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Social cognitive predictors of competitive level among athletes with physical disabilities

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ABSTRACT

Objective: To test a model of Social Cognitive Theory variables for predicting participation in higher versus lower levels of parasport competition. Information on modifiable factors associated with parasport competition would help parasport coaches and organizations transition recreational and developmental-level athletes to more competitive streams of participation.
Design: Cross-sectional survey.
Method: Participants were 95 parasport athletes with physical disabilities that cause mobility impairment (74% male; mean age = 34.36 ± 12.41). Measures of Social Cognitive Theory constructs were assessed via online questionnaires. Path analysis was used to test the proposed model.
Results: The model explained 12% of the variance in level of sport participation. Peer support for sport was a significant predictor of self-regulatory efficacy ($\beta = .22$, $p < .05$) which, in turn, was positively related to outcome expectations ($\beta = .43$, $p < .001$), and self-regulation ($\beta = .43$, $p < .001$). Self-regulatory efficacy was the only significant predictor of level of sport participation ($\beta = .26$, $p < .05$). There were no significant indirect effects between social support and competitive status ($p > .05$).
Discussion: Social Cognitive Theory provides a reasonable basis for formulating a model of psychosocial factors related to parasport competitive status. Other relevant factors should be taken into consideration in subsequent studies. Parasport coaches and organizations may benefit from leveraging peer support to help bolster athletes' self-regulatory efficacy to levels conducive to participation in higher competitive sport streams.

The growth of the Paralympic movement has helped to foster an increase in sport participation among people with disabilities (Misener & Darcy, 2014). Indeed, the number of athletes competing at the Paralympics increased from 400 at the first games in 1960, to nearly 5000 across the 2012 and 2014 summer and winter games (www.paralympic.org). However, an ongoing challenge for disability sport coaches and organizations is to progress athletes from lower developmental and recreational levels to higher competitive and elite levels of participation (Higgs et al., 2012). The cultivation of elite parasport athletes is important not just for the sake of winning medals; elite athletes promote their sport, motivate others to participate, show how barriers can be overcome, and break down stereotypes about disability (Higgs et al., 2012; Kittson, Gainforth, Edwards, Bolkowy, & Latimer-Cheung, 2013).

Although several studies have been conducted to examine psychosocial factors that influence whether a person with a disability chooses to *try* a sport (Jaarsma, Dijkstra, Geertzen, & Dekker, 2014; Wu & Williams, 2001), surprisingly little research has examined psychosocial factors that distinguish athletes competing at higher versus lower levels. Such knowledge would be valuable to disability sport organizations. Athletes who display characteristics associated with higher levels of competition could be targeted for development and transitioned to more competitive streams. In addition, interventions could be developed to cultivate the psychosocial resources (e.g., self-efficacy, social support) that athletes need to transition to higher levels of competition.

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We are aware of only two published studies that have examined the psychosocial factors distinguishing parasport athletes competing at higher versus lower levels. In the first study by Tasiemski, Kennedy, Gardner, and Blaikley (2004), athletic identity was measured in a sample of 678 adults with spinal cord injury, of which 31% were athletes. Individuals who competed at the international level more strongly identified with the athlete role than those who competed at national or regional/local levels. There was no difference between individuals participating at national and regional/local levels. The second study involved nearly 200 wheelchair athletes and revealed that motivation and social support needs differed for those competing at high school versus collegiate levels (Swanson, Colwell, & Zhao, 2008). Specifically, high school athletes were more motivated by opportunities for escapism, self-improvement, and social interaction than collegiate athletes. There were also some differences across the competitive levels regarding the importance of social support, although analytical limitations (i.e., parametric tests were conducted on ranked scores) rendered the results difficult to interpret. These two studies provide some preliminary evidence of psychosocial differences between parasport athletes competing at different levels. However, the studies are limited by a lack of an organizing theoretical framework in which to understand and interpret the findings. For instance, it is not clear whether the reported differences in social support, motivation, and self-perceptions are equally or relatively important for predicting competitive level within a theory-based framework.

