Self-Efficacy, Task and Ego Orientation, and Family Support in Wheelchair and Able-Bodied Basketball Players

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Abstract

This study investigated motivational aspects of participation in 57 wheelchair and 70 able-bodied basketball players (WBP and ABP, respectively) and across the sport classification system. An instrument for measuring basketball self-efficacy (SE) was used as well as the Task and Ego Orientation in Sport Questionnaire (TEO-SQ) and questions on family encouragement and sport activity. Statistical analysis across participants was adjusted for age and hours trained per week. Results revealed significantly reduced goal perspectives and increased family encouragement in WBP compared to ABP and lower basketball SE in players classified as low compared to high pointers. These findings should assist therapeutic recreation professionals and sport practitioners to better design and conduct programs with athletes using wheelchairs.

Keywords: Wheelchair basketball, task and ego orientation, family support, able-bodied players

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While encouraging physical activity has become an essential goal of public health officials, persons with disability such as spinal cord injury, lower limb amputations, and other musculoskeletal disorders are more likely to live a sedentary lifestyle than the general age-adjacent population (Khen & Kroll, 2009). For example, in Israel, a recent survey (Shemesh & Nakamoli-Levy, 2009) reported 22% and 16% participation for persons with moderate and severe disability respectively compared to 30% in the general population. A sedentary lifestyle in persons with disability is associated with increased health risks such as coronary heart disease, diabetes, and high blood pressure (Brown, Yore, Ham, & Macera, 2005; Hedrick & Broadbent, 1996; Ipsen, 2006; Rimmer, 2005). Therefore, physical activity and competitive sports are therapeutic recreation interventions that promote health and offer a “lifetime approach to rehabilitation while residing in the community” (Mobily, 2009, p. 19). Regular physical activity including sports reduces health risks (see Block, Skeels, Keys, & Rimmer, 2005; Kunstler & Stavola Daly, 2010; Van der Ploeg, Van der Beek, Van der Woude, & Van Mechelen, 2004), increases stress-coping behaviors (Hutchinson, Bland, & Kleiber, 2008) and competence (Stumbo, 2009), preserves personal autonomy (Sylvester, 2005), and facilitates quality of life (Shank & Coyle, 2002).

Sport activities for persons with disability have flourished since their inception in the 1940s (DePauw & Gavron, 2005) and have been reported to reduce the risk for people's secondary health problems and positively affect their daily life functioning (Brown et al., 2005; Rimmer, 2005; Van der Ploeg et al., 2004). One of the most popular sport activities for persons with disabilities is wheelchair basketball (WB), which has developed significantly since its first years, reaching over 80 countries and 100,000 participants in 2010 (International Wheelchair Basketball Federation [IWBF], 2010). WB differs from able-bodied basketball in team composition, which is based on classification. As is common in other team sports, the classification system in WB is a crucial instrument for ensuring that all eligible players will have the opportunity to be an integral member of a team (Strohkendl, 1991; Vanlandewijck & Chappel, 1996). WB was the first sport in which the classification system moved from a medical- to a sport-based model. This system has acquired significant scientific evidence to support its predictive validity with regard to game performance and players’ fitness components (Brasile & Hedrick, 1996; de Lira et al., 2010; Goosey-Tolfrey, Butterworth, & Morriss, 2002; Hutzler, Ochana, Bolotin, & Kalina, 1998; Vanlandewijck et al., 2003). Depending on his or her functional ability, a point value from 1.0 to 4.5 is given to each player. In places where teams are integrated, able-bodied players would be classified as a 4.5, and an individual with the highest degree of disability, such as full paraplegia below the chest, would have the classification of 1.0. Five players are on the court at any one time, and throughout the game the total point value of each team must not exceed 14 points (IWBF, 2004). Another difference in the context of able-bodied and wheelchair players is
that the participation opportunities for group games are significantly lower for persons with lower limb disabilities.

WB has received much attention from a variety of professionals in recreation and sports. In a recent brief literature search of the Sport Discus database (accessed August 26, 2010), 137 records were retrieved under the term *wheelchair basketball* (peer reviewed). Out of the 89 research articles included in the search outcome, psychosocial aspects were most often studied (N = 30; 34%), followed by physiological (N = 24; 27%) and sport technical aspects (N = 18; 20%). In spite of this amount of research, in comparison to general sport psychology research, relatively few studies have examined the psychological dynamics of sports with individuals with disability, particularly in WB (see Martin, 2008; Page, Martin, & Wayda, 2001).

