BEYOND INCREDIBLE: THE PARALYMPIC ROAD TO RIO – AN ETHNOGRAPHIC STUDY

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BY

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DEDICATION

To all my athletes, patients, clients, instructors, peers, and family who have taught me so many lessons, I am personally and professionally grateful.

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I would like to gratefully acknowledge the many individuals who have contributed to this dissertation. I would like to thank my committee chair Dr. Mary Thompson for assigning a journal article that stimulated the idea for this topic. I would like to thank my committee members, Dr. Kelli Brizzolara, Dr. Chad Swank, and Dr. Kerri Morgan, for their assistance and support. I am also grateful for the assistance of four entry-level physical therapy students at Texas Woman's University, Ashley Brandish, Somer Meyers, Paige McMillian, and Mariana Rong who provided assistance with capturing and coding the social media data for this study. I am also very thankful for Cathy Sellers, the U.S. Paralympic Track and Field High Performance Director for approving this project and my access to the team. Erica Wheeler and Teresa Skinner, two coaches for the team, were also instrumental in helping me to get started and for encouraging me to push through. And obviously, this project would never have happened without the support of the team itself. I am thankful for their willingness to trust me with their stories. It is my sincere hope that this project with serve as a catalyst for continued growth of the Paralympic movement.

ABSTRACT

SHERI WALTERS

BEYOND INCREDIBLE: THE PARALYMPIC ROAD TO RIO –
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AUGUST 2018

The primary purpose of this ethnographic study was to understand the culture of the U.S. Paralympic Track and Field team from the 2015 World Championships through the 2016 Rio Paralympic Games. Secondary purposes included examination of the influence of sport in the lives of those involved in elite adaptive sport, greater examination of barriers and facilitators to participation for those involved in elite sport, issues related to and relevant to healthcare providers and coaches, and the psychosocial effects of the International Paralympic Committee Classification System within Paralympic track and field.

Subjects were observed and select participants interviewed after being identified through purposeful snowball sampling. Observation notes, transcribed semi-structured interviews, social media posts, and media coverage were analyzed using theoretical frameworks to guide analyses. Feminist theory guided the ethnographic data analysis related to sport socialization. Self-determination theory was used to analyze the data relevant to healthcare providers and coaches in two separate phenomenological studies. Morgan's practice community was used to theoretically frame the phenomenological

study of classification. Rigor was established through triangulation, member checking, peer debriefing, and maintenance of a clear audit trail.

Through data analysis, common themes related to the power of sport included a variety of health benefits, and increased participation in society. Barriers to participation included lack of awareness, cost, comorbidities, classification, and "doping." Facilitators included family, sponsorships, others involved in sport, and fun. Negative aspects included injuries, illnesses, and transportation issues. Prominent negative aspects require staff to assist in managing those negative consequences, to educate athletes of the potential risk, and to allow athlete autonomy.

Common themes that emerged related to socialization into and via sport included aspects related to shared training environments, traveling experiences, humor, and integration into able-bodied training environments and events. The athletes used sport and humor as a form of resistance against disablism, leading to a sense of empowerment.

Themes related to the role of healthcare providers included the introduction of patients to sport, athletes' perceptions of their healthcare providers as facilitator or barrier, and the roles of a healthcare provider. Providers could play a variety of roles, including serving as a researcher, coach, classifier, or working with athletes as a team medical provider. Providers reported experiences within the Paralympic movement that were personally and professionally rewarding.

Prominent themes related to coaching included coaching philosophy, development, and challenges. Another theme was the influence of working with this

population in the coaches' lives. Paralympic coaches appear to have adopted an autonomy-supportive-style of coaching, thus empowering their athletes. Coaches report difficulty finding quality adaptive sport coaching education and resources, relying on peer mentorship as a primary mode of gaining knowledge and experience. Adaptive sport athletes often have difficulty finding a program or coach, prompting discussion of integrating athletes with disabilities into able-bodied training groups. Coaches find rewards and meaning in their athletes and their work experiences with this population.

Classification issues involving ambulatory sprinters and wheelchair racers produced themes related to psychosocial and potential ethical issues, leading to suggestions for improvement. Lack of transparency and inconsistencies by Paralympic officials and classifiers led to mistrust of the classification system. Potential opportunities for improvement include increased athlete involvement, transparent communication of factors involved in policy decisions, and examination of specific impairments and performance enhancing technology.

This qualitative study gave a voice to a population that previously had been rarely heard. In giving these participants the opportunity to tell their story, the participants likely felt empowered in being heard, and we learned what factors were associated with these athletes getting and staying involved with Paralympic sport, including some of the challenges and catalysts to achieving and maintaining elite sport status. We also gained insight into the perspective of the team's coaches, the team's healthcare providers, and some national and international classifiers.

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CHAPTER I

INTRODUCTION

According to the U.S. Centers for Disease Control and Prevention, 53 million American adults, 1 out of 5, live with a disability at a cost of $400 billion per year (Centers for Disease Control and Prevention, 2015). The CDC reports that 1 out of 6 children, between the ages of 3 and 17, have a developmental disability, including cerebral palsy and muscular dystrophy (Centers for Disease Control and Prevention, 2017). Throughout history, those with disabilities have been treated differently, from inhumane to revered. With educational and social reform, and a recognition of the civil rights of people with disabilities, a movement for equal acceptance and inclusion throughout all of society has been sought (DePauw & Gavron, 2005).

Venues within American culture that people with disabilities have sought equal footing are within the sport, recreation, and play domains. In fact, play has recently been recognized by the United Nations as a fundamental human right (Sabatello & Schulze, 2014). Play and leisure, as an experience, allows a person to suspend aspects of reality. A loss of choice in play or leisure activity is a loss of something essential to autonomy and individuality (Bundy, 1993). For people with disabilities, activities that produce meaningful participation have specific elements, such as social networking that can help

to induce a sense of belonging (Willis et al., 2016). Belonging gives life its meaning, purpose, and identity. The sport, recreation, and play domain is considered essential to fully realizing the human rights promise (Hubbard, 2004).

Sport for people with disabilities, and the Paralympic movement as a whole, grew out of the rehabilitation model during World War II through the efforts of Dr. Ludwig Guttmann. Dr. Guttmann used sport to aid in the rehabilitation of soldiers who acquired spinal cord injuries (SCI) in the war. He founded the Stoke Mandeville Games in 1948, the precursor to the Paralympic Games (Brittain & Green, 2011). Dr. Guttmann believed that participation in sport could benefit people with disabilities by providing enjoyable recreational exercise that would help them re-integrate into society (Brittain & Green, 2011).

Many researchers have attempted to measure the influence of sport in the lives of people with a disability. For those with an impairment, physical activity improves and maintains cardiovascular fitness, self-efficacy, and self-perceived quality of life even more than for someone without an impairment (Blauwet & Willick, 2012). Sport may serve as a catalyst to improved self-esteem, self-perceived quality of life, self-efficacy, body image, empowerment, self-worth, and motivation for continued involvement along with decreased levels of anxiety and depression (Campbell & Jones, 1994; Labudzki & Tasiemski, 2013). Sport has been demonstrated to improve social integration and socialization of people with disabilities (Skucas, 2013). Individuals with paraplegia who are involved in wheelchair sports are more likely to avoid major medical complications

and hospitalizations (Curtis, McClanahan, Hall, Dillon, & Brown, 1986; Stotts, 1986) and physical activity is a known contributor to 4-year survival following a SCI (Krause & Kjorsvig, 1992).

Despite these benefits, many barriers to participation have been described by a variety of researchers. Barriers that have been described in the literature include a lack of awareness of available programs (Taylor & McGruder, 1996), the environment (both the social environment and the environment related to the geographical area) (Levins, Redenbach, & Dyck, 2004), cost (Tasiemski, Kennedy, Gardner, & Blaikley, 2004; Wu & Williams, 2001), a lack of knowledgeable coaches (DePauw & Gavron, 1991), gender roles (Skucas, 2013), and a "loss of an able identity" (Levins et al., 2004). Identifying barriers within the Paralympic community, as well as understanding how athletes with a disability overcame them to become successful in their chosen sport, could aid in assisting others to participate.

Facilitators to participation have also been described by researchers and include intrinsic factors such as having an athletic identity (Perrier, Sweet, Strachan, & Latimer-Cheung, 2012), and extrinsic factors of having peer athlete mentors (Perrier, Smith, & Latimer-Cheung, 2015), other social support such as family support (Jaarsma, Geertzen, de Jong, Dijkstra, & Dekker, 2014), religion (Howe & Parker, 2014), and the rehabilitation process (Skucas, 2013). Understanding these facilitators and discovering how they might be enhanced may also assist in aiding others in their athletic pursuits.

Once involved in elite adaptive sport, athletes are socialized into the elite sporting culture and have experiences as unique as their individual situations. These experiences include encounters with healthcare providers who may, or may not, understand the influence of certain treatment recommendations on their ability to compete at a high level. Encounters occur with coaches who strive to provide assistance, but who may be limited due to a lack of education and experience with disability aspects. The athletes also have encounters with a sport classification system that has the power to influence their inclusion in the sport and their ability to make sport a financially viable option.

Statement of the Problem

There are no known previous investigations of the culture of an entire Paralympic team, especially during a Paralympic Games year. A qualitative study of this nature may give rise to unique findings within an elite adaptive sport population. While the initial research questions were designed to identify the influence of Paralympic sport in the lives of team members, and to identify barriers and facilitators to participation, the questions evolved over time with knowledge of the environment and the individuals involved including questions more specific to the elite adaptive sport experience.

Past studies have examined socialization into adaptive sport (Bryant & McElroy, 1997; Hedrick, 1979; Wu & Williams, 2001), socialization via sport (Ashton-Shaeffer, Gibson, Holt, & Williming, 2001b; Caron, Bloom, Loughead, & Hoffmann, 2016; Hedrick, Morse, & Figoni, 1988), elite wheelchair road racing (Hedrick et al., 1988; Williams & Taylor, 1994), adaptive sport coaching and coach development (Cregan,

Bloom, & Reid, 2007; McMaster, Culver, & Werthner, 2012), and the psychosocial aspects of the IPC Classification system (Howe & Jones, 2006; Howe, 2008; Peers, 2011). While these studies do provide insight for this current project, each is just a piece of the puzzle contributing to the whole culture of the Paralympic movement, which is sorely lacking and in need of additional research across all sport domains.

Purposes of This Study

The primary purpose of this ethnographic study was to understand, in a qualitative manner, the culture of the U.S. Paralympic Track and Field team from the 2015 World Championships through the completion of the 2016 Paralympic Games. Secondary purposes included examination of the influence of sport in the lives of those involved in elite adaptive sport, greater examination of the barriers and facilitators to participation for those involved in elite sport, issues related to and relevant to healthcare providers and coaches, and the psychosocial effects of the IPC Classification System within Paralympic track and field. The ultimate goals are to use this study to aid in building awareness within the rehabilitation and coaching professions of the power of sport in the lives of participants, so that barriers and facilitators to participation may be minimized or enhanced, respectively. The hope is to assist those with disabilities in becoming involved in a program of their choosing and to help inform the "agents of social control" within the classification process of some of the psychosocial influences of the classification process.

