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ADAPTIVE PHYSICAL EDUCATION

Improving Perceptions of Individuals With Disabilities Through a Wheelchair Basketball Tournament: A Quantitative Analysis

Anthony Rosselli, Elizabeth Wachira, Steve Prewitt, Samantha Roberts, Dean Culpepper, Clay Bolton, Matthew Mackenzie

Abstract

An annual wheelchair basketball tournament at a mid-sized university in the southwestern U.S. serves two purposes: first, to raise awareness of individuals with disabilities (IWD) and second, to raise funds for a local Special Olympics event. The purpose of this study was to examine whether participation in or spectating of this event had an impact on the perceptions toward IWD and athletes with disabilities (AWD). Participants in this study (N = 255) completed a survey containing the Attitudes Toward Disabled Persons, Form O (ATDPO) survey as well as a modified version of the ATDP (including wording for athletes). There was a positive correlation between attitudes toward IWD and AWD, Pearson's r(255) = .441, p < .001. Furthermore, the overall mean for the ATDPO (M = 75.31, SD = 16.19), t(254) = 15.10,

Anthony Rosselli, Department of Parks, Recreation and Tourism Management, North Carolina State University. Steve Prewitt, Department of Health and Human Performance, Texas A&M University–Commerce. Samantha Roberts, Department of Health and Human Performance, Texas A&M University–Commerce. Dean Culpepper, Department of Health and Human Performance, Texas A&M University–Commerce. Clay Bolton, Department of Business, LaGrange College. Matthew Mackenzie, Department of Health and Human Performance, Texas A&M University–Commerce.

Samantha Roberts passed away on September 19, 2021.

Please send author correspondence to acrossel@ncsu.edu

$p < .001$, $d = .95$, and Athlete version overall mean ($M = 45$, $SD = 8.31$), $t(254) = 28.84$, $p < .001$, $d = 1.81$, were significantly higher than the midpoints of each scale (higher than the midpoint reflecting more positive views toward IWD, and lower that the midpoint reflecting less positive views). Finally, females had significantly more positive attitudes toward both IWD and AWD than males. This study supports research that demonstrates females show more positive attitudes toward IWD. However, watching or participating in the wheelchair basketball tournament did not affect these attitudes toward IWD or AWD. Implications and limitations are also provided.

According to the Centers for Disease Control, an estimated 62 million Americans (1 in 4; Okoro et al., 2018), and over 1 billion people worldwide (Weston, 2017), report having a disability. Individuals with disabilities (IWD) face a variety of daily challenges, barriers, and negative perceptions from the general public (Krahé & Altwasser, 2006). These negative perceptions are often based upon a presumption of incapability (Carvalho-Freitas & Marques, 2007; Guest, 1997; Ribeiro & Carneiro, 2009; Stone & Colella, 1996; Stone-Romero, et al., 2006). As a result, IWD can be excluded from societal experiences and opportunities (Brittain, 2004; Weston, 2017). While individuals verbalize favorable attitudes publicly, it is the deeper hidden feelings that house negative perceptions (Daruwalla, 1999). There have been numerous governmental efforts to improve the inclusion of IWD in daily life (e.g., Americans With Disabilities Act). Updated language (e.g., people-first language) and nonprofit organizations dedicated to improving the experiences of IWD also exist. These efforts are not to be discredited. However, as more types of disability are uncovered, living with a personal disability or a family member with a disability becomes more commonplace, and further education and inclusion opportunities are warranted.

Athletes with disabilities (AWD) are not immune to negative perceptions by their able-bodied peers. AWD demonstrate extraordinary skill, perseverance, and athletic ability on recreational and professional levels (e.g., nationally televised Paralympic Games). In some ways, they serve to contradict and counter common stereotypes about IWD (Hardin & Hardin, 2003). As such, it could be theorized that AWD would have more positive attitudes shown toward them. However, implicit attitudes toward AWD remain nega-

tive (White et al., 2006). Von Sikorski et al. (2012) demonstrated that the framing of AWD had an impact on the attitudes shown them. When shown a picture of an AWD with no crowd compared to a small or large crowd in the background, participants reported more positive attitudes when the image included spectators. Whether a participant had personal contact with IWD had no significant impact on their ratings of AWD. Even though AWD have accomplished success in competitive sports, there has been a tendency to ignore people with disabilities (either physical or hidden; Brittain, 2004; Devine, 1997; Weston, 2017).