As exercise and membership on a sport team have been transformed from a therapeutic and rehabilitation modality into an arena for presenting and enhancing physical capacity and skill within different recreational contexts, a variety of research challenges and theoretical frameworks for examining the psychosocial aspects of therapeutic recreation for persons with disabilities have been proposed (Hemingway, 1987; Mobily, 2009). From a rehabilitation perspective, it should be noted that persons with a disability such as a spinal cord injury, spina bifida, or multiple sclerosis often maintain a sedentary lifestyle and are at greater risk for health problems that can be prevented than persons without disability (Centers for Disease Control and Prevention, 2011). Therefore, maximizing the sport participation opportunities for athletes with disabilities has become a research priority (Van der Ploeg et al., 2004). From a sport performance point of view, the psychological determinants of participation among the athletes have been studied so that the motivational effectiveness of training methods and ultimately adherence to practice and competition can be improved (Asken & Goodling, 1986). In this regard, athletes with a disability have been compared to their able-bodied peers in order to study potential differences that might influence training routines. In addition, classification has been studied as a possible motivational determinant, suggesting that participants classified as *high pointers* (more functional) might differ from *low pointers* (less functional) with regard to their psychological attributes (see Fliess-Douer, Hutzler, & Vanlandewijck, 2003).

Most research efforts have examined motivational components from a competitors’ perspective (Martin, 2008; White & Duda, 1993). One of the most frequently cited theoretical constructs for explaining motivational attributes is the Social Cognitive Learning Theory (Bandura, 1997), and it is frequently utilized for explaining motivational processes in physical activity research (e.g., Roberts, Treasure, & Conroy, 2007). This model has been linked to explaining motivation to participate in physical activity from rehabilitation (Van der Ploeg et al., 2004) and therapeutic recreation (Hedrick, 1985; Wise, 2004a, 2004b) perspectives. According to this theory, the purpose of coaches, sport psychology practitioners, and therapeutic recreation professionals is to increase personal and environmental psychosocial facilitators and to reduce barriers to participation. One of the
most important personal facilitators is the degree of beliefs about being successful in tasks relevant to the sport participation (Van der Ploeg et al., 2004; White & Duda, 1993). According to Social Cognitive Learning Theory (Bandura, 1977, 1997), this belief, labeled self-efficacy (SE) pertains to the confidence an individual has in his or her ability to execute and adhere to a certain course of action or to achieve specific outcomes, particularly under challenging circumstances. The expectations of a person to become a specialist in his or her area of expertise and to accomplish a task affect both the initiation and persistence of his or her coping behavior. At the initial stage, the personally perceived SE influences the choice of activities and behaviors. In more advanced stages, SE contributes to the degree of adherence to a task, even without an immediate outcome. Through the expectation of eventual success, perceived SE would affect coping efforts once they are initiated. The stronger the perceived SE, the more active are the efforts to succeed (Bandura, 1977). SE has been demonstrated to influence different areas of human affairs, such as health behavior and physical functioning in sports psychology and medicine, educational achievements, and human adaptation and adjustment (Stajkovic & Luthans, 1998). While sport psychology researchers have affirmed the importance of SE in numerous investigations (e.g., Feltz, Short, & Sullivan, 2008), only a few researchers have examined SE in wheelchair athletes. Martin (2008) examined multidimensional SE of wheelchair athletes, while others explored SE in wheelchair rugby (Adnan, Mckenzie, & Miyahara, 2001), wheelchair propulsion (Adnan et al., 2001; Greenwood, Dzewaltowski, & French, 1990), and wheelchair tennis (Hedrick, 1985). Two further studies assessed SE of basketball and WB players; however, no comprehensive basketball and WB SE scale is available. Miller and McAuley (1987) developed a four-item basketball free throw SE instrument in order to measure SE prior to and after a goal setting intervention performed on 18 undergraduate students who attended a basketball beginner class. Martin (2009) measured several specific types of SE within the WB environment, such as performance, training, thought control, and resiliency. Each construct was measured by means of a 10-point Likert scale with 79 WB players. Martin found a moderate mean value of performance SE (Mean = 7.14; SD = 1.29) and thought-control SE (Mean = 6.57; SD = 1.53) and a slightly lower training SE (Mean = 5.93; SD = 1.71). However, these scales were not compared to those of athletes without a disability.