The specific purposes of this ethnographic study were to:

1. Give a voice to the team and family members of the Rio 2016 hopefuls.

2. Assess the sport socialization histories of current U.S. Paralympic Track and Field team members, including the barriers and facilitators of participation, so that the participant experiences could provide insight into the sport socialization process for persons with disabilities.

3. Help inform healthcare professionals of opportunities available to people with disabilities for sport participation and avenues through which professionals may assist elite athletes in achieving their sporting goals.

4. Help inform sport coaches of opportunities available to people with disabilities for sport participation, of avenues through which they can learn and grow as coaches of people with disabilities, and avenues through which they may assist athletes in achieving their sporting goals.

5. Inform the relevant "players" within the IPC of the impact of the IPC Classification system and process on team members, for their consideration in the rules development process.

Rationale for This Study

With technology advances that have transformed healthcare and increased survival, the number of individuals, both civilian and military, living with a disability has increased. Therefore, society has a duty to address the holistic needs of people with disabilities in general. Since sport, recreation, and play are essential to life, there is a need to understand the impact of sport participation in the lives of participants and their families, the socialization process of a person with a disability into and through sport, the

role of the healthcare provider and the coach in assisting individuals into sport and in obtaining their sporting goals, and the role of the IPC classification system and process in lives of team members.

This qualitative study illustrates the culture within a Paralympic sport, the themes related to the influence of sport in the lives of those involved, and a greater understanding of the barriers and facilitators that those with physical disabilities experience to becoming and staying involved in elite competitive sport.

Research Questions

The research questions that guided the present study were:

1. What was the socialization process into adaptive sport for the Paralympic track and field hopeful?

2. What was the impact of participating at an elite level in Paralympic track and field on team and family members, including what was the socialization process via their participation?

3. How can health care professionals assist a person with a disability in becoming involved in adaptive sport and further assist athletes with disabilities in achieving their sporting goals?

4. How can sport coaches become involved in adaptive sport, assist a person with a disability in becoming involved in adaptive sport, and further assist athletes with disabilities in achieving their sporting goals?

5. What is the psychosocial impact of the IPC Classification system and process on Paralympic track and field team members?

Definition of Terms

The following terms were used in this study and are presented in alphabetical order:

Able-bodied refers to an individual with no physical disability.

Athlete refers to anyone competing in events for the team, including the guides for the visually impaired.

Barriers refers to obstacles that must be overcome for the athlete or family to participate in adaptive sport.

Benefits refers to any positive impact that adaptive sport has on the athlete in an emotional, physical, mental, or social manner.

Classification refers to the process through which athletes with physical impairments are grouped into classes of like impairments for competition purposes to even the playing field within adaptive sport.

Classifier refers to a person who works to institute the IPC Classification system to group athletes into appropriate groups for sport participation based on physical ability.

Costs refers to an assumable monetary expense that creates a perceived barrier to participation.

Family refers to the spouse or parent of an athlete for the purposes of this study.

Hopeful refers to an individual athlete, who through their involvement at one of the team sponsored events aspires to reach the Paralympic Games.

International Paralympic Committee (IPC) refers to the international organization that oversees the Paralympic Games, and is the governing body for a select number of Paralympic sports, including Paralympic Track and Field (internationally known as Para Athletics).

Paralympic Games refers to a multi-sport event for athletes with physical, visual, or cognitive disabilities. This event is held after the Olympic Games for individuals to participate at an elite level in various sporting events.

Practice Community is a group of people who share a concern or a passion for something they do, and learn how to do it better as they interact regularly (Lave & Wenger, 1991).

Relevant social media posts and media stories were those that pertained to team members' participation in sport (e.g., their relationships with sponsors, team members, coaches or stories about how they became involved in sport and the impact of participation in their lives).

Staff refers to any paid or volunteer member of the team, including paid U.S. Paralympics staff, paid and volunteer coaches selected for the team, and other volunteer staff (e.g., prosthetists, medical doctors, physical therapists, athletic trainers, massage therapists, wheelchair mechanics).

Team Member refers to any "athlete" or "staff" that has been selected by U.S. Paralympic Track and Field to represent the organization at an event who has been recognized as a potential team hopeful.

Theoretical Framework refers to the theory or model used to frame the analysis of the data. In this dissertation, three theoretical frameworks were used. The theoretical construct used to analyze the IPC classification process is *Morgan's practice community* (Morgan, 1994). Morgan's practice community has links to the *feminist model*, which has as its end goal the empowerment of the primary agents, in this case the athletes (Hall, 1995). The feminist model was specifically used to analyze the data surrounding the socialization into and via Paralympic track and field participation. Similar to the idea of empowerment is the self-determination theory and its constructs of competence, relatedness, and autonomy (Ryan & Deci, 2000). The self-determination theory was used to frame the analysis of the data regarding the role of healthcare providers and coaches within the Paralympic movement.

U.S. Paralympics refers to the non-profit organization that provides opportunities for people with disabilities to participate in select sports at an elite level. It is a division of the United States Olympic Committee (USOC).

Assumptions

For the purposes of this study, the following assumptions were made:

1. Qualitative analysis, using ethnographic techniques, effectively captured the required information to answer the research questions.

2. Participants were honest in their responses, and interactions, during the interview, observations, and in their social media posts.

Limitations

This study was conducted recognizing the following limitations:

1. Participants were limited to Rio 2016 Paralympic Games track and field hopefuls, their families, and team staff.

2. All observational field notes were captured through the perspective of the primary author.

3. All interviews were conducted by the primary author.

Primary Investigator's Relationship to the Topic

Given the primary investigator's (PI) central role in this study, and the limitations that role presents, a discussion of her relationship to the topic is imperative. The PI's relationship to the topic is from her personal lifelong experiences, including the observation of several family members with physical disabilities who engage in strenuous manual labor and various leisure activities. The PI's father had an acquired below the knee amputation in a car accident when he was 14-years-old. The PI's uncle had an acquired upper extremity deficiency following a different car accident when he was 10-years-old. These men worked as ranchers, truck drivers, and mechanics whose careers and livelihoods were affected by societal and legal limitations regarding their physical disabilities. The PI's adult cousin sustained a C6 complete spinal cord injury (SCI) in a diving accident when the PI was 4-years-old. The cousin continued his very active

lifestyle following the injury, including driving, boating, and motorcycle riding. The PI is a cancer survivor, and experienced the look in people's eyes when her scars were visible.

The PI is a certified athletic trainer and a licensed physical therapist which helps to inform her world view, including her various experiences working with elite and professional athletes at all levels of sport. The PI's first experience with elite adaptive sport was at the Chula Vista Olympic Training Center in 2006 when she completed her two-week USOC volunteer experience. During that experience, she worked with the resident sprinters who had lower extremity limb loss. Her first experience working with the entire U.S. Paralympic Track and Field team came in 2011 for the Para Pan-American (Para PanAm) Games in Guadalajara, Mexico. She served as a part of the USOC's medical staff at the 2012 London Paralympic Games. She continued to periodically serve as a volunteer staff medical staff member leading into the 2015 season.

An initial feasibility study for this project was conducted as partial fulfillment of the course requirements of a doctoral level physical therapy course at Texas Woman's University. The genesis of the project came from an assigned reading for the course, Levins et al.'s (2004) "Individual and Societal Influences on Participation in Physical Activity Following Spinal Cord Injury: A Qualitative Study." The PI read the article on a flight to the Chula Vista Olympic Training Center for a camp prior to the 2015 IPC World Championship. Some of the quotes from the participants in the study and some of the authors' conclusions struck a chord. While at the camp, the PI informally spoke to

the athletes about their experiences in getting involved with adaptive sport. The PI also had the opportunity to speak with a coach and the high performance director about potential dissertation topic ideas. For the course, students were required to complete a mini-qualitative project to demonstrate the knowledge gained throughout the course in a practical way. That project was developed into an abstract accepted for presentation at the 2017 American Physical Therapy Association (APTA) Combined Sections Meeting (Walters & Thompson, 2017). It is through these lenses of perspective that the data for this project were collected and analyzed.

Significance of the Study

Given the large number of people in the United States living with a disability and the power of sport and recreation in the lives of people with a disability, there are at least three societal needs: greater awareness of opportunities available to participate, the reduction of barriers to participation, and the enhancement of facilitators to participation. For those not currently participating, an introduction to those who are, and the levels of performance and success that they have achieved, is needed to help stimulate interest and action.

This study was the first to examine the culture of an entire Paralympic team during a Games year, rather than focusing on just one aspect of adaptive sport. In addition to providing information on the socialization process, the results provide practical guidance to healthcare providers and coaches to assist people with disabilities in participating and achieving their sporting goals. The results could also inform the IPC

leadership about the influence of their decisions regarding the classification process in the lives of those the organization seeks to include and empower.

Organization of the Dissertation

An overview of the entire dissertation was given in Chapter I. Chapter II includes the relevant literature by introducing Paralympic sport, sport socialization, and implications for healthcare providers and coaches, classification issues, and their associated theories.

In an attempt to build awareness of adaptive and Paralympic sport across the widest base, the results of this entire study are presented in the form of five separate journal articles, corresponding with the five purposes. The rationale for this approach is due to methodologies employed. While a single data collection method was used throughout this dissertation and is described in detail in Chapter III, the qualitative data analyses varied. For each purpose, the massive amount of data were analyzed through the lens of different underlying theoretical constructs elaborated in Chapter III. Chapter III addresses the methodological basis for the entire study, and Chapter IV is the article reporting the results and discussion of the feasibility study, that informed the methodological decisions for the dissertation data collection and analyses. Chapter V focuses on the socialization into and via Paralympic track and field participation. Chapter VI addresses the role of healthcare providers in assisting adaptive athletes, whereas Chapter VII addresses adaptive sport coaching and coach development. The focus of Chapter VIII is the IPC classification process and issues that occurred during the

study period, and perceptions of those issues. Each article is written in the target journal's preferred format, utilizing each specific journal's instructions to the author.

The dissertation concludes with Chapter IX, a global discussion of the findings relative to the broad research questions that frame this study, connecting these findings to existing literature, and to discuss the implications for theory, research and practice within medical and clinical practice, in schools, by coaches, and within the Paralympic movement as a whole. This chapter includes an examination of limitations and strengths of this study. Finally, this chapter offers recommendations for further research on the culture of Paralympic sport teams, including issues related to the transition into elite sport and through elite sport, healthcare of team members, coaching, and the classification process.

CHAPTER II

REVIEW OF LITERATURE

The primary purpose of this ethnographic study was to understand, in a qualitative manner, the culture of the U.S. Paralympic Track and Field team from the 2015 World Championships through the completion of the 2016 Paralympic Games. Secondary purposes included examination of the influence of sport in the lives of those involved in elite adaptive sport, greater examination of the barriers and facilitators to participation for those involved in elite sport, issues related to and relevant to healthcare providers and coaches, and the psychosocial effects of the International Paralympic Committee (IPC) Classification System within Paralympic track and field. To achieve these purposes, Chapter II serves as a comprehensive literature review for this dissertation. This chapter will discuss the following main topics and the corresponding theoretical frameworks: the history and influence of adaptive sport, socialization into and through adaptive sport, issues relevant to healthcare providers, subjects relevant to sport coaches, and matters surrounding the Paralympic Track and Field Classification system. These main topics will serve as the foundation for the feasibility study (Chapter IV), each submitted article (Chapters V, VI, VII, VIII), and support for the conclusion (Chapter IX).

