

Review Article

# Secondary analysis of a scoping review of health promotion interventions for persons with disabilities: Do health promotion interventions for people with mobility impairments address secondary condition reduction and increased community participation?

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## Abstract

**Background:** Secondary conditions can have very serious outcomes for people with physical disabilities. Such consequences can range from immobility due to pressure sores to withdrawal and isolation due to depression, decreasing participation in the community.

**Objective/Hypothesis:** To further investigate these assumptions, we conducted a review of the literature on health promotion interventions that include physical activity for adults with disabilities to determine whether they have a positive effect on the reduction of secondary conditions and increased community participation.

**Methods:** We conducted a secondary analysis of the results of a scoping review of health promotion programs containing physical activity for people with mobility impairments (N = 5). This secondary analysis examined the relationship between health promotion containing physical activity and prevention of secondary conditions among people with various physical disabilities. We further examined evidence and effects of independent variables on the outcome of increased community participation for study participants.

**Results:** The outcomes from this investigation are varied, with 2 studies providing evidence of reducing secondary conditions while another shared anecdotal statements referencing a decrease in secondary conditions. Of the remaining 2 studies in this paper, 1 showed no intervention effect on reducing secondary conditions while the remaining study reported an increase in secondary conditions. Regarding increased participation in the community, 2 of 5 studies directly reported on these outcomes, while increased community participation was referenced in another 2 articles, but without any data presented. The final study did not report on any post intervention in the community.

**Conclusions:** This review demonstrates that research on health promotion interventions containing physical activity lack description about whether such interventions help reduce or prevent secondary conditions. Additionally, the review shows that further work is needed in terms of sustaining health programs effects beyond the initial proximal activity gains, with attention given toward more distal outcomes of increased participant participation in the community. © 2011 Published by Elsevier Inc.

**Keywords:** Health promotion; Physical activity; Secondary conditions; Community participation; Physical disability; Mobility impairments; Research to practice

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In 1995, a joint recommendation by the Centers for Disease Control and Prevention (CDC) and the American College of Sports Medicine (ACSM) suggested that “every US adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week” [1, p. 404]. These recommendations were more recently revised to more intense standards, such as “...perform moderate-intensity aerobic (endurance) physical activity for a minimum of 30 min on 5 days each week or vigorous-intensity aerobic activity for a minimum of 20 min on three days each week” [2, p. 1089]. Concurrent with these recommendations to help Americans

increase their physical health, the US Public Health Services has increased its own objectives for healthy living for the nation [3]. The intent of these objectives is to enhance or maintain good health and to reduce health disparities with universal initiatives for the general population [4,5], and more specific initiatives for those who are at higher health risk [6,7]. For the first time a chapter was specifically targeted toward people with disabilities. Chapter 6: Disability and Secondary Conditions contained 13 specific objectives, while other disability and health objectives were integrated into the rest of the Healthy People 2010 document [8]. The dedication of a specific chapter to the health of Americans with disabilities speaks to the seriousness of health disparities for people with disabilities. Population-based study data provides compelling evidence of these disparities. One source of such data is the Behavioral Risk Factor Surveillance System (BRFSS), randomly dialed telephone survey conducted in every US state and territory of noninstitutionalized civilians in the US population who are age 18 or over. Data from the 2005 BRFSS national sample indicated that respondents with a disability reported they were twice as likely to be physically inactive compared to their nondisabled peers (25.6% vs. 12.8%) ( $p < 0.01$ ) [9]. A 2002 application of the BRFSS across 8 states and the District of Columbia had identified a clear disparity in obesity levels between adults with and without disabilities [10]. Nondisabled populations obesity rates were 16.5%, while the rate of obesity rate for people with disabilities was 27.4%.

In spite of these disheartening data, there is encouraging news. Documentation of health disparities for people with disabilities has led to more attention to disability public health policy, research, and knowledge transfer toward practical approaches to improve health for people with disabilities. One area that has expanded in recent years is the area of health promotion research. Health promotion (HP) studies can cover a wide variety of topics ranging from increasing flexibility and range of motion [11,12] and enhancing conditioning [13,14] to reducing obesity [15–17] and heart disease [18,19]. Research evaluating exercise programs with participants with disabilities has shown positive results in terms of obesity reduction [17] and increased activity levels [17,20,21]. Recently, guidelines for the implementation of community based health promotion programs for individuals with disabilities have been developed by an expert panel. The guidelines consist of operational, participation, and accessibility recommendations and address the role of people with disabilities in program planning, implementation, and evaluation, physical and programmatic accessibility of health promotion programs, and the importance of evidence-based practices [22].

While some advances are being achieved in the area of HP, more research is needed to examine the effects of health promotion containing physical activity components and its effects on reducing secondary conditions and increasing participation within the community. Pope and

Tarlov define a secondary condition as a “condition that is causally related to a disabling condition and can be either a pathology, an impairment, a functional limitation or an additional disability” [23, p. 214]. A more recent Institute on Medicine report suggested that secondary conditions are connected through common physiological processes or functional characteristics across several different primary health conditions” [24, p. 141]. Secondary conditions may be of a physical nature, such as obesity, deconditioning, shoulder joint problems, or pressure sores, or of a psychosocial nature, such as depression [25]. Emerging work is beginning to examine the efficacy of interventions that enhance health and increase physical activity to reduce secondary conditions for people with physical disabilities [26–29].

While HP interventions containing physical activity can help reduce secondary conditions, we were also interested in its effect on increased community participation by those who received the intervention. Why is this important? Community participation for people with disabilities has continued to serve as the “gold standard” of outcome measurement in disability and rehabilitation [3,30–37]. One of the proposed objectives for the section on disability and secondary conditions in Healthy People 2020 is reducing the proportion of adults with disabilities who report barriers to participation in settings such as work, school, and the community [38].

However, full community participation of people with disabilities has remained an elusive goal. Despite substantial progress through deinstitutionalization, anti-discrimination policies, community-based service providers and systems of care [39,40], people with disabilities still face many barriers in accessing various aspects of their communities necessary to achieve the “enhanced participation” advocated in the National Institute on Disability and Rehabilitation Research (NIDRR) long-range plan [35, pp. 43538–43539]. As a result, people with disabilities experience more social isolation, poorer health and socioeconomic status [41,42], and less satisfaction when they do participate compared to people without disabilities [43,44].

There are many personal and environmental barriers that deter people with disabilities from full participation in the community. These barriers include the lack of accessible transportation [45], education [46,47], employment [48], public accessibility [49], and health care [7,50,51]. Another potential barrier that merits further investigation is the level of one’s personal health to be able to participate in the community.

For the current study, we conducted a secondary analysis of the results of a scoping review of HP programs for persons with disabilities [52]. The purpose of the initial scoping review was to examine interventions that promote health and wellness and minimize the occurrence of secondary conditions among persons with sensory, mobility, or communication disabilities. The goal of the scoping review was to provide a detailed description of

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