Additional important personal motivational determinants have been labeled task and ego orientations within the Goal Perspective Theory (Duda, 1989). In task orientation, perceptions are self-referenced, with motivation driven by the desire to master the demands of a particular task and to improve one’s ability or competence. In ego orientation, perceptions are norm-referenced, with motivation driven by the desire to perform as well or better than others (Skordilis et al., 2001). Several studies have investigated motivational goal perspectives in WB (e.g., Fliess-Douer et al., 2003; Skordilis et al., 2001; White & Duda, 1993). These studies have used the questionnaire developed by Duda (1989) labeled the Task and Ego Orientation in Sport
Questionnaire (TEOSQ). The most comprehensive study using the TEOSQ in wheelchair athletes was performed by Skordilis et al. (2001). They provided reference values of 43 female and 200 male participants in WB and marathon racing, suggesting a higher ego orientation of marathoners but no difference calculated on gender. Fliess-Douer et al. (2003) have compared task and ego orientations of male high and low pointers in WB, suggesting no significant differences. A detailed description of this instrument follows in the “Method” section. Knowledge of athlete’s goal orientation would facilitate therapeutic recreation and sport practitioners’ program design and implementation.

Among the environmental factors, a typically mentioned facilitator with regard to sport participation is family support (Van der Ploeg et al., 2004). For example, in a study of 152 persons with intellectual disability, family support was significantly correlated with self-efficacy (R = .35) and participation (R = .27) in sport participants aged 18 to 35 (Peterson et al., 2008). Among therapeutic recreation practitioners, family support has been considered a critical component in the intervention framework (Gilbert & Burkhour, 1996; Zabriskie & Heyne, 2003).

Therefore, based on Social Cognitive Learning Theory as well as on previous research, the main purpose of this study was to investigate the SE, task and ego orientation, and family support in wheelchair and able-bodied basketball players (WBP and ABP, respectively). A secondary goal was to evaluate the SE, goal perspectives, and family support of WBP with regard to the sport classification system. In order to facilitate these purposes, there was a need to develop an instrument for measuring basketball SE. The specific questions addressed in this study were (a) whether basketball SE, task and ego sport orientations, and family support of WBP and ABP are affected by the game environment (with/without wheelchair) and (b) whether basketball SE, task and ego orientations, and family support of the WBP are affected by the degree of their functional sport classification.

Knowledge of these outcomes would enable therapeutic recreation and sport practitioners to better plan and develop training protocols and athlete participation.

**Method**

A cross-sectional design with matched groups and convenience sampling was performed, comparing wheelchair basketball players (WBP) with non-adapted basketball players (ABP).

**Participants**

Fifty-seven male WBP and 70 male ABP participated in this study. WBP belonged to six teams of the first through the third national leagues and ABP to five teams of the national and regional leagues. Initially females were asked to participate as well, but due to their limited number it was decided to include only males in the final sample. All the participants had played at least one year in local basketball leagues and had a basketball training history. WBP in our study included some able-bodied athletes. Their inclusion was based on the findings of Perreault and Vallarand.
(2007), who examined the sport motivation and coping skills of 72 male and female WBP with and without disability. Their findings revealed that WBP with and without disability did not differ significantly with respect to sport motivation (which included task and ego incentives and coping skills). WBP cause of disability included amputations and other orthopedic disorders (18), spinal cord injury (16), cerebral palsy (8), spina bifida (4), and other neurological disorders (8). Three non-disabled players were also included in the WBP sample, due to their consistent participation over several years in this type of activity. Acutely injured players were excluded. Group matching was based on the level of the league in which the players had participated.

**Instruments**

**Demographics and family support.** The participants’ ages, number of years playing basketball, league level, practice frequency, and number of years being disabled (in those with a disability) were recorded in the demographics section of the questionnaire packet. Two items were used to assess family support: (a) My family members generally appreciate sports and provide me the needed support and (b) My family members are generally involved in sports. The scale for both items ranged from 1 (completely disagree) to 5 (completely agree).