Introduction to Paralympic Sport

As an experience, play and leisure are intrinsically motivated and internally controlled, and allow a person to suspend aspects of reality, creating a joyful internal

reality alone or with others (Russell, 2009; Sutton-Smith, 1997). As adults, play and leisure are more entwined with rules and regulations. A loss of choice in play or leisure activity due to disease or disability is a loss of something essential to autonomy and individuality (Bundy 1993). For people with disabilities, play and leisure activities that produce meaningful participation, such as competitive sport, can produce a sense of belonging (Willis, Girdler, Thompson, Rosenberg, Reid, & Elliot, 2016). Belonging gives life its meaning, purpose, and identity. For these reasons, sport, and similar activities, is considered essential to fully realizing the human rights promise (Hubbard, 2004).

The Paralympic movement grew out of the rehabilitation model during World War II, through the efforts of Dr. Ludwig Guttmann (Brittain & Green, 2011). Wartime medical advances to combat sepsis and kidney failure lead to the survival of individuals with spinal cord injuries. In 1944, Dr. Guttmann, a neurologist, developed a comprehensive method of care that included early admission to a spinal rehabilitation unit with the goal of preventing and treating spinal cord injury-related complications, active rehabilitation, and social reintegration to combat depression. He introduced sport to aid in the holistic rehabilitation of British veterans. Guttmann founded the Stoke Mandeville Games in 1948, a two-team archery competition that quickly expanded to include netball (basketball) and javelin (Brittain, 2012). Over time, this annual precursor to the 1960 Paralympic Games slowly grew to include more sports and teams from around the world (Brittain, 2012). Dr. Guttmann believed that sport participation could

benefit people with disabilities by providing them with enjoyable recreational exercise that would instill hope and self-worth (Brittain, 2012). Also, he believed that sport participation could benefit society by breaking down the barriers between the public and veterans with spinal cord injuries, thus changing societal attitudes as these athletes could compete in sports that most non-disabled persons would struggle with (Brittain, 2012).

The Paralympic movement also has roots in U.S. higher education. Timothy Nugent, a sports enthusiast and World War II veteran who earned a bachelor's and master's degree from University of Wisconsin through the G.I. Bill, was asked in 1948 to start the first comprehensive program of higher education for individuals with disabilities at the University of Illinois Galesburg campus (Wheelchair Sports Federation, 2016). This campus included a former Army hospital that could accommodate people with wheelchairs. Nugent's goal was to help these disabled veterans, many first generation college students, to develop the skills to live independently and fully participate in college life, including sports. This led to early adaptive sport efforts including wheelchair basketball, football, track and field, archery and other sports.

When the governor decided to close the Galesburg campus in 1949, Nugent was instrumental in moving the program to the main campus at Urbana-Champaign and leading efforts to ensure that campus was made accessible to all. In that same year, he organized and coached the nation's first collegiate wheelchair basketball team and founded the National Wheelchair Basketball Association to provide year-round structure for this adaptive sport. Nugent also organized the first wheelchair basketball tournament

involving six teams from Veteran's Administration hospitals in 1949 (Brown, 2008). Nugent grew the University of Illinois program until his retirement in 1985, and the program has continued to grow. For example, in 2014, the training facility in the Division of Disability Resources and Educational Services was designated as a U.S. Paralympic Training Site for wheelchair track and road racing. Also, 14 athletes who trained full-time at the University of Illinois participated in the 2016 Summer Paralympics in Rio de Janeiro, Brazil (College of Applied Health Sciences, 2018). Upon his death in 2015, the IPC credited Nugent with "kick starting education and sporting opportunities for people with impairments as well as leading the early fight for improved accessibility in the USA" (International Paralympic Committee, 2015d).

The further evolution of Paralympic sport has been shaped by many things including rules, lawsuits, state and Federal legislation and design trends. For example, marathon organizers historically had rules banning wheelchairs on the grounds that their participation was an unfair advantage and constituted a safety hazard during the race. Prior to the 1975 Boston Marathon, the race director told Bob Hall that if he could finish under three hours he would be awarded the race medal. Hall participated and became the first wheelchair racer in the Boston Marathon (Hedrick et al., 1988), finishing in two hours and 58 minutes as an unofficial entrant. Bob Hall's ability inspired the Boston Athletic Association (BAA) to recognize and certify wheelchair athletes as official entrants. The BAA has since established qualifying times for a Push Rim Wheelchair Division, a Blind/Visually Impaired Division, Mobility Impaired Program, a Hand Cycle

Program, and a Duo Team Program (Hums, Schmidt, Novak, & Wolff, 2016). As a result, U.S. wheelchair road racing has grown exponentially across disability classes, including the rise of sponsorships for these elite athletes.

Lawsuits and subsequent legislation that ensure inclusion have also shaped Paralympic sport. For example, the future of wheelchair track may one day trace its growth to the inclusion of wheelchair events in high school interscholastic meets, in large part due to Tatyana McFadden's (current U.S. Paralympic Team member) 2006 lawsuit. In the lawsuit, McFadden requested equal access; the ability to participate at the same time and on the same track as her high school's track team. The McFadden lawsuit resulted in the passage of the *Fitness and Athletics Equity for Students with Disabilities Act* in Maryland in 2008, which required schools to create equal athletic and physical education opportunities for students with disabilities (Popke, 2008).

The Americans with Disabilities Act (ADA), signed into law in 1990, has greatly improved the lives of people with disabilities in the United States. The ADA is a civil rights law that ensures that people with disabilities have the same rights and opportunities as able-bodied persons. This Federal law and the universal design movement, that seeks to create eye-pleasing buildings, products, and environments that are inherently accessible, have resulted in improvements not just in facility design, but also in programs, services, and operations leading to greater access, greater inclusion, and sense of belonging (Hubbard, 2004; Hums et al., 2016). Together, some of these and other local rule changes, lawsuits, state and Federal legislation, and design trends, have led to U.S.

Olympic Committee policy changes governing Paralympic sport in the United States since the Ted Stevens Olympic and Amateur Sports Act of 1998 brought the Paralympic and Olympic committees under one national organization (Schwarz, 2008).

One might argue that the Paralympics is a mature organization, having its roots in rehabilitation and education in the late 1940s, to its first official games in 1960, and then further evolving over the decades through rules, lawsuits, legislation, and policy changes in the United States and Internationally. Public Games in one form or another have been occurring for 70 years, yet the road to social integration through sport first proposed by Guttmann and Nugent has not been fully realized. Paralympic athletes, who identify themselves as committed and serious, feel that the public does not view them as elite athletes (Van de Vliet, 2012). This discrepancy is likely due to the lack of awareness within the general population of the differences between the elite performance of the Paralympics and the inclusive participation of the Special Olympics. While there are some events for elite athletes with intellectual disabilities in the Paralympics, the Paralympic Games run in association with the Olympic Games and are for elite athletes with physical disabilities. The athletes that compete in these games have similar training regimens as Olympic athletes, and in some instances train alongside them.

To qualify for the Paralympic Games, an athlete must meet a qualifying standard, and athletes are subject to similar rules as Olympic athletes, such as drug testing. Gold, silver, and bronze medals are awarded and often come with monetary awards from the athlete's home country. In contrast, the Special Olympics is designed for athletes with

intellectual disabilities or developmental delays. The organization's mission is to promote inclusion and it uses sport as a tool to help an athlete reach their maximum potential. All Special Olympic participants are awarded, and selection to higher levels of competition is not based on performance, but may be through a lottery system (Rogers, 2013). The average Paralympic athlete is out of high school and is training on a near full-time basis. The average Special Olympics athlete is in middle or high school. In 2013, the Special Olympics served over 4.4 million athletes worldwide with an average of nine games occurring every hour (Special Olympics, 2018). World Records are not available for the Special Olympics. To illustrate the elite nature of the Paralympic athlete, the Olympic and Paralympic World Records in the 100-m ambulatory races and in the ambulatory discus throw are provided in Table 2.1 (International Association of Athletics Federations, 2018; International Paralympic Committee, 2018).

Table 2.1

Sample of Olympic and Ambulatory Paralympic World Records by Class and Gender

Event/Class	Time (s) M/F	Event/Class	Distance (m) M/F
Olympic 100-m	9.63/10.62	Olympic Discus	69.89/72.30
Paralympic 100-m		Paralympic Discus	
T11	10.92/11.91	T11	44.66/40.42
T12	10.66/11.40	T12	52.51/47.40
T13	10.46/11.79	T13	53.61/44.67
T20	10.85/12.24	T20	40.69/37.58
T35	12.22/13.43	T35	54.13/31.92
T36	11.90/13.68	T36	42.96/28.01
T37	11.35/13.13	T37	59.75/37.60
T38	10.74/12.44	T38	52.91/32.14
T40	–	T40	25.62/23.34
T41	–	T41	45.78/33.38
T42	12.01/14.61	T42	54.14/33.19
T43	10.57/12.79	T43	63.03/32.22
T44	10.61/12.90	T44	64.11/44.53
T45	10.94/14.00	T45	26.87/20.09
46/47	10.53/11.95	46/47	52.64/42.12

Power of Adaptive Sport

Despite the public's confusion about the Paralympics versus Special Olympics, many believe, like Guttmann and Nugent, that sport can be used to improve the health and well-being of people with a disability. For a person with a disability, physical

activity may be more important for the improvement and maintenance of cardiovascular fitness, self-efficacy, and self-perceived quality of life than for someone without a disability (Blauwet & Willick, 2012). Sport may serve as a catalyst to improve physical (Blauwet & Willick, 2012; Yazicioglu, Taskaynatan, Guzelkucuk, & Tugcu, 2007), mental, emotional, and social health (Anneken, Hanssen-Doose, Hirschfeld, Scheuer, & Thietje, 2010; Gioia, Cerasa, Di Lucente, Brunelli, Castellano, & Traballesi, 2006; Muraki, Tsunawake, Hiramatsu, & Yamasaki, 2000; Sherrill, Hinson, Gench, Kennedy, & Low, 1990; Sporner et al., 2009; Tasiemski, Kennedy, Gardner, & Taylor, 2005; Tasiemski & Brewer, 2011; Wetterhahn, Hanson, & Levy, 2002). For example, individuals with paraplegia, who are involved in wheelchair sports, are more likely to avoid major medical complications and hospitalizations (Curtis, et al., 1986; Stotts, 1986), and physical activity is a known contributor to 4-year survival following a spinal cord injury (SCI) (Krause & Kjorsvig, 1992). In adults with SCI, participation in organized sport is positively associated with employment (Blauwet et al., 2013). People with physical disabilities have fewer opportunities to express themselves physically, and any level of sport participation may positively influence their physical health and quality of life.

The social, emotional, and physical benefits for youth athletes may have even more profound benefits. Research in able-bodied high school populations indicates that student-athletes have higher educational aspirations, self-efficacy, and greater use of academic strategies than students who do not participate in sport (Ryska & Vestal, 2004),

similar positive health benefits were proposed by Hunter (2009) in youth adaptive sport athletes.

