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Disability and health behavior change

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Abstract

Objective/hypothesis: We conducted a review of four health behavior change (HBC) theories (Health Belief, Theory of Planned Behavior, Social Cognitive, and Transtheoretical) to consider how these theories conceptually apply to people with disabilities.

Methods: We identified five common constructs across HBC theories and examined how these commonalities fit within the *International Classification of Function (ICF).*

Results: Four of the HBC constructs appear to be Personal Factors within the *ICF,* while the fifth represents Environmental Factors.

Conclusions: Using the *ICF* framework to understand disability and HBC, we propose that including a sense of meaning as another personal factor will further develop HBC theories that lead to more effective HBC interventions for people with disabilities.

Keywords: Health behavior change; Health education; International classification of functioning

The determinants of health are varied and complex [1]. They include environmental factors like air quality and available health care and personal factors like genetics and individual behavior. Adding to the complexity is the interaction of these factors. Health outcome is an interaction between an individual's genetics and behavioral choices within specific environments. Having a disability may influence the interaction between health determinants and may have important implications for promoting and maintaining health status.

Historically, disability has been equated with illness, and only recently have these concepts been disentangled [2,3]. The ''new paradigm'' of disability shifts the locus of disability from the individual to the interaction between the individual and the environment. As an example, the World Health Organization's taxonomy of disability distinguishes between health conditions and disability [4]. This framework suggests that disability is an outcome of a health condition only when personal, social, and/or environmental factors limit an individual's participation in specific life domains. It is the conceptual separation of disability and health status that suggests the potential value of health promotion for people with disabilities [5,6].

Health behavior change (HBC) theories are psychosocial theories developed to explain observed differences in health behavior and to guide development of HBC interventions [7]. They are used to increase adoption of health protective behavior (e.g., exercise) and reduce risky behaviors (e.g., smoking). Over time, they have become increasingly complex to more accurately predict behavioral and health outcomes. This complexity has included environmental and dynamic person/environmental interaction variables [8]. As early as 1986, the World Health Organization's Ottawa Chapter on health promotion [9] described health promotion ecologically, making clear linkages between health and the social and political environment. Even so, the behavior of the individual was and still is considered central to health status.

Despite congruence between ecological models of health promotion and the ''new paradigm'' of disability, theoretical and empirical work is needed to guide health behavior intervention development for people with disabilities. In fact, little is known about the effect of disability on HBC processes [10]. Researchers have only begun to apply conceptual models of health promotion to people with disabilities [11]. In the absence of such empirical work, disability and health researchers have based interventions on existing HBC theories [11-15]. The purpose of this paper is to review commonly cited theories of HBC and to discuss their application with people who have disabilities. We will suggest that HBC models apply in a unique way to people with disabilities because common personal and environmental factors (e.g.,

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social norms and environmental barriers) are often systematically different for people with disabilities. We will also suggest that adding "sense of meaningfulness" [16] to current HBC theories may incrementally increase their effectiveness for people with disabilities by helping people link HBC to meaningful participation goals.

Approach

To examine the role of disability in HBC, we selected four HBC theories that are widely cited in the literature [10], including Health Belief [17,18], Theory of Planned Behavior [19,20], Social Cognitive [8,21], and Transtheoretical [22,23] theories. We examined these HBC theories by reviewing descriptions written by either the developer or major contributor to each of the theories [24]. After abstracting the major components of each theory, we identified conceptual commonalities across theories and applied them to the rubric of disability. The identified commonalities included outcome expectations, self-efficacy, social norms, reinforcement management and stimulus control, and environmental facilitators/barriers. In our judgment, each of the HBC theories included components from at least 4 of the 5 commonalities. We will review each of these 5 components next.

Self-efficacy is the belief about one's ability to change behavior and events in one's life. Disability may reduce self-efficacy when an individual has fewer opportunities to exercise autonomy or independent decision making or faces additional environmental barriers when making change [13,25]. Additionally, if disability originates with a failure of behavioral self-regulation (e.g., blindness due to diabetes), then self-efficacy may be reduced for future behaviors and events.

Outcome expectations are beliefs about behavioral choice consequences and include perceived risks and benefits. Disability experience may affect outcome expectations by increasing sensitivity to possible future disabling conditions or to the risks of behavior change (e.g., exacerbating pain by exercising). Further, expectations about the negative impact of a potential health condition on quality of life may be reduced for people with disabilities (e.g., "what have I got to lose?") [26].

Reinforcement management and stimulus control include the occasion for performing a behavior along with rewards for doing so. The cues to action for behavior change for the general population may not have the same impact on people with disabilities, particularly if health promotion or disease prevention campaigns do not include a relevant referent group. For instance, social marketing disease prevention messages often prescribe HBC to maintain activities that may not be relevant to people with disabilities (e.g., hiking in the mountains). Similarly, naturally occurring rewards for behavior change (e.g. buying smaller-sized clothes) may not be as effective for people with disabilities [27].

Social norms include the person's beliefs about the approval/disapproval of performing a behavior. People with disabilities are often presented with different norms than the general population. Historically, and even today, people with disabilities were presented with a norm of shortened life expectancy and/or living in nursing homes or institutions. Additionally, studies have shown that people with disabilities experience less exercise counseling [28], less discussion with health care providers regarding preventive services [29], and fewer physician referrals to health promotion programs [30,31]. Social norms may also vary, depending on the referent group. Expectations to independently engage in health promoting behavior may be discouraged by people unfamiliar with a disabling condition but encouraged by peers. Medical providers may encourage healthful behavior (e.g., exercise for pain management) that is not supported by community providers (e.g., fitness professionals unfamiliar with a disabling condition or inaccessible fitness facilities).

Finally, *environmental facilitators/barriers* are features of the physical environment that encourage or discourage a behavior (e.g. walking paths, distance to preventive services). The role of environmental facilitators and barriers is central to the new paradigm of disability that describes disability as the interaction of the individual with his or her environment [5,6]. The affect of inaccessible buildings and absence of trained personnel are clearly influential in the health behavior of people with disabilities [13,25].

Health behavior within the *International Classification of Function* framework

The *ICF* (Fig. 1) is useful to further explore HBC within the disability context [32]. Within this framework, HBC interventions are designed to change health risk and protective behaviors that are classified as Self-Care activities in the *ICF* (d570). Among people with disabilities, changes in self-care activities (e.g., d5701, Managing Diet and Fitness) can influence the course of physical health (i.e., Body Functions and Structures). For example, exercise improves muscle power functions (b730), heart functions (b410), and sleep functions (b134) that may translate into less impairment in corresponding body structures (e.g., movement, cardiovascular, and nervous system). Consistent with the

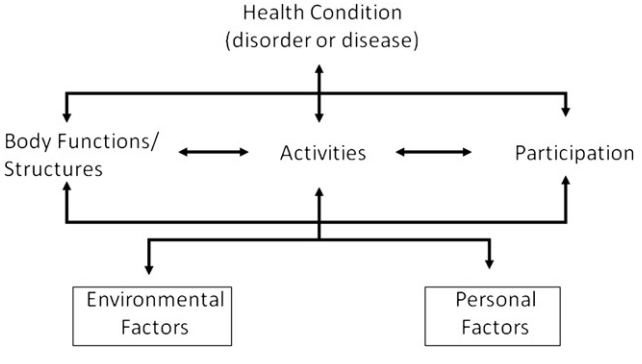

Figure 1. International Classification of Function Framework (from the World Health Organization, 2001).