In addition, two specific instruments were used in this study: (a) a self-constructed Basketball Self-Efficacy Questionnaire (BSEQ) and (b) the Task and Ego Orientation in Sport Questionnaire (TEOSQ) (Duda, 1989).

**The Basketball Self-Efficacy Questionnaire.** The BSEQ is an instrument developed to measure the degree of confidence in skilled performance that the basketball players felt during their games and training. It includes 20 questions expressing the level of those sensations among the players. Each sentence of the questionnaire started with the words “The level of my self confidence I have in...” and ended with a phrase such as “shooting the ball into the basket at the critical seconds of the game is...” The player needed to rate the level of confidence he or she had to succeed in this task on a scale of 5 points between 1 (very poor) and 5 (very high). The scale was developed via the selection of items proposed by a panel of five experienced basketball coaches. The panel rated the items on a scale of 1 to 5 and agreed to select the 20 items with the highest total scores based on coaches’ ratings for inclusion in the final version of the instrument.

**Goal perspective.** The TEOSQ (Duda, 1989) was used to measure goal orientation. This questionnaire consists of 13 items classified in the two factors of task orientation (7 items) and ego orientation (6 items). Each item of the questionnaire starts with the statement “I feel most successful when...” The second part of the sentence characterizes an individual tendency to task- or ego-related motivation. For example, the statement “I learn a new skill by trying hard” demonstrates an expression of task orientation, while the statement “I can do better than my friends” is an expression of ego orientation. The responders rated their agreement or disagreement with questions that explored what is most likely to help athletes do well or succeed
in their sport on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Skordilis et al., 2001). Test–retest reliability of the TEOSQ was examined in youth soccer players by means of correlation analysis, indicating a stronger test–retest correlation for the ego subscale than for the task subscale (Lane, Nevill, Bowes, & Fox, 2005). Construct validity and internal consistency reliability of this scale were established (Li, Harmer, & Acock, 1996). Validity of the translated version was established by the reverse translation method, used by two native English-speaking teachers with experience in sport science. A panel of five basketball coaches refined the text to make it appropriate for basketball players.

**Procedure**

Participants were recruited during practices and tournaments, after we acquired the approval of the Institutional Review Board, the Sport Federation for the Disabled, and the individual coaches’ as well as the participants’ informed consents and parental informed consent in the case of minors. Players were asked whether they were willing to contribute several minutes to fill in the questionnaires. The length of time for filling in the questionnaire did not exceed 10 minutes. Data were collected within one-month time during training and tournaments of the respective teams.

**Statistical Analysis**

In order to assess the scales internal consistency, Cronbach’s Alpha coefficients were calculated for the BSEQ and the two TEOSQ subscales.

T-tests were performed to measure differences between groups of WBP and ABP at the pre test with regard to their age, basketball history, and weekly training hours trained. Variables in which differences were found were considered as covariates of the main effects. An analysis of covariance (ANCOVA) was performed on the BSEQ, TEOSQ subscales, and family support across groups of WBP and ABP.

In addition, t-tests were performed to measure differences between two groups of high- and low-point WBP (four classes in each group), divided at the cut-off value of 2.5. The low-point group comprised of classes 1.0, 1.5, 2.0, and 2.5, and was compared to the high-point group comprised of classes 3.0, 3.5, 4.0, and 4.5 points, with regard to BSEQ, TEOSQ, and family support items.

**Results**

**Demographics**

Table 1 presents means and standard deviations (SD) of age, weekly training hours, and basketball history of WBP and ABP and the differences revealed between the group means across these variables. WBP had a broader distribution of ages (12–58 years) than ABP (17–36 years), and the participants were significantly older. In addition, the basketball history of WBP was more broadly distributed than that of the ABP (1–45 and 3–23 years, respectively), but the differences were not significant. Mean and SD of league distribution in both groups are presented in Table 2. Although players from comparative leagues were recruited in both groups, weekly training hours significantly differed between WBP and ABP, with ABP investing almost double the amount of time in weekly training.
Table 1

