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Research Paper

Sport participation among individuals with acquired physical disabilities: Group differences on demographic, disability, and Health Action Process Approach constructs

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Abstract

Background: Despite numerous physical, social, and mental health benefits of engaging in moderate and vigorous intensity physical activities (e.g., sport), few individuals with acquired physical disabilities currently participate in adapted sport. Theory-based sport promotion interventions are one possible way to increase the amount of individuals who engage in sport.

Objectives: The primary objective of this study was to examine the profiles of three different sport participation groups with respect to demographic, injury, and Health Action Process Approach (HAPA) constructs.

Methods: ANOVAs and Chi-square tests were used to determine group differences on demographic and disability-related constructs. A MANCOVA was conducted to determine differences between three sport participation groups (non-intenders, intenders, and actors) with age, years post-injury, mode of mobility, and sex included as covariates.

Results: A cohort of 201 individuals was recruited; 56 (27.9%) were non-intenders, 21 (10.4%) were intenders, and 124 (61.7%) were actors. The MANCOVA revealed significant differences between groups on the HAPA constructs, $F(22,370) = 9.02$, $p < .0001$, Pillai's trace = .70, demonstrating that individuals with acquired physical disabilities will rate important health behavior constructs differently based on their sport intentions.

Conclusion: These results provide an important framework that adapted sport organizations can use to tailor their sport promotion programs.

Keywords: Physical disability; Sport; Health behavior theory; Health Action Process Approach

An emerging body of literature suggests a number of unique physical and psychosocial health benefits of participating in adapted sport including better community integration, improved life satisfaction, the development of important friendships, and higher employment rates.[1–4] Furthermore individuals with acquired physical disabilities, such as spinal cord injury (SCI), who engage in sport accrue more minutes of physical activity and work at higher intensities; therefore individuals who participate in sport, in comparison to other physical activities, may be more likely to achieve the fitness benefits associated with a physically active lifestyle.[5] Despite these benefits, an estimated 3% of individuals with acquired physical disabilities currently participate in sport.[6] Despite this small figure, approximately 50% of individuals with physical disabilities have expressed an interest in exploring adapted sport options.[7] Therefore, it is essential to explore how to promote sport participation within this population.

Behavior change theories are a useful guide for understanding the necessary constructs to target in order to change behavior; to our knowledge, no behavioral theory has been applied to understand and promote sport among people with physical disabilities. However, several theories have been used to understand physical activity in this population. For example, both the Theory of Planned Behaviour[8] and Social Cognitive Theory[9] are commonly used to predict physical activity behaviors among people with acquired physical disabilities.[10,11] While these theories are relatively successful at predicting intentions, they are

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not as successful at accounting for variance in behavior. Given this "intention-behavior gap,"[12] there has been a call to use stage models that include a post-intentional phase. These models suggest that people can be classified into groups based on their readiness for behavior change. As such, more effective interventions will be tailored to individuals' stages in stage-matched interventions.[13,14]

The Health Action Process Approach (HAPA) is one example of a stage model that has been used within disability and clinical populations.[15,16] There are two distinct phases in the HAPA model, the motivational phase and the volitional phase.[15] In the motivational phase, individuals set intentions to engage in a specific behavior.[15] To develop intentions, individuals must have high risk perceptions, positive outcome expectancies, and task self-efficacy. Risk perceptions refer to individuals' beliefs that they are at risk if they do not do the behavior, such as the risk of cardiovascular disease if they remain sedentary.[15] Outcome expectancies refer to individuals' beliefs about the possible outcomes of a behavior; positive outcome expectancies refer to beliefs such as the health benefits of engaging in physical activities while negative outcome expectancies refer to the negative outcomes of the behavior, such as pain or injury as a result of physical activity.[15–17] Task self-efficacy refers to individuals' confidence in their ability to perform a specific behavior, such as their confidence in playing wheelchair rugby.[15,17]

Once individuals have set intentions, they must translate these intentions into behavior during the volitional phase. In order to translate intentions into behavior, individuals need high maintenance and recovery self-efficacy and will also need to develop plans.[15] Maintenance self-efficacy is the confidence individuals have in their ability to maintain a behavior, such as regularly participating in physical activity, even in the presence of barriers.[15] Recovery self-efficacy is the confidence individuals have in their ability to return to a behavior after an absence, such as returning to an exercise program after a lapse.[15] Strong plans detail what the individual will do, when, where, for how long, and with whom.[16] With respect to the volitional phase, individuals can be further divided based on their behavior; intenders refer to individuals who intend to, but are not currently, engaging in a behavior while actors are those who are currently engaging in the behavior.[16] As such, differences may emerge with respect to the HAPA constructs for non-intenders, intenders, and actors.[16]

Though the HAPA model has yet to be applied to staging individuals with respect to sport participation, it has recently been applied to explore group differences in physical activity among people with acquired physical disabilities.[18,19] Martin Ginis and colleagues[18] explored the differences between non-intenders, intenders, and actors with SCI for HAPA constructs with respect to physical activity. They found significantly higher scores among actors when compared to both non-intenders and intenders. Furthermore, intenders had greater scores on the HAPA constructs when compared to non-intenders. Similarly, Chiu and colleagues[19] explored how individuals with Multiple Sclerosis could be differentiated based on HAPA constructs. They found groups could be differentiated based on two mean centroids: motivation and volition. Precontemplators (i.e., non-intenders) scored low on both motivational and volitional centroids, the contemplation group (i.e., intenders) scored high on the motivational centroid but not the volitional centroid, and the final group (i.e., actors) scored high on both the motivational and volitional centroid. Thus among those with acquired physical disabilities, there could be distinct group differences with respect to the HAPA constructs.

Given the paucity of literature on sport participation for people with acquired physical disabilities, more research is needed to understand how to tailor information based on HAPA stage. Therefore, the objective of this study was to examine the profiles of three different sport participation groups with respect to the HAPA constructs. We hypothesized that the three sport participation groups would significantly differ on all of the HAPA constructs. Specifically, non-intenders would score lowest and actors would score highest on all constructs. Based on past findings,[18,19] we also hypothesized that intenders would be significantly different than both non-intenders and actors.

Methods

This study is a secondary analysis in which the full methodology and participant inclusion criteria are previously reported.[17] The methods are briefly summarized below.

Participants

A convenience sample of adults with acquired physical disabilities was recruited. Inclusion criteria included: a permanent physical disability acquired at the age of 16 or older; completed inpatient rehabilitation; and self-report to have no cognitive or memory impairments. There was no criterion regarding current participation in sport; however, to ensure variance in sport participation for the first analysis athletes were over recruited.[17]

Data collection and measures

Eligible participants were invited to complete a questionnaire via telephone with the lead author or a trained research assistant or online through survey software. The same instructions were made available in both formats; Chi-square and ANOVAs revealed no statistically significant differences between participants who chose the online format and those who chose to complete the questionnaire by telephone. No personal information, such as name or address, was recorded on the questionnaire or included in the data file. Rather, participants were assigned a numeric