Barriers and Facilitators to Participation

A variety of researchers found many barriers to participation in adapted sport despite the profound benefits previously discussed. These barriers include a lack of awareness of available programs (Taylor & McGruder, 1996), the material and attitudinal environment (Levins et al., 2004), cost (Tasiemski et al., 2004; Wu & Williams, 2001), lack of knowledgeable coaches (DePauw & Gavron, 1991), gender roles (Skucas, 2013), and a "loss of an able identity" (Levins et al., 2004, p. 501). Identifying barriers within the Paralympic community, as well as understanding how athletes with impairments overcame them to become successful in their chosen sport, could assist others in becoming involved in sport and in progressing to higher levels of sport if desired.

Despite the multitude of barriers, facilitators to participation have also been identified by researchers and include intrinsic factors, such as having an athletic identity (Perrier et al., 2012), as well as extrinsic factors. Extrinsic factors include social factors, such as peer athlete mentors (Perrier et al., 2015) and other social support, such as family (Jaarsma et al., 2014), religion (Howe & Parker, 2014), and the rehabilitation process (Skucas, 2013). Understanding these facilitators and discovering how they might be enhanced, in addition to finding solutions for minimizing barriers, may also assist in aiding others in their athletic pursuits.

Sport Socialization

As discussed previously, many social factors such as having a peer mentor facilitate sport participation. Peer mentors have a role in helping a new athlete transition, or socialize into and through the sport. In essence, the peer mentor helps the new athlete to acquire the sport's culture. When considering the research regarding the culture of a sport team, it is important to distinguish between socialization *into* the sport versus socialization *via* sport. Socialization, in general, is the process through which a person "internalizes the knowledge, values, and norms that are essential to participation in social life," or acquires a group's culture (Williams & Taylor, 1994, p. 416). A group's shared values, beliefs, ideologies, norms, artifacts, and social behaviors are its culture (Williams & Taylor, 1994). Specifically, socialization *into* sport refers to the introduction to the sport, usually through various socializing agents, such as parents, teachers, coaches, and peers (Greendorfer, 2002). Socialization *via* sport is the process through which the traits, skills, and values associated with a group culture are assumed by a member as a consequence of participation. Ideally, these characteristics would be positive ones, such as the building of character, discipline, preparation for competition in life, the facilitation of moral development and good citizenship, and the cultivation of desirable personality traits. The goal would also be for these characteristics to be transferable beyond the sport to other contexts in life (Leonard II, 1980).

Socialization Into Sport

Socialization into sport could be explained by the social learning paradigm, in which sport initiation comes about through the influences of personal attributes, significant others, and favorable socializing situations (Kenyon & McPherson, 1973), and likely involves the imitation of role models and the receiving of reinforcement from social agents (Yang, Telama, & Leskinen, 1998). Traditionally, in the United States, socialization into sport begins through school. One study found teachers and coaches to be the primary socialization agent, followed by same sex peers (Smith, 1978). More recently, Figler and Whitaker (1995) reasoned that peers are the most powerful social agent. Mass media, including television, have also been cited as having significant impact on socialization into sport, in part because it is through media that people are exposed to sport heroes (Leonard II, 1980; Vogler & Schwartz, 1993; Zeijl, te Poel, du Bois-Reymond, Ravesloot, & Meulman, 2000). Other significant agents traditionally include family and community (Claeys, 1985; Leonard II, 1980; Smith, 1978). Socialization into sport in adulthood usually begins with family, including a significant other (Kelly & Freysinger, 2000; Kenyon & McPherson).

For people with disabilities, the socialization into sport process is different. Schools and teachers are not significant socializing agents in this population. For this group, sport is generally introduced through peers with a disability, coaches of community-based organizations, family, and rehabilitation therapists (Hedrick, 1979; Williams, 1994; Wu & Williams, 2001). Levins et al. (2004) found that for those with

disabilities the transition into activities, and back into life in a wheelchair, was greatly influenced by an "insider," someone with experience. Witnessing others with disabilities compete was believed to have influenced participants to get involved. Peer athlete mentors are an important source of sport and physical activity information, and inspiration, for people with physical disabilities (Perrier et al., 2015).

Socialization of children without disabilities into sport. Children first learn to play, then are socialized into sport, though specialization is not likely to occur until they are more mature (Kenyon & McPherson, 1973; Snyder & Spreitzer, 1978). Children self-socialize themselves into play (Mannel & Kleiber, 1997) with sport involvement developing as the child decides the sport situation has positive outcomes (Greendorfer, 1988), which may originate through reinforcement (Vogler & Schwartz, 1993) from coaches, parents, siblings, and peers. For a child, the sport they are socialized into is often determined by their family, gender, socioeconomic status (sport one can afford), neighborhood (geographical location and weather conducive to the sport and the sport's popularity in region), physical condition of a parent (active parents tend to play more), and parental involvement (coaching, instructing) (Vogler & Schwartz, 1993).

Individuals tend to be socialized into sport differently based on their gender. Boys are generally allowed to play more aggressively than girls. Girls are usually socialized into a variety of leisure activities (music, art, dance) while boys are more likely to be socialized into team sports (Busser, Hyams, & Carruthers, 1996). These socialization practices may lead to the lack of exposure to motor and physical activities

for young females, facilitating a self-selection away from vigorous physical activities later in life (Greendorfer, Lewko, & Rosengren, 1996). Female athletes are often in conflict with their expected role in society and their personal identification with gender (Miller & Levy, 1996), often battling between femininity and social stigma. Significantly more female athletes report athletic participation by their parents than female non-athletes (Miller & Levy, 1996). Thus, these female athletes tend to have parents who are athletic and serve as role models, providing encouragement and reinforcement that serves to develop and enhance their body image, competence as athletes, and overall participation (Miller & Levy, 1996).

Personal attributes related to adaptive sport socialization. Socialization into adaptive sport differs from the socialization into sport experience by people without disabilities. As no two disabilities are the same, no two socializing experiences will be identical. The socialization experience into sport may be influenced by a host of different personal attributes, most notably gender, age of introduction to sport, type of disability, severity of disability, age of disability onset, disability onset, and racial or ethnic minority status.

Gender. Females with disabilities are more likely to experience discrimination than males, especially in Paralympic sport, where women with severe disabilities are underrepresented in comparison to their male peers (Sherrill, 1997). Grimes and French (1987) reported this double discrimination (sex discrimination as well as disability) is due to several factors and includes decreased strength relative to males with the same

impairments. Due to this increased level of prejudice and discrimination, females with disabilities are likely to experience a different sport socialization process compared to their male counterparts. Female athletes with disabilities report that their mothers were their primary socializing agents into sport (Dickinson & Perkins, 1985). Gender roles may also serve as a barrier to sport participation in athletes with disabilities that have greater impairments, such as those with high-level spinal cord injuries (Skucas, 2013). This may be due to societal barriers and physical challenges related to generalized diminished upper body strength in females compared to males.

Age of introduction. Watanabe, Cooper, Vosse, Baldini, and Robertson (1992) indicated that participation in wheelchair sports often begins in adulthood, suggesting that the socialization of these athletes into sport is very different than able-bodied children into similar sports. Likewise, wheelchair road racing has been predominantly an adult phenomenon, with the mean age of introduction into the sport being 21 years (Hedrick et al., 1988). This is counter to the general socialization into sport age for most other sports in the United States. Commonly, able-bodied children are introduced to a sport at a much earlier age through their schools and through club sport programs, in which they can learn and develop sport-specific skills and knowledge at a much earlier age. Maffulli (1998) reported that children start competing in sport as early as six years of age and are regularly training intensely 18 hours per week at the age of 14. Upon “graduating” from these youth programs, some are able to continue their participation and training with college teams, including interscholastic, intermural, and club programs. The

interscholastic teams often help offset the cost of attendance at the school, in addition to financially supporting the training and travel.

Historically, there have been very limited opportunities for athletes with disabilities at the collegiate level. The most common programs have centered on wheelchair basketball programs that compete annually for the National Championship through the National Intercollegiate Wheelchair Basketball Tournament founded by Nugent (Brown, 2008). The longest running and most successful collegiate track program has been the one at the University of Illinois. As mentioned earlier, this program was named the United States' Paralympic Wheelchair Track training facility and received financial support from the United States Olympic Committee (USOC) and corporate sponsors, such as BP (formerly British Petroleum) (Bourgeois, 2014).

Currently, the National Collegiate Athletic Association (NCAA) does not sponsor championships for adaptive sport. However, in 2015, the NCAA's largest conference, the Eastern Collegiate Athletic Conference (ECAC), announced the addition of wheelchair basketball, sledge hockey, sitting volleyball, and goalball (team sport for persons with visual impairments) as varsity sports (ESPN, 2015; International Paralympic Committee, 2015b). The addition would not only allow young adult student-athletes with disabilities the opportunity to socialize into adaptive sport, but also compete at the intercollegiate level and vie for conference championships (Hums et al., 2016). It would undoubtedly also allow for improved levels of participation and the receipt of skilled coaching for those wishing to participate in competitive sport upon moving on from their

youth/club programs. It would also create a greater number of opportunities, giving college-aged students options in which to pursue higher education while still competing at a high level. Unfortunately, as of the 2016-2017 academic year, no teams have fielded programs or offered scholarships (Eastern College Athletic Conference, 2016).

Type of disability. As each individual, their disability, and their situation, in general, can be very unique, their socialization process into sport can also be quite unique (DePauw & Gavron, 2005; Hedrick & Broadbent, 1996; Williams, 1994). For example, the sport socializing agents for athletes with visual impairments are different from athletes with cerebral palsy (Lugo, Sherrill, & Pizarro, 1992; Sherrill, 1986). Wu and Williams (2001) found that physical therapists were significant introductory agents for those with SCI into sport. In contrast, Longmuir and Bar-Or (2000) reported that physical therapists did not often encourage children with cerebral palsy to participate in wheelchair sports for fear of decreased ambulation in their daily lives. Other introductory agents that may be linked to the type of disability include voluntary health organizations such as the United Cerebral Palsy Association and the United States Association for Blind Athletes. Persons with amputations may find socialization opportunities through their visits to their prosthetist, by interacting with other patients or through materials in the waiting room.

Disability severity. Within Paralympic track and field, athletes are grouped into events based on a classification system. The purpose of this classification system is to place participants with similar functional abilities into the same class in an attempt to

make competition a reflection of skill, innate athletic ability, and training, not a reflection of the effects of the medical diagnosis or the severity of the disability. As such, the severity of disability should not be a predictor of elite status within Paralympic sport, and previous research supports this conclusion (Brasile & Hedrick, 1996; Hedrick et al., 1988). While these Paralympic studies examined skill level and status within the sport at an elite level, socialization into sport is likely to be affected by the level of severity.

There is a direct relationship between disability severity and inactivity; those with the most severe disabilities are the least active (Hedrick & Broadbent, 1996). This phenomenon is likely a construct of societal barriers. For example, Sherrill (1986) reported that students with cerebral palsy who are ambulatory, have physical education in school, while almost half of students who used a wheelchair did not. This discrepancy is not isolated to the school system. Parents and caregivers are also less likely to introduce a child with a severe disability (e.g., non-ambulatory child with cerebral palsy) to sport than a child with a less severe disability (e.g., a limb loss sustained in a car accident) (Sherrill & Williams, 1996).