T-Test Results for Age, Years Playing Basketball, and Hours Trained

<table>
<thead>
<tr>
<th>Variable</th>
<th>WBP Mean (SD)</th>
<th>ABP Mean (SD)</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>95th Confidence Interval of the difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>35.2 (12.8)</td>
<td>23.4 (4.6)</td>
<td>-7.14</td>
<td>124</td>
<td>.0001</td>
<td>-11.81</td>
<td>1.65</td>
<td>-15.09, -8.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YrsBB</td>
<td>11.9 (12.3)</td>
<td>13.3 (4.5)</td>
<td>.84</td>
<td>124</td>
<td>.404</td>
<td>1.34</td>
<td>1.58</td>
<td>-1.82, 4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HrsTrWk</td>
<td>5.6 (2.6)</td>
<td>9.8 (3.3)</td>
<td>7.87</td>
<td>125</td>
<td>.0001</td>
<td>4.17</td>
<td>.53</td>
<td>3.12, 5.21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N = Number of participants
WBP = Wheelchair basketball players
ABP = Able-bodied basketball players
YrsBB = Number of years playing basketball
HrsTrWk = Average number of hours trained every week
Sig. = Significance level
Table 2

Players’ Distribution Across Leagues

<table>
<thead>
<tr>
<th>League</th>
<th>National</th>
<th></th>
<th>Regional</th>
<th></th>
<th>Junior</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>WBP</td>
<td>36</td>
<td>51.43</td>
<td>33</td>
<td>47.14</td>
<td>1</td>
<td>1.43</td>
<td>70</td>
</tr>
<tr>
<td>ABP</td>
<td>23</td>
<td>40.35</td>
<td>33</td>
<td>57.89</td>
<td>1</td>
<td>1.75</td>
<td>57</td>
</tr>
</tbody>
</table>

WBP = Wheelchair basketball players; ABP = Able-bodied basketball players; N = Number of participants

Table 3 demonstrates the distribution of disabilities across WBP. The most frequent specific conditions were spinal cord injuries (16) and polio (8).

Scale Internal Consistency

The scales used to measure the basketball players’ attributes were subjected to an analysis of internal consistency and revealed good (< .8) Cronbach’s Alpha reliability coefficients (George & Mallerey, 2003; Hopkins, 2000) for basketball SE as well as for ego and task orientations (.87, .80, and .80, respectively).

WBP Compared to ABP

Table 4 presents the results of the ANCOVA computed on the main outcome variables SE, ego and task orientations, home encouragement, and home activity, across basketball type with age and weekly practice hours as covariates. Significant differences were obtained between WBP and ABP for ego and task orientations as well as for home encouragement. ABP had higher ego and task orientations, and WBP had higher home encouragement, however with small effect sizes differing between the groups.

Effect of Wheelchair Basketball Classification

Following Fliess-Douer et al. (2003), a comparison was performed between class categories with a cut-off value of 2.5 points. Table 5 presents descriptives, t-test results, and confidence intervals of ego and task orientations, basketball SE, and family support in the high (3.0–4.5 points) compared to the low (1.0–2.5 points) classification categories. A significant difference ($t[55] = -2.58, p < .01$) was observed only in basketball SE.

Discussion

Our study examined the basketball SE, goal perspectives, and family support in WBP compared to ABP, who differed with respect to age and number of training hours per week. The scales used in this study exhibited good internal consistency and thus could be used for examining the main questions articulated.
Table 3

Distribution of Disability Categories in WBP

<table>
<thead>
<tr>
<th>Category</th>
<th>Polio</th>
<th>Spina Bifida</th>
<th>Cerebral Palsy</th>
<th>Spinal Cord Injury</th>
<th>Amputations</th>
<th>Able-Bodied</th>
<th>Others*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Participants</td>
<td>8</td>
<td>4</td>
<td>5</td>
<td>16</td>
<td>3</td>
<td>4</td>
<td>17</td>
<td>57</td>
</tr>
</tbody>
</table>

* Brain injuries; joint and bone disorders; neuromuscular disorders; multi-impairments
Table 4