As some organizations and members of society attempt to make the world more inclusive for IWD, various strategies for education and understanding have been utilized. Sport is one such area. Overall, the opportunities for IWD to participate in recreation and physical activity have grown. From large-scale events such as the Special Olympics and Paralympics to grassroots efforts (e.g., inclusive intramural leagues), there are more participation avenues for IWD than ever before. These types of sporting activities can empower IWD (Blinde & Taub, 1999) and provide opportunities for those without disabilities to encourage and support the accomplishments of IWD. Furthermore, simulation-type sport activities (Grayson & Marini, 1996; Lyons et al., 2012) can provide individuals without disabilities the opportunity to empathize with the lived experiences of IWD and experience those challenges firsthand. The research demonstrates both varying degrees of success and negative outcomes (French, 1992; Nario-Redmond et al., 2017; Silverman et al., 2015). While the use of simulation has been shown to be one of the most successful strategies to change attitude behaviors (Orji et al., 2014), meta-analysis research has only found small positive effects (Flower et al., 2007).

While some have argued against the use of simulations (French, 1996), others have stated that the use of sport, particularly one that promotes equity among those with and without disability, can be effective in creating awareness of the potential barriers associated with disability (Slininger et al., 2000). A systematic review of disability awareness interventions for children and youth discovered that out of 42 studies, 34 showed improvement in attitudes toward peers with disabilities (Lindsay & Edwards, 2013). Overall, studies have

demonstrated that both active (e.g., role playing; McGregor, 1993) and nonactive participation (e.g., education) can improve empathy toward out-groups (Batson et al., 1997).

As with attitudes toward many topics, demographic variables have been studied in research on attitudes toward IWD. The literature is inconclusive. Scior (2011) examined 20 years of literature and found no differences between men's and women's attitudes toward IWD. Conversely, Lindsay and Edwards (2013) in a literature review found that females had more favorable attitudes toward peers with disabilities than did males. Concerning explicit attitudes, Antonak and Livneh (1988) and Hergenrather and Rhodes (2007) demonstrated that women reported more positive attitudes toward IWD than did men. Implicit attitudes show less difference. In Wilson and Scior's (2014) literature review, six out of seven studies that examined gender differences on implicit attitudes showed no significant differences.

One's personal experience has been shown to impact attitudes toward IWD. The more direct contact an individual has, the more positive their attitude is toward IWD (Barr & Bracchitta, 2015; Huskin et al., 2017; Nosse & Gavin, 1991; Perry et al., 2008; Rice, 2009; Scior, 2011). As an example, Keith et al. (2015) examined participants' contact with IWD across their lifetimes and found that participants who had higher quality of contact with IWD had lower levels of prejudice toward IWD.

The college or university experience has been shown to impact students' development of social worldviews (Arnett, 2000, 2007; Gutierrez & Park, 2015). As college students can go on to be future leaders and people of influence, it is important to provide opportunities for them to experience, in any capacity, the potential barriers that limit access to and participation in physical activity and daily life by IWD. As some of the previously discussed research shows, doing so has the potential to create awareness of and empathy toward the experiences of IWD. Therefore, the purpose of this study was to examine current attitudes of college students toward IWD and AWD, and if these attitudes are impacted by participating in or watching an adapted sporting event.

The event utilized for this research was a campus-wide wheelchair basketball tournament. Originally designed as an extension

of an Adapted Physical Education class, the event grew to include participation from the entire campus (both students and faculty/staff). Additionally, the event was used to raise funds for a local Special Olympics track meet. The format of the event was a 3-on-3, half-court tournament, with games shortened to 10 min for increased participation opportunities. All participants who played in the tournament were required to be in a wheelchair during the games. This was the fifth consecutive year of the tournament. The following research questions served to guide the study:

- RQ1: Do differences exist in gender, race, and disability awareness in attitudes toward IWD and AWD?
- RQ2: Does participation in or spectating of a wheelchair basketball tournament affect attitudes toward IWD and AWD?
- RQ3: Does one's attitude toward IWD predict attitude toward AWD?

Method

A challenge of research on explicit attitudes toward IWD is that self-reported attitudes can lead to socially desirable responses. Thus, there is a question about the validity of this type of research (Antonak & Livneh, 2000).