Age of disability onset. The research regarding sport socialization and the age of disability onset is conflicting with some reports noting time of onset being significant (Hedrick, 1979) and others noting that it is not (Hopper, 1982). Children with congenital or early onset disabilities may not have the traditional interactions, such as physical education and extracurricular sport activities through the school system, and therefore lack socialization into sport (Hedrick, 1979). Teachers and coaches in the schools often

fail to serve as socializing agents for children with disabilities because they have not been educated about medical conditions or the abilities of those who have them, and as such, are more likely to limit these students' participation based on misconceptions (Downs & Williams, 1994). Pensgaard and Sorensen (2002) reported that acquiring a disability later in life might allow for socialization to sport with greater motor and psychosocial development pre-disability. This advantage then facilitates socialization into adaptive sport.

Disability onset. Onset of disability (congenital versus acquired) can be a complicating factor in determining socialization into sport (Sherrill & Williams, 1996; Williams, 1994). Differences in the socialization between congenital and acquired orthopedic disabilities have been previously described (Zoerink, 1992). For athletes with congenital disabilities, the primary socializing agents are usually physical therapists, family, and current athletes with disabilities. Athletes with acquired disabilities most often listed themselves as a socialization agent, followed by current athletes with a disability, and then therapeutic recreation and physical therapists (Zoerink, 1992). However, for athletes with a visual impairment, the onset of disability (congenital versus acquired) does not appear to impact the socializing agents, with the person's mother being the most influential agent (Tepfer, 2004).

For people with an acquired disability later in life, resocialization, rather than socialization into sport is likely (Bryant & McElroy, 1997; Kenyon & McPherson, 1973). Sport resocialization occurs in three ways: sport-to-sport (one sport to another), sport to

non-sport, or role-to-role (changing roles within the same sport). Sport to sport resocialization might include a transition from a team sport such as high school football to an individual sport such as track following an accident. A sport to a non-sport resocialization might include a transition from a sport to an artistic or recreational endeavor such as dance. Socialization into a different sporting role could result in more difficulties than socialization into the initial role because of the social and psychological adjustments. Figler and Whitaker (1995) stated, "We must be socialized into our various roles, we may also need to be socialized out of them when we can no longer practice these roles. To be resocialized means learning that not doing it is acceptable and carries its own rewards" (pp. 52-53). Within Paralympic sport, this resocialization process is likely to occur within the wounded military populations and with athletes that had their traditional, able-bodied sport careers cut short due to a catastrophic injury (e.g., car accident) or illness (e.g., osteosarcoma).

Disability severity and onset. The conflict in the research regarding the socialization into sport based on disability severity and onset may be related to an interaction of the two. If a person acquires a severe disability later in life, they are more likely to be involved in higher levels of sport if they had social encounters early in their life that were more "normal," such as able-bodied school physical education, compared to someone with a severe congenital disability (Hedrick, 1979). The early social encounters, where a person's ability to function physically at a high level, likely led to differential treatment from teachers, peers, and family compared to a student with a

congenital disability (Hedrick, 1979). These encounters likely stimulate interest in participation after acquiring a disability due to the person already have a sporting identity in which they can merge this past participation with their new identity (Sherrill & Williams, 1996).

Racial and/or Ethnic Minority. The socialization experience into sport may be influenced by personal attributes such as race, ethnicity, or both. Research regarding minorities and disability is limited (Boyd, Lemanowicz, & Feinstein, 1997; Bryant & McElroy, 1997; DePauw & Gavron, 2005; Henderson & Bedini, 1995). Two proposed reasons for this limitation include (a) minority groups are already facing issues of discrimination and racism, and the research focus is on these issues and not on issues related to minorities with disabilities; and (b) the disability research focus has not led to issues specific to minorities with disabilities (Boyd et al., 1997).

Socialization Via Sport

As discussed previously in this chapter, sport socialization involves both the socialization into sport, or how participants become involved initially, and socialization via sport, or how a person begins to adopt the traits, skills, and values associated with a sport culture. In this section, a review of how an athlete is socialized through participation in track and field specifically, and subsequently empowered through sport participation in general, is discussed. Socialization through sport includes the development of a sense of community and issues surrounding body image.

Paralympic track and field socialization. In attempting to assess the training behaviors and attitudes of elite wheelchair road racers, Hedrick et al. (1988) briefly touched on the manner in which elite wheelchair racers in the United States acquire information about their sport, and are thus socialized through it. They observed that most gains are made through peer-to-peer interactions, often times at competitions due to the geographical dispersion of the racers. Williams and Taylor (1994) reported that peers are the primary socializing agent in wheelchair road racing in the United Kingdom. Other socializing agents within the sport included *Sports 'n Spokes* (reportedly the premier magazine for wheelchair sports and recreation), cycling magazines, scientific journals, coaches, physical therapists, coaching manuals, and running magazines. Williams and Taylor observed differences in how non-elite and elite racers socialized with each other, specifically that non-elites primarily shared their problems (e.g., emotional experiences) while elites primarily socialized by providing solutions (e.g., exchanging advanced knowledge). Non-elites also tended to be more geographically and socially isolated from other racers, while elites tended to have greater social access if not geographical access (Williams & Taylor, 1994).

While studies examining the socialization of Paralympic athletes via their sport usually examine socialization within the context of athletes with disabilities, Patrick and Bignall (1984) also examined the integration of wheelchair road racers with able-bodied athletes. For wheelchair marathoners, racing affords access to a social world of shared meaning and goals with able-bodied athletes and serves as a vehicle for integration not

seen in segregated wheelchair sports (Patrick & Bignall, 1984). This integration and shared meaning serves to develop feelings of freedom and competence, contributing to independence and self-actualization.

Empowerment through Paralympic sport. Researchers have acknowledged a "disability ghetto" characterized by "poverty, unemployment, and lack of socialization" (Page, O'Connor, & Peterson, 2001), but sport is increasingly being recognized as "the most accessible vehicle for moving beyond disability dependency and leaving the disability ghetto" (Wyeth, 1989). The use of sport as a tool for managing the stigma associated with a disabled body and as a tool for empowerment, in general, has been investigated by others (Ashton-Shaeffer, Gibson, Holt, & Williming, 2001b; Taub, Blinde, & Greer, 1999). When studying empowerment in a variety of populations, including within female and disabled groups, researchers often employ a feminist theoretical framework. This framework is believed to draw attention to the pervasiveness of gender divisions in social life and to recognize the relatedness of gender to other forms of domination (e.g., disability, race, age), and has the potential to critique and transform prevailing social conditions (Hall, 1995). Foucault (1979) postulated, "where there is power, there is resistance" (p. 95) and that because power is invested in everyday practices at the micro level, it is possible through a "process of localized struggles" to resist subjectification (Foucault, 1980). Foucault (1988) suggested that individuals could transform themselves "in order to attain a certain state of happiness, purity, wisdom, perfection or immortality" (p. 18). While the influence of social structures is recognized,

individuals have some power to negotiate and resist these forces, and are thus regarded as active rather than passive individuals (Green, 1988), with the power to resist oppressive cultural forces (Wearing, 1994). Thus, sport could provide a space where participants have the power to deconstruct, negotiate, and resist power structures in society (Green, 1988; Wearing, 1994).

It has been suggested that a feminist model of sport is achieved when the aim is not to dominate through competition, but to challenge each other in a supportive environment, building a sense of community (Theberge, 1987) through not only shared sport experiences but also shared disability experiences. Sport activities provide the opportunity for participants to experience their bodies as strong and powerful (Theberge, 1985), and empowered (Ashton-Shaeffer, Gibson, Autry, & Hanson, 2001a). There are different avenues through which sport might enable resistance for those with disabilities, and they include resistance of disability to regain control of their body and resistance to society's perception of the disabled as weak (Ashton-Shaeffer et al., 2001a). By resisting the traditional power structure that oppresses those with disabilities, those who participate in elite adaptive sport may feel empowered. This sense of empowerment may come from their identity as an elite athlete, friendships, travel, overall health and fitness level, purpose in life, and other intrinsic factors. The athletes may also feel empowered because of their ability to support and empower others to resist stereotypes through their influence on, and inspiration of, others with disabilities (Ashton-Shaeffer, Gibson, Holt, Williming, 2001b).

Part of the sense of empowerment within Paralympic sport comes to some in the form of athlete leadership. These leadership roles can be formal (e.g., voted team captain) or informal (e.g., seniority with the team and ability to relate well with others) and are centered on these individuals' ability to influence team members, ideally to the attainment of a common goal (Caron et al., 2016). In a qualitative study examining Paralympic athlete leaders' perceptions of their roles as leaders and team cohesion, the authors reported that the athletes see their role involving "motivating, supporting, and communicating with their teammates and coaches" (Caron et al., 2016). The athlete leaders also saw the importance of their role in "encouraging and supporting teammates' drive to live independently" (Caron et al., 2016). The athletes believed this role included giving teammates strategies to overcome daily barriers associated with living with a disability. To be positioned to perform these roles, the athletes discussed the importance of leading with a democratic style, developing close personal relationships, and regular communication with teammates and coaches. The athletes also reported that due to the geographical dispersion of teammates they often used technology, such as email and social networking tools to remain in contact. Others have reported the use of such tools for able-bodied athletes during off-season training (Lampe & Ellison, 2010) and by individuals with disabilities (Braithwaite, Waldron, & Finn, 1999).

As discussed previously, athlete leaders often assume the role of assisting with building team cohesion (Caron et al., 2016). Some athlete and team leaders felt their group's dynamic was strengthened because of the diversity of teammates' disabilities,

while others felt that the diversity in disabilities presented a challenge, often related to accessibility factors. However, all of the leaders felt that social gatherings built teammate relationships that fostered deep personal bonds. This is not surprising given that social opportunities are often cited as a key motivator for sport participation among adaptive athletes (Wu & Williams, 2001).

Not only do athlete leaders work to encourage and support independence for their teammates, adaptive sport coaches work with this end in mind as well (Cregan et al., 2007; Falcão, Bloom, & Loughead, 2015; Tawse, Bloom, Sabiston, & Reid, 2012). For professionals, including coaches and healthcare providers, empowerment should be considered synonymous with self-actualization (Sherrill & Williams, 1996). Therefore, specific strategies based on self-determination theory can be implemented by professionals assisting adaptive sport athletes to aid in empowering the athletes. Self-determination theory emphasizes the role of the environment (e.g., healthcare provider, coach, teammates) in encouraging athletes' perceptions of self-determined autonomy, relatedness, and competence (Ryan & Deci, 2000). Examples of strategies include discussing the purpose and benefits on one strategy over another and allowing the athlete to have the autonomy to choose which approach they will use. A specific example in the ambulatory discus throw event would be allowing the athlete to choose to stand and throw versus spin and throw. Likewise, participating in a welcoming sport environment enhances the sense of relatedness. The perception of competence can be facilitated

through the participation in developmental sport activities that allow for success initially with progressively more difficult tasks being required over time.