Descriptive and Corrected ANCOVA Main Effects for WBP and NABP

<table>
<thead>
<tr>
<th>Variable</th>
<th>BBType</th>
<th>M</th>
<th>SD</th>
<th>N</th>
<th>DF</th>
<th>F</th>
<th>Sig.</th>
<th>Eta²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ego</td>
<td>WBP</td>
<td>2.34</td>
<td>0.78</td>
<td>57</td>
<td>3,126</td>
<td>2.748</td>
<td>0.046</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>ABP</td>
<td>2.47</td>
<td>0.65</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>WBP</td>
<td>3.41</td>
<td>0.60</td>
<td>57</td>
<td>3,126</td>
<td>4.612</td>
<td>0.004</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>ABP</td>
<td>3.49</td>
<td>0.47</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE</td>
<td>WBP</td>
<td>3.95</td>
<td>0.56</td>
<td>57</td>
<td>3,126</td>
<td>2.419</td>
<td>0.069</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>ABP</td>
<td>4.07</td>
<td>0.47</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Enc.</td>
<td>WBP</td>
<td>4.65</td>
<td>0.77</td>
<td>57</td>
<td>3,126</td>
<td>2.873</td>
<td>0.039</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>ABP</td>
<td>4.33</td>
<td>0.87</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Act.</td>
<td>WBP</td>
<td>3.53</td>
<td>1.58</td>
<td>57</td>
<td>3,126</td>
<td>0.42</td>
<td>0.739</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>ABP</td>
<td>3.26</td>
<td>1.46</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BBType = Basketball type; WBP = Wheelchair basketball players; ABP = Able-bodied basketball players; M = Mean; SD = Standard deviation; N = Number of valid observations; F = variance; Sig. = Significance; SE = Self-efficacy; Enc = Encouragement; Act = Activity
Table 5

Independent Samples T-Test for Equality of Means Between Class Categories

<table>
<thead>
<tr>
<th>Variable</th>
<th>Class category</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE</td>
<td>1–2.5 points</td>
<td>3.70</td>
<td>0.63</td>
<td>-2.80</td>
<td>-0.41</td>
<td>0.15</td>
<td>-0.71</td>
<td>-0.12</td>
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<tr>
<td></td>
<td>3–4.5 points</td>
<td>4.12</td>
<td>0.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ego</td>
<td>1–2.5 points</td>
<td>2.12</td>
<td>0.65</td>
<td>-1.28</td>
<td>-0.27</td>
<td>0.21</td>
<td>-0.70</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>3–4.5 points</td>
<td>2.40</td>
<td>0.83</td>
<td></td>
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</tr>
<tr>
<td>Task</td>
<td>1–2.5 points</td>
<td>3.46</td>
<td>0.62</td>
<td>0.23</td>
<td>0.04</td>
<td>0.18</td>
<td>-0.31</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td>3–4.5 points</td>
<td>3.42</td>
<td>0.65</td>
<td></td>
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</tr>
<tr>
<td>Family Enc.</td>
<td>1–2.5 points</td>
<td>4.75</td>
<td>0.44</td>
<td>0.51</td>
<td>0.10</td>
<td>0.20</td>
<td>-0.30</td>
<td>0.50</td>
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<tr>
<td></td>
<td>3–4.5 points</td>
<td>4.64</td>
<td>0.82</td>
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<tr>
<td>Family Act.</td>
<td>1–2.5 points</td>
<td>3.50</td>
<td>1.40</td>
<td>0.03</td>
<td>0.04</td>
<td>0.44</td>
<td>-0.87</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td>3–4.5 points</td>
<td>3.49</td>
<td>1.68</td>
<td></td>
<td></td>
<td></td>
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</table>

M = Mean; SD = Standard deviation; N = Number of valid observations; F = variance; Sig. = Significance; SE = Self-efficacy; Enc. = Encouragement; Act. = Activity
The first purpose of the current study was to examine whether the game environment, that is, WB, influenced the result of basketball SE, task and ego orientations, and family support. The results, which were adjusted for age and weekly training hours, revealed some significant differences between groups. ABP had significantly higher values than WBP in their ego and task perspectives, while WBP had higher family encouragement. Nevertheless, the effect sizes obtained were small. No differences were found for SE and family sport activity. Our findings differ from the conclusions of Fliess-Douer et al. (2003), who compared their outcomes to reference values in the literature and reported that Flemish WBP were similar in their goal perspectives to able-bodied athletes. Similarly, while using a different instrument labeled the Sport Orientation Questionnaire (SOQ), with 31 recreational WBP and 76 ABP, Skordilis, Koutsouki, Asonitou, Evans, and Jensen (2002) reported higher scores on the Competitiveness and Goal Orientation for WBP. However, 1 year later, contrasting results supporting our findings were reported by Skordilis, Gavrilidis, Charitou, and Asonitou (2003). They suggested that recreational WBP demonstrated lower values on the Competitiveness and Goal Orientation subscales when compared to professional and amateur ABP from the New England region in the United States. These conflicting results are probably related to sample differences.