Researchers have long argued for the use of motivational theories to understand and increase sport and exercise participation among persons with disabilities (Crocker, 1993; Kosma, Cardinal, & Rintala, 2002). Yet despite this call to action, remarkably few studies of disability sport participation have employed a theory or model. In a review of studies that examined factors related to sports participation among people with disabilities, Jaarsma et al. (2014) noted that only 15 out of 52 reviewed studies employed a guiding theory or model. Among those 15 studies, Bandura's (1986) Social Cognitive Theory (SCT) was the most utilized framework (e.g., Dlugonski, Wojcicki, McAuley, & Motl, 2011; Martin, 2006, 2008; Suh, Weikert, Dlugonski, Balantrapu, & Motl, 2011).

According to the tenets of SCT, self-efficacy (i.e., belief in one's ability to produce a particular level of performance) has direct effects on behavior as well as indirect effects through its influence on outcome expectations (e.g., perceived instrumental and affective benefits of the behavior) and self-regulatory strategies such as the formulation of plans and intentions. Bandura (1997) has also proposed that within physical activity contexts, social support has indirect effects on behavior, through self-efficacy. Consistent with these tenets, in a study of parasport athletes that was partially grounded in SCT, athletes' commitment to sport was positively correlated with measures of the athletes' perceived physical abilities, perceived affective benefits of sport participation, and social support (Martin, 2006). Subsequent SCT-based research conducted by Martin (2008) revealed that different types of self-efficacy – including task, barrier and self-regulatory – have relevance to wheelchair sport participants. These findings were supported by a recent study in which parasport participants scored higher on measures of task self-efficacy, scheduling self-efficacy, and barrier self-efficacy than non-participants (Perrier, Shirazipour, & Latimer-Cheung, 2015). Parasport participants also scored higher than non-participants on measures of outcome expectations and the use of self-regulatory strategies.

We are aware of only one published study that reported a test of a full model of SCT predictors of sport and other leisure time physical activity participation in adults with a physical disability. The model accounted for 39% of the variance in minutes per day of physical activity (Martin Ginis et al., 2011). Structural equation modeling revealed that social support was unrelated to self-efficacy. However, outcome expectations and self-regulatory efficacy had significant indirect effects on activity, which were mediated by the use of self-regulation strategies. Self-regulation was the only direct predictor of activity.

Taken together, the results of theory-based studies, coupled with preliminary evidence of differences in social support needs across parasport athletes competing at different levels (Swanson et al., 2008), support the viability of the SCT framework for studying and understanding parasport participation. However, to date, no published studies have applied SCT to explain differences in parasport athletes competing at different levels. Accordingly, the primary aim of the current study was to determine whether a model of SCT variables could explain higher (provincial/state, or national) versus lower (i.e., developmental/recreational, club) levels of sport participation among athletes with physical disabilities. Based on preliminary studies of psychosocial differences between parasport athletes competing at different levels (Swanson et al., 2008; Tasiemski et al., 2004), and theory-based studies of sport/leisure time physical activity participation in people with physical disabilities (Martin, 2006, 2008; Martin Ginis et al., 2011; Perrier et al., 2015), it was predicted that a model of SCT variables would explain significant variance in level of sport participation among parasport athletes.

Methods

Stakeholder involvement

Community stakeholders were engaged at all stages of the research process. Specifically, the research question was formulated in consultation with members of a national parasport organization (Canadian Wheelchair Sport Association). These individuals also assisted with the operationalization of the SCT constructs to ensure they were meaningful within the context of parasport participation. The stakeholders also provided assistance with participant recruitment and the interpretation of results.

Participants

Participants were 95 male and female athletes with physical disabilities that result in mobility impairment (mean age ± SD = 34.36 ± 12.41; Table 1). Recruitment strategies included posting advertisements on social media, contacting participants from our prior studies, and advertising through North American parasport programs as well as organizations that support people with disabilities. Study inclusion criteria were: (a) at least 15 years of age, (b) have a physical disability that causes mobility impairment, and (c) participating in parasport in the United States or Canada. Exclusion criteria were: (a) cognitive impairment, (b) unable to understand or read English, and (c) sensory impairment. Athletes with sensory impairments were excluded because of differences in sport skills and barriers to participation for wheelchair athletes versus athletes with sensory impairments, which would thus require different questionnaire assessments of task and self-regulatory efficacy.

Measures

Demographic information

Participants reported their age, sex, primary mode of mobility, ethnicity, highest level of education, type of physical disability, and