Community. In a study of the meaning of participation in elite wheelchair basketball for women with physical disabilities, a sense of community existed that was based on shared experiences, including travel, but perhaps more importantly on shared experiences with disability (Ashton-Shaeffer, Gibson, Holt, & Williming, 2001b). They "saw sport as a supportive community rather than an aggressive environment in spite of the elite, world-class level of play" (Ashton-Shaeffer et al., 2001b). Both Carless et al. (2013) and Verschuren et al. (2012) cited fun and shared experiences of humor related to aspects of disability as one facilitator to, and motivator of, participation. This sense of community, built upon shared experiences, assists participants in developing a sense of physical and emotional empowerment that extends beyond the boundaries of sport and into participants' personal and professional lives (Ashton-Shaeffer et al., 2001b).

Body image. Drench (1994) described body image as the part of one's self-concept that involves attitudes and experiences relating to the body, including "notions about masculinity and femininity, physical prowess, endurance, and capabilities" (p. 31). Influenced by several factors, body image is a concept that encompasses bodily perceptions (e.g., accurate self-judgements about one's body), attitudes (e.g., perception of the importance of body appearance), affect (e.g., likes and dislikes about one's body), and behaviors (e.g., actions taken to alter appearance) (Galli, Reel, Henderson, & Detling, 2016). Societal values that emphasize vitality and physical fitness can result in

body-image disturbances, especially in disabled populations since the disability may be seen as a sign of failure (Novotny, 1986). Body image disturbances have been linked to obesity, eating disorders, and depression in individuals with disabilities (Rybarczyk, Nyenhuis, Nicholas, Cash, & Kaiser, 1995; Stice & Shaw, 2002). Studies have examined body image related to physical disability and demonstrated the positive influence of physical activity on the body image of those with disabilities, including those with amputations (Tyc, 1992; Wetterhahn et al., 2002), visual impairments (Greguol, Gobbi, & Carraro, 2014), SCI and cerebral palsy (Stensman, 1989), and those who are of short stature (Skuse, 1987).

Related to body image, sexual identity, or one's awareness of one's own sexual characteristics, contributes to a person's overall psychological well-being and life satisfaction, and both are particularly important for women with physical disabilities. Women with physical disabilities have greater difficulty forming and maintaining intimate partner relationships (Moin, Duvdevany, & Mazor, 2009). The literature suggests that it is not the disability itself that limits the relationships but the contextual, social, physical, and emotional aspects that influence a woman's self-esteem, and then the successful formation and maintenance of these relationships (Craig, Hancock, & Chang, 1994). Moin et al. (2009) reported that women with physical disabilities had the same sexual needs and desires as women without disabilities, but their body image, sexual self-esteem, sexual satisfaction, and life satisfaction were significantly lower. These authors found that the "social isolation and stigma of the non-sexuality of women

with disabilities damage the women's self-perception as a sexual partner and attractive person" (p. 92). These results were more pronounced in younger women and can likely be explained by the fact that body image and sexual identity are more important in the lives of young women than more mature women. However, Moin et al. (2009) also reported that lower satisfaction was avoidable, as there were certain mitigating circumstances.

One such mitigating circumstance is sport. In a qualitative study examining body image in athletes with physical disabilities, Galli et al. (2016) reported that sport was a "socialization vehicle" that served to connect people with similar impairments and enabled participants to learn about their capabilities and to improve their self-esteem. In a sport setting, the focus can shift from appearance to function. One sitting volleyball participant stated that she feels "comfortable in the body that I have, because I am so powerful" (Galli et al., 2016, p. 9). The ability for some adaptive athletes to train with able-bodied athletes allowed one athlete to "feel accepted and welcomed and a part of the scenario" (p. 10). These authors also reported that the athletes compared their bodies to the others as a gauge of appearance and function, with both upward and downward comparisons. To downwardly compare, they might turn to another with greater physical impairments. To upwardly compare, they wish to emulate another athlete (disabled or able-bodied), media images, or their pre-injury self, and this comparison often serves as a source of motivation. Both men and women reported the external pressure to look a certain way and would self-critique body regions they did not like, but there were also

points of pride related to the years of training and competing that resulted in the development of a sense of appreciation for their bodies' appearance and function. One mono-skier said, "I seriously love my leg so much. I feel proud of how it feels like an ox!" (p. 12). Most athletes with prosthetic limbs also had a deep appreciation for their prosthetics. One female athlete said, "I don't wear a cover over my prosthetic, I think it looks cool the way it is. So…I am who I am" (Galli et al., 2016, p. 12).

For the elite female athlete, adaptive sport participation provides the opportunity for the participant to develop a strong athletic identity through the mastering of sport related skills, moving away from having the self-image of a "disabled" body (Ashton-Shaeffer, Gibson, Holt, & Williming, 2001b; Sands, 2000). Self-perceptions can be influenced by physical actions and feedback provided through elite sport (such as sponsorship and travel opportunities) that will likely shape future behavior (Groff & Kleiber, 2001). For these athletes, the mastering of such skills likely leads to a "re-embodiment" or the construction of a new identity and body image (Standal, 2011).

Unfortunately, increasing media exposure of adaptive athletes may serve to diminish the improvements in body image seen with participating in sport. Contrary to able-bodied female athletes, female athletes with a disability are often portrayed by the media as asexual, which may be more damaging to the female athlete with an impairment (Schell & Rodriguez, 2001).

Similarly, males who experience catastrophic injuries, especially those with violently acquired SCI go through a period of redefining their identities and their role in

society. This process is likely influenced by the various identities and roles that the individual may hold, including gender (masculinity), disability (ability to defend self and provide for a family), race, and the interaction of these with socioeconomic status. In a qualitative study, authors observed that the minority men injured in inner city gang violence struggled to redefine their sense of masculinity with the participants noting a loss of independence, a negative change in body image, an inability to engage in traditional sexual relations, and a feeling of vulnerability (Ostrander, 2008). The story of one former gang member, who sustained a violently acquired SCI, is detailed in his autobiography with sociologist Ronald Berger (Juette & Berger, 2008). Juette detailed how the shooting that paralyzed him was "both the worst and best thing that happened" to him (p. 149). Following the incident, the former gang member became involved in wheelchair basketball, and as it became his passion, he used wheelchair basketball to help earn a college education and to represent his country in the Paralympic Games.

When discussing body image, media portrayal of the disabled body is an important consideration. Howe (2008) illustrated the media coverage of the premier women's wheelchair racing event at the 2000 Sydney Paralympic games, and the eventual winner, Canadian Chantel Petitclerc. Howe reported that Chantel, the surprise winner, was an "acceptable face of sport for the disabled – photogenic, charismatic, high functioning, and a winner" (p. 513). Howe (2008) observed that while Petitclerc was one of the best within her classification, others who were great champions on the World Championship and Paralympic stage did not receive the same degree of attention, noting

the lack of equity of treatment of champions. This is likely due in part to cultural interpretations of beauty and, as in other areas of our culture, it is the fair of face and chiseled bodies that tend to get the most attention.

There is a belief, and some evidence to indicate, that certain Paralympic athletes are marginalized because they do not produce the elite, aesthetically pleasing performances desired by audiences (Purdue & Howe, 2013). Howe (2008) noted that an increase in the severity of the impairment is linked to the marginality felt by individuals within the sport, indicating that greater impairment equates to lesser acceptance for a disabled athlete. This marginalization is likely the byproduct of the attempt to garner greater media attention and thus commercial success for the Paralympic Games. The typical viewer finds it easier to understand the performances of the less impaired Paralympians and compare their results to Olympic and professional athletes (Purdue & Howe, 2013). For athletes with more severe impairments and thus higher support needs (e.g., on-field attendant in a throwing event), their performances may be deemed inferior and their successes perceived as less valuable (Purdue & Howe, 2013). This hierarchy within the Paralympic movement is not isolated to external sources such as the media, but existed internally, with the athletes themselves (Mastro, Burton, Rosendahl, & Sherrill, 1996).

However, this marginalization runs contrary to the stated vision and mission goals of the IPC and likely has a negative psychosocial and financial impact on those marginalized. Similar to concerns seen in the sexualization of traditional female athletes,

corporeal attributes, rather than sporting ones, often become the focus of attention. This focus on aesthetically pleasing bodies and performances is a barrier to gaining media attention, and thus commercial success and sponsorship for athletes who possess severe impairments (Purdue & Howe, 2013). The attitudes contributing to this marginalization are not limited to those outside of disability sport. Mastro et al. (1996) demonstrated a hierarchy of preference by elite athletes with impairments toward other elite athletes with impairments that resembles the hierarchy found in the able-bodied population. The hierarchy from most to least favored attitudes was for those with amputations, *les autres*, para- or quadriplegia, cerebral palsy, and visual impairments. Mastro et al.'s study supports other studies that observed difficulties in the integration of different disability groups in Paralympic sport, such as Paralympic Track and Field (Sherrill, Paciorek, Davis, & Rich, 1993). These findings are important to consider as more former athletes become increasingly involved in administrative roles within the movement to ensure a diversity of representation for all classifications.

Implications for Healthcare Providers

In the previous section, how a person with a disability becomes socialized into sport and socialized via sport was examined. One potential socializing agent is a patient or team's medical staff. Patients in one study reported a need for greater awareness among rehabilitation professionals of non-traditional rehabilitation activities, such as sport and recreational activities (Taylor & McGruder, 1996). This finding suggests a lack of understanding of the positive physical and psychosocial health benefits of sporting

activities for patients with an impairment. Unfortunately, medical providers may not only lack awareness, but also depreciate the person's abilities. Levins et al. (2004) examined facilitators and barriers to sport participation for those with a SCI, and one participant included her physical therapist as someone who presented a barrier due to this healthcare provider's underestimation of her abilities and low expectations.

The rehabilitation environment plays a role in helping people with disabilities to overcome fears and anxieties about physical activity and sport (Deans, Burns, McGarry, Murrary, & Mutrie, 2012). This role may be executed within formal rehabilitation environments, or in partnership with others in the community, including recreational therapists and local adaptive sport program staff (Verschuren, Wiart, Hermans, & Ketelaar, 2012). However, rehabilitation providers often focus only on the necessary techniques of mobility training and activities of daily living without considering the long-term, broader health needs, including healthy aging with a physical disability (Carpenter, 1994). Thus, providers fail to consider the whole person, or take a holistic approach to treatment. Given the reports provided by participants in Levins and associates' (2004) study, it may be important for rehabilitation professionals to re-examine their own attitudes regarding the abilities and potential of those with disabilities before they can have a more positive influence on their patients' rehabilitation and long-term outcomes.

Attitudes are learned dispositions that direct feelings, thoughts, and actions (Byron & Dieppe, 2000; Carter & Markham, 2001; Peat, 1997). A positive attitude towards people with disabilities may result in healthcare providers believing that those

with impairments can be productive community members, decide what is in their own self-interest, and lead a normal life. These beliefs may lead to behaviors such as implementing conditions to help an individual actualize their ability towards a self-sufficient life and advocating for policy and societal changes that would benefit those with impairments (Tervo, Palmer, & Redinius, 2004). Inappropriate staff attitudes and behaviors have been identified as the greatest barrier to accessing health services by people with disabilities (Byron & Dieppe, 2000; Carter & Markham, 2001). Specifically, the attitudes of health professionals toward people with impairments are significant factors in rehabilitation and reintegration (Chubon, 1982; Peat, 1997). Healthcare providers with negative attitudes that lead to or support negative expectations limit successful rehabilitation (Chubon, 1982; Paris, 1993). Negative attitudes are a product of individual beliefs and societal and organizational practices (Paris, 1993) that can affect the quality and range of rehabilitation services offered (Estes, Deyer, Hansen, & Russell, 1991).