It should be noted that the subscale means in our data presented higher values for task compared with ego orientation, in both WBP and ABP. This finding is supported by data reported in earlier studies. Brasile and Hedrick (1991) were the first to address the finding that task-related incentives score higher than ego-related incentives in young and old WBP alike when taking part in adapted sport. Later studies in the United States (Skordilis et al., 2001; White & Duda, 1993) and Belgium (Fliess-Douer et al., 2003) confirmed this trend. However, when comparing our mean results on task and ego orientations to reference values in the extant literature, it appears that particularly on the ego orientation lower values were obtained. It appears that our sample differed from the samples examined in previous studies, perhaps because due to their older age and longer experience they perceived themselves more as recreational rather than highly competitive athletes.

The finding with regard to increased family encouragement in WBP compared to ABP is noteworthy. In a study by Bois, Lalanne, and Delforge (2009), the effect of parental presence during competition was studied. Analysis of variance indicated that the presence of both parents was associated with higher precompetitive anxiety for male and female basketball players as well as female tennis players. However, the absence of both parents did not result in less anxiety. It is likely that family encouragement in WBP includes a presence at the respective team games. The influence of such attendance on anxiety and performance is of interest and should be explored in future therapeutic recreation research. The increased family encouragement observed in WBP compared to ABP should be acknowledged and should encourage therapeutic recreation and sport practitioners to use this resource.
for increasing players’ motivational perspective.

The second purpose was to clarify whether the severity of the players’ disability affects their task and ego sport orientation, SE, and family support. The results revealed a significant difference only in their perceived SE. This outcome is supported by data revealed in a previous study, where the WBP impairment as reflected in their classification category had no significant influence on their goal perspective (see Fliess-Douer et al., 2003).

It should be noted that the lower goal perspective generally observed in the WBP compared to ABP and the lower SE observed in low-point compared to high-point players might have an impact on players’ motivation in the low-point classes. If specific support for the development of SE is not encouraged, it is likely that some of these players may drop out. It is recommended that coaches and therapists consider different methods for developing SE in low-point athletes. Specifically, personal guidance and positive feedback are interventions to use to encourage these players. Wheelchair propulsion and ball handling techniques should be personalized, and affirmative action can be used during training sessions by instructors. More broadly, it appears important to pay attention and focus on specific techniques to facilitate the psychological states of participants with lower physical capacity during therapeutic recreation experiences.

**Limitations**

One limitation of the present study is that the instrument used to measure family support included only two items and may have lacked validity. Also, further potential environmental facilitators, such as peers’ and coaches’ support, were not measured. Therefore, in future studies a more comprehensive measure of environmental facilitators should be used. Another limitation is that although the variability in weekly training hours and age was adjusted by means of the ANCOVA, the different training and competition environments of WBP and ABP may have accounted for some of the variance between groups. In future studies participants with a similar degree of training load should be compared. The restriction of the sample to males only is another limitation because female players are being included in increasing numbers within teams in WBP as well as in separate leagues in ABP populations. In future studies an adequate number of female participants should be recruited for analysis purposes.

In summary, this study found reduced goal perspectives and increased family encouragement in WBP compared to ABP. In addition, lower basketball SE was reported by players classified as low pointers. It is recommended that future studies examine intervention methods used by therapeutic recreation and sport practitioners for increasing goal perspective, SE, and family involvement in WBP, particularly in those with low physical function. Finally, it is recommended that therapeutic recreation professionals include discriminative analyses in their future research between participants with different physical functionality in order to investigate potential different psychological criteria impacting athletes.
References