Instrument

The survey instrument for this study contained several sections. First, the participants were asked to provide demographic information (age, gender, and race). Next, questions pertaining to the participant's experience with disability (e.g., "Do you have a family member that has some form of disability [mental, physical, etc.]?") were asked. The survey concluded with questions from the Attitudes Towards Disabled Persons Scale (Form O; ATDPO) and a modified version with wording for athletes. These surveys assessed the perceptions of the participants' attitudes toward IWD and AWD. The ATDP scale has been utilized in research since the 1960s, and it has been widely regarded as valid and reliable (Chan et al., 2002; Lam et al., 2010; T. Lee et al., 1994; Tervo et al., 2004). As such, the ATDPO version, which contains 20 items, served as the foundation of the present instrument.

ATDPO

The ATDPO contained items that were reverse coded, and participants responded to each statement on a scale of -3 (*I disagree pretty much*) to 3 (*I agree very much*). There was no neutral or 0 score on this instrument. Examples of items on the ATDPO include "Persons with physical disabilities are just as intelligent as non-disabled persons" and "Most people with disabilities feel sorry for themselves." The language from the ATDPO was changed, when appropriate, to "people-first" language in this study's use of the instrument. Positively worded statements were reverse scored so that they matched the rest of the items on the survey. Then, the sum of the items was calculated, the sign reversed, and a sum of 60 added to the ATDPO score (minimum score of 0 and maximum score of 120). The higher the score, the more positively the participant viewed IWD. The lower the score, the less positively the participant viewed IWD

Athlete Version of Attitudes Towards Disabled Persons Scale–Form O

The athlete version of the ATDPO was scored on the same -3 to 3 scale (i.e., -3 = *I disagree pretty much*, 3 = *I agree very much*). Examples of statements from the athlete version include "Playing sports with a disability is easy" and "More sports should include options for athletes with disabilities to play with those without disabilities." Positively worded statements were reverse scored so that they matched the rest of the items on the survey. Then, the sum of the items was calculated, the sign reversed, and a sum of 30 added to the athlete version (minimum score of 0 and maximum score 60). The higher the score, the more positively the participant viewed AWD. The lower the score, the less positively the participant viewed AWD.

Procedures

The study was submitted for approval to the university IRB. Once IRB approval was provided, data collection commenced. Data were collected in two stages. First, during the last hour of the wheelchair basketball tournament, physical surveys were distributed to people in attendance (both players and spectators). A general announcement was made concerning the nature of the study, that participation was voluntary, and where to return the completed or blank surveys. The

surveys were distributed during the last hour because by then the participants had several hours of observation of and/or experience with the wheelchair basketball event. As well, faculty members in the academic department that held the tournament asked for voluntary participation during their courses in the week after the tournament. Finally, an online version of the survey was distributed to students in the faculty's courses that did not distribute surveys in a face-to-face course. No extra credit was offered for participation in the study.

Participants

Two hundred fifty-five participants took the survey and the their average age was 21 (range from 18 to 52). Females accounted for 55% and males 45% of the participants. People of color (POC) accounted for 65% of the participants and 35% were White. Due to the low participation rates of certain racial groups, POC were combined into one group. The statistical analyses would have been affected otherwise due to cell sizes not meeting thresholds (e.g., post hoc analyses). Only 10% of the participants identified having a disability (no disclosure of the nature of the disability), 75% knew someone with some form of a disability, and 56% had a family member with some form of a disability. Those who participated in the tournament accounted for 22% of participants, those who watched but did not participate 29%, and those who did not attend 49%. The majority of the surveys were completed on a date after the event (74%).

Data Analysis

Data were input and analyzed with SPSS version 25. The reliability of the ATDPO and the athlete version was determined through Cronbach's alpha. Comparisons of the ATDPO and Athlete version to the midpoints of each scale were conducted through *t* tests. Comparisons of scores across groups of interest were done through a multivariate analysis of variance. The correlation between the ATDPO and and Athlete version were examined with a Pearson's correlation coefficient.

Results

Both the ATDPO ($\alpha = .83$) and the and the Athlete version ($\alpha = .70$) scales were reliable. This section presents an analysis of the data, organized by research question.

RQ1: Do Differences Exist in Gender, Race, and Disability Awareness in Attitudes Toward Individuals With Disabilities and Athletes With Disabilities?

