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Research Paper

Perceived benefits and barriers to exercise among persons with physical disabilities or chronic health conditions within action or maintenance stages of exercise

Laurie A. Malone, Ph.D.[a,*], J.P. Barfield, D.A.[b], and Joel D. Brasher, M.A.Ed.[a]

[a]*Lakeshore Foundation, 4000 Ridgeway Dr., Birmingham, AL 35209, USA*
[b]*Endicott College, Beverly, MA, USA*

Abstract

Background: Information regarding factors that affect the initial step to exercise behavior change among persons with physical disabilities or chronic health conditions is available in the literature but much less is known regarding perceived benefits and barriers to exercise among those who are regularly active.

Objective: The purpose of this study was to examine the perceived benefits and barriers to exercise among persons with physical disabilities or chronic health conditions within action or maintenance stages of exercise.

Methods: Participants ($n = 152$) completed the Exercise Benefits and Barriers Scale (EBBS). For data analyses, disabilities and health conditions were grouped as neuromuscular, orthopedic, cardiovascular/pulmonary, or multiple conditions. Multivariate analysis of variance (MANOVA) was conducted to determine if mean differences on EBBS benefits and barriers scores existed among disability types, between sexes, among age groups, and between physical activity levels. Sum scores were computed to determine the strongest benefit and barrier responses.

Results: No significant mean differences in EBBS scores were found between disability types, sexes, age groups, or physical activity levels ($p > 0.05$). Strongest benefit responses varied by group. Strongest barrier responses were the same for all demographic groups: ''Exercise tires me,'' ''Exercise is hard work for me,'' and ''I am fatigued by exercise.''

Conclusions: EBBS scores were similar across disability/health condition, sex, age, and physical activity level. Primary benefits reported were in the areas of improved physical performance and psychological outlook whereas the primary barriers were in the area of physical exertion.

Keywords: Physical activity; Physical disability; Health promotion; Transtheoretical model

Introduction

Today, more than fifty million Americans, or approximately 20% of those living in the United States, have at least one self-reported disability.[1,2] By definition, ''disability'' is universally accepted as an impairment that limits one or more activities of daily living.[1] While the importance of physical activity in improving health and wellness for people with disabilities is clear and many disabilities can be delayed or even prevented with good health habits, the majority of people with disabilities are not active at levels needed to achieve the physical and mental health benefits of regular exercise.[1,3]

Poor health promotion behaviors, sedentary lifestyles and lack of available health promotion opportunities lead to an increase in the occurrence of secondary conditions in people with disabilities.[1,4–8] Conditions, such as coronary artery disease, hypertension, and depression, often secondary to disability, are costly, comprising 47% of all medical expenditures in the United States.[9] Recent studies highlight the fact that physical activity and other positive lifestyle behaviors are actually more critical for people with disabilities than for those without, in part because a sedentary lifestyle places them at an increased risk for the very secondary conditions critical to avoid.[1] It is clear that people with disabilities engage in less leisure physical activity, smoke more often, have higher cholesterol levels and have higher blood pressure levels than persons without

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* Corresponding author. Tel.: +1 205 313 7476; fax: +1 205 313 7475.
E-mail address: lauriem@lakeshore.org (L.A. Malone).

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disabilities.[8,10] Additional evidence has demonstrated that people with disabilities have higher rates of obesity than those without disability, which is in part attributed to limitations in physical activity.[11]

Lack of physical activity and other health risk behaviors are also found to be associated with lower health-related quality of life, higher risk of death and disability, and restricted ability to carry out usual daily activities, including work and social interactions.[12–15] Inactivity, specifically, has been cited as a major contributing factor in deteriorating aerobic capacity, muscular fitness, and flexibility, ultimately restricting functional independence and increasing risk for chronic disease complications.[4,16,17] Moreover, people with disabilities report significantly lower scores for health status and quality of life when secondary conditions are present.[18–20]