Health profession students appear to hold less positive attitudes towards people with disabilities than survey norms in other populations (Tervo, Azuma, Palmer, & Redinius, 2002; Tervo et al., 2004). These negative attitudes differ among the disciplines. Tervo et al. (2004) reported that nursing students had the least positive attitudes, followed by medical students, then the allied health profession (occupational, physical, and speech therapy) students. Of allied health professional students, occupational students tended to hold more positive attitudes than physical therapy

students (Stachura & Garven, 2003). While negative attitudes tend to improve throughout professional educational programs, these improvements require specific educational experiences (Stachura & Garven, 2003; Tervo et al., 2002; Tervo et al., 2004). It is also likely that many licensed practitioners continue to have negative attitudes and display behaviors inconsistent with the nature of their professions' missions and values that could have a profound negative impact on those in their care.

On the other end of the spectrum, due to the caring nature often displayed by rehabilitation professionals, there may be a wish to offer help to those with impairments in a manner that is too passive and care-centered, which does not allow the person to recognize and achieve their own abilities and competence. These practitioners may not push individuals to the point that they realize their own capabilities, learn self-sufficiency, or ultimately their maximum potential in everyday activities or sport (Purdue & Howe, 2013). Contributing to this problem is the lack of sport science evidence in disability sport to guide practitioners in pushing an individual with an impairment to maximize their potential (Purdue & Howe, 2013). Sherrill and Williams (1996) stated that the role of professionals is "to empower individuals with disabilities to become increasingly self-directed, assertive and active in sport decision making and participation" (p. 44).

One function of physical and occupational therapists is to enable patients' participation in activities that they report high levels of interest yet have low levels of satisfaction. One way to assist patients with a disability in pursuing valued and

personally meaningful activities is to inform them of the resources available to them. This function of rehabilitation professionals is based on the International Classification of Functioning, Disability, and Health (ICF) model (World Health Organization, 2018). Some physical therapists have discussed the importance of their role in facilitating community reintegration of patients as part of a multi-disciplinary team, often including sport and leisure activities. This role seems to hold especially true within the military (Wojciechowski, 2014). Unfortunately, there is a perception among those with disabilities that rehabilitation professionals need greater awareness of non-traditional rehabilitation activities (Taylor & McGruder, 1996).

Besides educating patients on potential sporting opportunities, healthcare professionals could have a role in educating coaches as well. A longstanding lack of knowledgeable coaches in disability sport has also been discussed in the literature, along with the need for coaching development that includes more disability sport-specific material in formal coach education courses, clinics, and seminars (Cregan et al., 2007; DePauw & Gavron, 2005; DePauw & Gavron, 1991; Liow & Hopkins, 1996; Robbins, Houston, & Dummer, 2010; Sawicki, 2008; Sherrill & Williams, 1996). The lack of formal educational opportunities often leaves coaches turning to informal opportunities for learning, such as consulting coaching peers and greater communication with their athletes regarding disability-specific information (Cregan et al.; McMaster et al., 2012). These informal opportunities for learning help mitigate the lack of formal opportunities. Fairhurst, Bloom, and Harvey (2016) suggested that coaches would benefit from

mentorship from healthcare providers such as physical therapists, occupational therapists, and neuropsychologists. These healthcare professionals could help coaches learn information and skills directly related to the medical diagnosis, functional impairments, co-morbidities and their implications, potential modifications, injury prevention, acute injury and illness management, and transfer skills (Fairhurst et al., 2016). Given their level of knowledge and expertise in these areas, therapists have the potential to make excellent adaptive sport coaches, especially if they have a participatory history in traditional sport.

Epidemiology and Injury Prevention

Building awareness of sport opportunities in patient populations is likely the first step for involvement, followed by collaboration with coaches. In addition, many adaptive sport groups are in need of health professionals to assist their efforts. One such avenue for assistance is in the form of injury tracking and prevention. Understanding a sport, including the biomechanical and physiological aspects of it, could assist in the development of prevention programs. Building upon previous literature regarding an adaptive sport's injury and illness epidemiology is essential to preventing future incidences.

A prime example of the use of epidemiological evidence for injury prevention within Paralympic sport occurred following the 2002 Salt Lake Paralympic Winter Games. Researchers found a high incidence of lower extremity injuries, including fractures, related to collisions with an opponent's sled (Webborn, Willick, & Reeser,

2006). Due to these findings, rule changes related to sled configuration greatly reduced the number of injuries upon implementation (Willick, 2015). Similar studies have led practitioners to other revelations. Historically, it was believed that Paralympic track and field athletes sustained a high incidence of shoulder injuries. Evidence now seems to indicate that wheelchair racing may serve as a protective activity of the shoulder while seated throwing, like other overhead sports, may result in a greater incidence of shoulder injuries (Blauwet et al., 2016). At the 2012 London Paralympic Summer Games, Blauwet and associates found that amputees who participated in ambulatory events had the highest injury incidence, but another study suggests this high injury rate might be associated with non-sport factors in the Games setting. For example, due to the Paralympic Village environment, an athlete with a low extremity amputation walked on average 83% more steps per day than he or she did at home (Burkett, 2010). This higher step count may contribute to the higher incidence of injuries seen in this population. These findings now allow therapists and coaches to better educate athletes, allocate resources, and implement specific strategies for injury prevention and management.

There are many examples of epidemiological findings regarding risk factors that may inform injury prevention measures. For the athletes with cerebral palsy, a high incidence of knee and soft tissue injuries may be associated with concomitant orthopedic deformities (Horstmann, Hosalkar, & Keenan, 2009) and limited range of motion, spasticity, and discoordination (Athanasopoulos et al., 2009; Patatoukas et al., 2011). For the athletes with visual impairment, a high incidence of lower extremity injuries,

especially ankle injuries, might be attributed to poor proprioception since postural stability is affected by vision (Aydog, Aydog, Cakci, & Doral, 2006). Athletes with lower extremity amputations have a higher incidence of injury and pain (Athanasopoulos et al., 2009; Bernardi et al., 2003; Nyland, Snouse, Anderson, Kelly, & Sterling, 2000), and it might be related to altered biomechanics in the lower extremity (Bernardi et al., 2003; Nyland et al., 2000). For athletes that use a day wheelchair, the high incidence of upper extremity injury (Burnham, Newell, & Steadward, 1991; Derman et al., 2013) may be attributed to wheelchair propulsion (Fagher & Lexell, 2014), with overuse being the most common cause. Poor seated posture, smaller upper extremity musculature, denervated musculature, flaccidity, muscle spasms, and spasticity (McCormack, Reid, Steadward, & Syrotuik, 1991) could be contributing intrinsic factors. Healthcare providers have the knowledge and experience to assist athletes and adaptive sport coaches with all of these issues.

Ethical and Legal Issues

In Paralympic and adaptive sport, a sport-related injury could have a drastic impact on an athlete's ability to carry out activities of daily living and could have deleterious long-term consequences. Within sports medicine, the team medical staff often has to decide, along with the athlete, whether the athlete will compete with a "minor" injury and often has to decide between treatments that allow for a quick return to sport versus better long-term outcomes (Blauwet, Greenfield, Ham, Spill, & Mukherjee, 2015). It is the responsibility of the medical staff to fully examine the athlete and discuss

with the athlete the risks and benefits of continued participation. Associated risks with sport participation are inherent. However, the medical staff must acknowledge the autonomy of the athlete despite the ethical role of protecting patient health. This role has to be balanced so that medical staff can do what is in the best interest of the individual without being paternalistic (Blauwet, Greenfield, et al., 2015). It is also the role of the medical, strength and conditioning, and coaching staffs to implement appropriate injury prevention and training programs to maximize performance without compromising health and safety.

As described in the literature, a sports injury may lead to the athlete losing training time and work or school time, as well as long-term morbidity or mortality (Kjaer et al., 2005; Ljungqvist et al., 2009). The injury could be a burden to society, with the cost of medical treatment, rehabilitation, and reduced work capacity (Kjaer et al., 2005). For the athlete with a disability, an injury could have more serious consequences compared to an able-bodied athlete, including problems with activities of daily living and mobility concerns (Vanlandewijck & Thompson, 2011). In this population, the potential injury risk and the potential for loss of independence must be discussed to allow participants to make well-informed decisions about their participation in an autonomous manner (Blauwet et al., 2015). The athlete with a disability has the right to autonomously direct his or her life choices, including the acceptance of consequences related to those choices, is a critical element of self-actualization, which is tied to autonomy in the self-determination theory (Ryan & Deci, 2000) and the human rights promise.

Doping

Related to the issues of ethics within Paralympic sport is the issue of doping. According to the *Merriam-Webster Dictionary* (Doping, n.d.), doping is the use of a substance (e.g., anabolic steroid, erythropoietin) or technique (e.g., inject oxygenated blood) to illegally improve athletic performance and it is typically banned in competitive sports. In the 1970s, when top able-bodied runners were asked: "If I could give you a pill that would make you an Olympic champion and also kill you in a year, would you take it," over half stated they would take the pill (Mirkin & Hoffman, 1978). In a similar study, repeated several times throughout the 1980s and 1990s, world-class athletes were asked a similar question: "If I had a magic drug that was so fantastic that if you took it once you would win every competition you would enter… but it had one minor drawback, it would kill you five years after you took it, would you still take the drug?" Similar results were found with more than half of respondents stating they would take the drug (Goldman & Klatz, 1992). While the knowledge of doping within Olympic and professional sport has been well documented, including large numbers of Russian athletes being suspended from the 2016 Rio Olympic Games (Ruiz, 2016), widespread doping allegations in Paralympic sport has been limited until recently (Myre, 2016).

Other forms of doping beyond these traditional forms are specific to Paralympic sport. Two doping techniques unique to Paralympic sport are the phenomena of "boosting" and "mechanical doping" (Wade, 2016; Lemire, 2016). Boosting is the intentional induction of autonomic dysreflexia (AD) to enhance athletic performance.

Autonomic dysreflexia is unique to individuals with SCI at T6 or above. The performance benefits are believed to be the greatest, and used the most, in middle to long distance wheelchair racing (Burnham et al., 1994), but it also can cause increased blood pressure, which can be dangerous, most notably the increased potential for stroke. The IPC had considered AD doping and banned its use (Long, Meredith, & Bell, 1997). Recognizing its legal responsibility to ensure that athletes compete in a safe manner at IPC sanctioned events, they later re-classed AD as a health risk and now prohibit athletes from competing in a dysreflexic state, whether intentional or not (Bhambhani et al., 2010).

Mechanical doping is when athletes with bilateral low extremity amputations use prosthetic devices that are longer than their natural limbs would have been. Increased leg length in athletes with bilateral amputations is believed to provide a mechanical advantage over athletes with a single amputation or those who choose to run on prosthetics that more closely match their natural height (Lemire, 2016; Taylor, 2016). While AD has been banned and efforts have been made to eliminate its use, mechanical doping has been permitted by the IPC, at least through the Rio Paralympic Games. Mechanical doping also has implications for classification and event scheduling.