Both the ATDPO overall mean (M = 75.31, SD = 16.19), $t(254) = 15.10$, $p < .001$, $d = .95$, and and the Athlete version overall mean (M = 45, SD = 8.31), $t(254) = 28.84$, $p < .001$, $d = 1.81$, were significantly higher than the midpoints of each scale (60 and 30, respectively). According to Yuker et al. (1970), the higher the score on the ATDP scales, the more positively the respondent views IWD. Another interpretation is that the higher the score, the less difference perceived between IWD and those without disabilities. The middle of the scale reflects neutral feelings. The lower the score, the more negatively and/or differently the respondent views IWD compared to those without disabilities. Examining gender differences on attitudes toward IWD and AWD yielded significant findings, Wilks' $\lambda = .91$, $F(2, 252) = 12.70$, $p < .001$, $\eta^2 = .09$. Females showed more positive attitudes toward IWD (M = 78.94, SD = 15.15) than did males (M = 70.90, SD = 16.39), $t(253) = 4.06$, $p < .001$, $d = .51$. They also showed more positive attitudes toward AWD (M = 47, SD = 7.45) than did males (M = 42.57, SD = 8.67), $t(226.09) = 4.32$, $p < .001$, $d = .55$.

Comparisons across race also revealed significant findings, Wilks' $\lambda = .947$, $F(2, 252) = 7.01$, $p = .001$, $\eta^2 = .05$. Whites showed more positive attitudes toward IWD (M = 80.14, SD = 15.75) than did POC (M = 72.68, SD = 15.86), $t(253) = 3.61$, $p < .001$, $d = .47$. Whites (M = 46.73, SD = 7.98) also showed more positive attitudes toward AWD than did POC (M = 44.06, SD = 8.35), $t(253) = 2.48$, $p = .01$, $d = .33$.

There were no differences in attitudes toward IWD or AWD on the basis of one's own disability status, Wilks' $\lambda = .997$, $F(2, 251) = .39$, $p = .68$, $\eta^2 = .01$; having a family member with a disability, Wilks' $\lambda = .99$, $F(2, 251) = 1.72$, $p = .18$, $\eta^2 = .01$; or knowing someone with a disability, Wilks' $\lambda = .99$, $F(2, 252) = 1.25$, $p = .29$, $\eta^2 = .09$.

RQ2: Does Participation in or Spectating of a Wheelchair Basketball Tournament Affect Attitudes Toward Individuals With Disabilities and Athletes With Disabilities?

No significant differences existed among those who participated, watched but did not participate, or did not attend the wheelchair basketball tournament, Wilks' $\lambda = .98$, $F(4, 502) = 1.15$, $p = .331$, $\eta^2 = .01$. Taking the survey at the event or after the event did not have an impact.

RQ3: Does One's Attitude Toward Individuals With Disabilities Predict Attitude Toward Athletes With Disabilities?

Attitudes toward IWD accounted for 19% of the variance ($p < .001$) in attitudes toward AWD. There was a significant positive correlation between the ATDPO and Athlete version scales, Pearson's $r(255) = .441$, $p < .001$.

Discussion

As with the results, the discussion is organized according to research question.

RQ1: Do Differences Exist in Gender, Race, and Disability Awareness in Attitudes Toward Individuals With Disabilities and Athletes With Disabilities?

This study supports findings that females show more positive attitudes toward IWD (Antonak & Livneh, 1988; Goreczny et al., 2011; Hergenrather & Rhodes, 2007; Lindsay & Edwards, 2013; Seo & Chen, 2009; Yuker et al., 1970). Women are more empathetic toward others (Davis, 1980; Dymond, 1949, 1950; Eisenberg & Lennon, 1983; Hoffman, 1977; Mehrabian & Epstein, 1972; Miller, 2010; White et al., 2006) and relate to similar negative attitudes shown toward them due to societal-enforced male superiority (Seo & Chen, 2009). This study does not support that disability awareness (e.g., family member with disability) leads to more favorable attitudes compared to those with no awareness (Goreczny et al., 2011).

RQ2: Does Participation in or Spectating of a Wheelchair Basketball Tournament Affect Attitudes Toward Individuals With Disabilities and Athletes With Disabilities?

The primary goal of this study was to examine the effectiveness of participating in or spectating of a wheelchair basketball tournament on improving attitudes toward IWD and AWD. The findings show that participating in or spectating of the event does not affect attitudes toward IWD or AWD. For attendees compared to nonattendees, no significant differences were found. The lack of significant differences between attendees and nonattendees may be due to continued improvements in attitudes toward disabilities and educational efforts at awareness. It may also be impacted by disabilities becoming more commonplace in society. With the overall attitudes toward IWD and AWD in this sample being positive (in comparison to the neutral midpoint of the scale), it seems that experiencing or witnessing wheelchair basketball does not have a significant impact. If attitudes are negative to begin with, improvements may occur.