Benefits of and barriers to health promotion

Prevention or reduction of risk factors (i.e., lack of physical activity, poor diet, overweight/obese, smoking) associated with poor health and chronic disease (e.g., cardiovascular disease, stroke, obesity and type-2 diabetes) is a nationwide priority as identified in Healthy People 2020[8] and is essential for all persons. The most common framework for studying health promotion decision-making among persons with physical disabilities, specifically perceived benefits of and barriers to exercise, has been examined across various subsets of individuals with disabilities.[16,21–27] Consistent barriers to health promotion efforts have included cost of the program, lack of awareness of fitness facilities, lack of access to fitness facilities, lack of transportation to a fitness center, and lack of knowledge of how or where to exercise. Fortunately, consistent perceived benefits of exercise have also been identified which in turn can encourage exercise or lifestyle change. Specially, family changing rooms, adaptive equipment, knowledge about exercise, positive influence from personal contacts, and policy changes encouraging accessibility and education all are believed to encourage behavior change.

After a behavior change occurs, motivation to continue is often difficult, but critical.[28] Kosma, Cardinal, & Rintala[29] confirmed the Transtheoretical model as appropriate for monitoring behavior change among individuals with disabilities with respect to physical activity. This model classifies behavior change through various stages, including contemplation (considering an exercise change), action (actual behavior change sustained less than 6 months), and maintenance (behavior change sustained greater than 6 months).[30] Many studies identifying benefits of and barriers to exercise have surveyed participants either cross-sectionally (i.e., no defined stage of change)[21,23,24,26] or just prior to intervention (i.e., contemplation).[25] However, minimal evidence exists specifically delimited to individuals within the action or maintenance stage.[31,32] That is to say, information about factors that affect the initial step to exercise behavior change is available in the literature but much less evidence exists specific to benefits of and barriers to exercise among those who are regularly active. Adherence to physical activity and other healthy behaviors is a major issue for many, and without maintenance of regular physical activity, the numerous health benefits gained will not be sustained.[33] Understanding the perceptions of individuals in these stages of exercise will help in developing programs that address identified needs and potentially result in better exercise maintenance/adherence to help ensure continued exercise. To combat this gap in the literature, a better understanding of the reasons why active individuals with disabilities choose to remain regularly active is needed. Therefore, the purpose of this study was to examine the perceived benefits and barriers to exercise among persons with physical disabilities or chronic health conditions within action or maintenance stages of exercise. Because demographic differences can affect perceptions of exercise, we examined benefits and barriers by disability type, sex, age, and physical activity level.

Methods

Participants

Volunteers were recruited from members of a health and wellness facility that offers fitness, recreation and sport programs for persons with physical disabilities and chronic health conditions and their family members. The facility was designed to be accessible (i.e., parking area, locker rooms, exercise equipment, swimming pools) with program staff expertise in the areas of adapted physical activity or therapeutic recreation. In addition, scholarships are available to minimize financial barriers. Approximately 350 to 375 individuals visit the facility each day. Participants reported various types of disabilities or chronic conditions considered to be neuromuscular (e.g., cerebral palsy, Parkinson's disease, spinal cord injury, stroke, traumatic brain injury), orthopedic (e.g., amputation, arthritis, low back pain, scoliosis), cardiovascular or pulmonary (e.g., chronic obstructive pulmonary disorder, dyslipidemia, heart disease, hypertension,) and multiple (i.e., combination of two or more disabilities or chronic conditions). Minimum age was limited to 18 or above based on criteria of the survey tool used. IRB approval was obtained for the project with completion of the survey considered as assent.

Measures

Participants completed the Exercise Benefits and Barriers Scale.[34] The EBBS contains 43 statements regarding the perceived benefits and the perceived barriers to exercise with a four-response, forced-choice Likert format from 4 (strongly agree) to 1 (strongly disagree). The scale contains 14 barrier items and 29 benefit items. The possible range of scores on the benefits scale is