Clearly, there is a similar need among people with disabilities. It is hoped that the qualitative data reported in this study will assist future investigators in designing an ecologic model that encompasses the many personal and environmental factors identified by the key constituents in this study.

Finally, there is also a strong need to develop valid and reliable assessment instruments that measure both personal and environmental factors related to participation in physical activity among people with disabilities and professionals who work in these settings, in order to identify specific issues related to accessing a facility or program. The host of responses made by our

four groups of participants is a clear indication that there are a multitude of barriers and facilitators that may affect accessibility among people with disabilities and that transcend issues involving populations that do not report having a disability. Future research must identify what personal and environmental factors have the strongest association with participation or nonparticipation in physical activity using instruments that are valid and reliable for this population.

This work was supported, in part, by the Centers for Disease Control and Prevention, National Center on Birth Defects and Developmental Disabilities, Division of Human Development and Disability (R04CCR514155), and the National Institute on Disability and Rehabilitation Research (H133E020715). We are grateful to Robin Jones for her assistance in organizing the data-collection procedures with the Disability and Business Instructional Technology Assistance Centers.

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