This study helps to affirm research reports that suggest ways to improve attitudes about IWD effectively. Namely, interventions that result in the greatest attitude change combine educational and behavioral interventions that facilitate notable contact with IWD (Hunt & Hunt, 2004; Krahé & Altwasser, 2006). Educational or cognitive components include interventions that provide information about various types of disabilities and that challenge myths and stereotypes about IWD (Hunt & Hunt, 2004; Krahé & Altwasser, 2006). While behavioral interventions include participation in a sport or event with IWD, this one-time experience is not enough to impact perception change. The wheelchair basketball tournament attempted to include an informational section prior to the start of the tournament in which IWD shared their life experiences. However, there were audio technical difficulties that resulted in difficulty hearing the individuals speak. If these stories had been clearly communicated, the results may have been different. Furthermore, having informational booths where participants could learn more about wheelchairs, disabilities, and the challenges faced in daily life could have contributed to improved attitudes.

The success of these combinational methods is based on contact theory (Allport, 1954; Krahé & Altwasser, 2006; B. Lee et al., 2004). Numerous factors such as context, frequency, and quality of contact between the in- and out-group members influence the effectiveness of change in attitudes (Krahé & Altwasser, 2006; B. Lee et al., 2004; Seo & Chen, 2009; Yuker & Hurley, 1987). Therefore, lack of contact with IWD during the tournament may also explain why attitudes toward IWD were not impacted. The competitive nature of a wheelchair basketball tournament may have removed the focus and attention on the actual experience of having a disability and, instead, turned attention toward winning.

RQ3: Does One's Attitude Toward Individuals With Disabilities Predict Attitude Toward Athletes With Disabilities?

As more opportunities for AWD emerge, and individuals without disabilities have more contact with IWD daily in a variety of settings (e.g., workplace, schools, family members), the positive correlation between perceptions of IWD and AWD is understandable. While challenges still exist for IWD and AWD, policies and initiatives have been put into place that have improved those experiences and perceptions (e.g., Paralympics Days at schools; McKay et al., 2015). The removal of the "other" stigma from IWD and AWD can lead to improvements in overall perceptions.

Limitations

There are several limitations to this study. The wheelchair basketball event is an on-campus experience, in which students only have access to use a wheelchair during the game. They do not experience a routine, such as entering the building, checking in, or interacting in a wheelchair prior to the game. These everyday experiences may affect an individual on a more personal level and these intimate experiences shape a person's system of beliefs (Marcus & Roy, 2019). Since core identities or personalities are stable and established in adulthood (Rakhshani & Furr, 2020), trying to change belief systems as an adult takes more than one event. More exposure opportunities can improve young adults' perceptions and attitudes toward IWD over time. These accessibility events include the everyday type of interactions that promote change (Marcus & Roy, 2019; Rakhshani & Furr,

2020). They also avoid one-time simulations and put the able-bodied individuals in an environment that supports change (French, 1996; Kirk et al., 2020) and allows IWD to be the experts or presenters. In this way, both populations gain experience in a role to which they are not accustomed.

Another limitation is the small participation rates of several racial groups. Given this, future research should examine differences among racial groups more specifically by gaining higher participation rates to make equal comparisons across.

Conclusions

The impact of negative attitudes toward IWD and AWD can result in negative self-perceptions (e.g., pessimism, feeling of hopelessness, and exclusion; Grand et al., 1982; Hergenrather & Rhodes, 2007; Tervo et al., 2004; Weston, 2017). Exclusion among IWD is not limited to the workplace; it also occurs in educational and sports settings, particularly participation in a sport. In the sports context, negative attitudes and perceptions toward IWD and AWD result in them being ignored despite their accomplished success in competitive sports (Brittain, 2004; Devine, 1997; Weston, 2017). As such, interventions that aim to change attitudes toward IWD and athletes are important for continued progress toward equity and inclusion. More research should be conducted on the influence of combined educational and participatory interventions in the sports setting. Furthermore, there is value in adapted physical education courses in college education and in inclusive physical education in elementary through high school settings. Education and contact can lead to improved attitudes toward IWD, and workplaces and schools should continue to work toward education and improving the experiences and inclusion of IWD.

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