Practical Considerations

For the sports medicine practitioner working with athletes with disabilities, it is imperative that the practitioner not only have a knowledge of sport-related musculoskeletal injuries and neurorehabilitation principles, but also a working knowledge

of the common systemic and general health conditions seen in this population. The healthcare professional needs to know about issues including skin breakdown, autonomic dysreflexia, urinary tract infection, thermoregulatory issues, sequela to early onset osteoporosis, food sensitivities and other allergies, and autoimmune diseases, among others (Blauwet et al., 2015). With this population, healthcare professionals must pay special attention to all of the medications that each athlete takes for his or her medical condition. If a prescribed medication appears on the World Anti-Doping Association (WADA) prohibited list (World Anti-Doping Agency, 2016), then a physician must complete a Therapeutic Use Exemption (TUE) form for doping-control purposes. The astute clinician must also be aware of what effect specific medications may have on the athlete's ability to maximize performance within their chosen sport. Certain medications, such as baclofen and blood thinners, can have a profound negative influence on the athlete's adaptive sport performance, and when providing holistic care to these athletes, the potential performance detriments must be recognized and discussed with the athlete, along with potential alternatives. Ultimately, the athlete needs to have a full understanding of how any medication or medical/rehabilitation procedure may influence their career.

Coaching and Coaching Development

Just as a healthcare provider can be a socializing agent into sport or via sport, coaches can be a socializing agent into sport and through sport. In 1985, the Committee on Sports for the Disabled, a standing subcommittee of the USOC, recommended seven

research areas for disability sport, one of which was the investigation of coaching (Reid & Prupas, 1998). Since that time, there has actually been a decrease in the number of research articles pertaining to adaptive sport coaching (Lee & Porretta, 2013).

Within adaptive sport, it is common to find athletes competing that have no coach or very limited access to coaching. Hedrick et al. (1988) reported that only two of 17 elite wheelchair road racers (11.8%) had a coach, while only 58% of the 319 American adult athletes had coaches during their training for the 1992 Paralympic Games (Ferrara & Buckley, 1996). Due to a lack of coaches, appropriate coach training, and technical resources, peers were the most frequently used resource for information for elite wheelchair road racers (Hedrick et al., 1988). Other athletes, who have coaches, may receive poor coaching since coaches may not have sport science or adapted physical activity education or experience.

Coaching Education and Development

For youth participants of organized sport, the coach may be the most influential adult in a child's life, after their parents (Petitpas, Cornelius, Van Raalte, & Jones, 2005). This influence holds true for youth athletes with disabilities (Farrell, Crocker, McDonough, & Sedgwick, 2004; Shapiro, 2003). Despite the significance of this adult influence, the process by which adaptive sport coaches develop their skill set is not completely known. What is frequently reported in the literature is that coach education programs lack specificity for disability sport (McMaster et al., 2012), forcing interested parties to independently acquire disability-specific knowledge (Cregan et al., 2007). It is

believed that there is a lack of qualified coaches, which negatively affects the performance and the experience of adaptive sport athletes (Dieffenbach & Statler, 2012; McMaster et al., 2012). One solution is to integrate disabled athletes into able-bodied training groups, taking advantage of the quality coaching (Primeau, Akinsanya, & Apostolopoulos, 2015). The benefits of such an arrangement include pushing the coach out of their comfort zone to improve their coaching skills and the creation of a "vibrant training community that enriches all the athletes involved" (Primeau et al., p. 68).

Many coaches only have experience with able-bodied athletes and a common complaint amongst them is that it is difficult to find quality coaching references and education (Martin & Whalen, 2014). However, when specific clinics were required in other countries, some elite coaches stated that they were a waste of time (Bush & Silk, 2012), and the courses may be too elementary (McMaster et al., 2012). Other countries, such as the United Kingdom and Canada, have comprehensive coaching education programs, and some even require certification. In the United Kingdom, the organization sports coach UK established the UK Coaching Framework, a Coaching Children Curriculum, and Inclusion and Diversity Coaching (Lara-Bercial, 2011; sports coach UK, 2017). In Canada, the Coaching Association of Canada has a National Coaching Certification Program (NCCP) that includes education on specific sports, including Paralympic sports (Coach CA, 2017; Falcão et al., 2015). However, coaches of athletes with intellectual disabilities provided similar reports regarding the formal coaching education experiences provided by the NCCP and other groups, as being too generic and

not beneficial to their development, though they felt the courses had the potential to be so, perhaps with restructuring (MacDonald, Beck, Erickson, & Côté, 2016).

The coaches cited learning by doing and through coaching peers as the primary ways they developed their skills, but would welcome additional specific learning opportunities through the NCCP and through printed and electronic materials. Following the 2008 Paralympic Games, many of Canada's coaches discussed avenues through which the country's Paralympic coaching pool could be developed. Ideas included mentorship programs designed to bring developing coaches to major national and international events to work with a senior coach and encouraging and assisting coaches of able-bodied athletes in gaining experience and knowledge working with adaptive sport athletes (Sawicki, 2008).

Peer mentorship appears to be one of primary modes of gaining knowledge and experience towards developing as a coach in adaptive sport (Cregan et al., 2007; Fairhurst et al., 2016; McMaster et al., 2012). Coaches report utilizing knowledge gained from their own coaches from their competitive days, from professors, and from international coaching peers. One interviewed coach stated that he, "looked forward to linking with coaches from other countries…I'm curious about what they are doing over there. So I go internationally for my own education" (Fairhurst et al., 2016, p. 4). Another coach recounted that he reached out to a variety of individuals (e.g., coaches, teachers, parents) to seek their advice, saying "I call different people for different things" (Fairhurst et al., 2016, p. 4). The coaches also suggested long-term mentoring

placements, including extensive hands on learning opportunities, to aid in the development of future coaches. They also recommended recruiting disability specialists, such as physical therapists and occupational therapists, to provide education regarding disability specifics and contextual aspects and to provide "tools to know what to expect and how to deal with certain situations" (Fairhurst et al., 2016, p. 5).

In a qualitative study examining the career evolution and knowledge of elite adaptive swim coaches in Canada, the authors reported that the coaches they interviewed had varied athletic careers themselves and that all coaches, including one who had competed as an adaptive athlete, began coaching able-bodied athletes first, and none had intended to coach adaptive athletes (Cregan et al., 2007). Most of the coaches had not even seen coaching as a career, but due to an "extreme level of enjoyment and love for the sport" and the coaching profession, they continued to do it. The coaches also described the importance of their role as a liaison between therapists (e.g., physical and occupational) and the athlete.

Within the United States, the entry point for many athletes into competitive sport is through the public school system. In surveys of American coaches, they were overall supportive of school-based sports opportunities for youth with disabilities, but the coaches did not feel their training was adequate to coach them (Flores, Beyer, & Vargas, 2012; Kozub & Porretta, 1998). These findings were consistent with similar coaching studies in Hungary (Dorogi, Bognar, & Petrovics, 2008) and Canada (Davey, 2014). In Canada, the novice parasailing coaches were uncertain of certain specifics (e.g., helping

athletes transfer) and were concerned with the athletes' overall safety. They were also concerned about offending the athletes with the use of inappropriate language (Davey, 2014). Over time, the coaches reported they learned these skills on the job and expressed positive feelings about their experiences coaching parasailing athletes. Coaches report that informal experiences (e.g., hands on clinics; talking to athletes, parents, and physical therapists; and mentoring relationships) are some of the most important coaching education experiences (McMaster et al., 2012).

Some athletes feel that their coaches should have actual disability sport experience to be effective (Wynnyk & Spencer-Cavaliere, 2013) while others believe it was not critical to success as a coach (McMaster et al., 2012). In a study examining the characteristics of wheelchair basketball and stand up basketball coaches, very few differences existed between the coaches of the sports in terms of coaching philosophy, expectations, and perspectives of the athletes also suggesting disability sport playing experience may not be necessary to be successful as a coach (Robbins et al., 2010).

Other researchers studying the strategies and the influence of Paralympic coaches have found many similarities to traditional sport coaches, but some unique differences do exist. For example, athletes with a disability, their parents, and members of their support-staff (e.g., personal coaches, physical therapists) tend to be critical sources of knowledge for coaches, helping them to build the athlete's autonomy both in sport and in life (Cregan et al., 2007; Fairhurst et al., 2016). Because of this relationship, the coach may adopt more of a democratic, autonomy supportive relationship with their athletes, which

leads to a greater sense of autonomy and relatedness for the athlete (Banack, Sabiston, & Bloom, 2011; Tawse et al., 2012). One reason that a coach may tend to lean on the athlete and their support team for this knowledge is that the coach is likely to have little knowledge of the specific disability and factors related to it, and the athletes or their support teams tend to be the best source of that information. This knowledge could range from contextual factors related to transportation to more sport-related issues, such as how to adapt a drill given the athlete's impairments or assistive device. Coaches of adaptive athletes have reported that this autonomy supportive style of coaching aids athletes in individual sports when they are training with others, to participate fully in training, and in their everyday life, and that it empowers them (Cregan et al., 2007). However, this style of coaching requires the coach to be more creative, to provide a more optimal learning environment.

Coaching Challenges

The most commonly cited challenges of working with adaptive sport populations are of a contextual nature. Coaches must always consider accessibility issues surrounding the sport venue (e.g., door widths for wheelchairs, restroom and shower facilities), ground transportation (e.g., wheelchair accessible buses and vans, how many wheelchair users per vehicle), and air transportation (e.g., pressure sores from prolonged sitting, dehydration, restroom access on flight), hotel accessibility, and restaurant accessibility, especially in situations where athletes have varying disabilities (McMaster et al., 2012). Coaches in adaptive sport also need to be able to adapt training programs

for athletes with a variety of different impairments (e.g., SCI versus limb amputation) (Falcão et al., 2015). These findings suggest there are context-specific factors within adaptive sport that may require courses and learning opportunities specific to the contextual domain (Fairhurst et al., 2016).

Beyond these contextual factors related to accessibility, formal learning opportunities also may need to address the physiological aspects of the classification system of Paralympic sport, as well as equipment and equipment modifications for their athletes (Fairhurst et al., 2016). Primeau et al. (2015) postulated that the main challenge for adaptive sport coaches is to understand the nuances of the various classifications and their implications and then develop safe and effective training programs to maximize their athletes' potential. Implications associated with the different classifications include issues related to the biomechanics of the adaptive sport, potential movement dysfunctions and injury patterns associated with different disabilities, and potential medical issues that might hinder performance and affect safety, including thermoregulation issues, boosting, pressure sores, and infections. The ability to be creative and to adapt programs based on unique individual needs will determine the adaptive sport coach's success.

While the contextual and classification issues are obviously important, the ability to address the psychosocial factors found in adaptive sport is also an important factor in developing successful programs. While the formal coaching education courses may provide novice coaches with technical and tactical knowledge, they do not adequately prepare coaches for managing social and personal issues (Cassidy, Jones, & Potrac,

2004). Many coaches have been trained in some skills, such as mental imagery, emotional control, and attentional focus, which could be used with any athlete or performance situation. However, most coaches have not been trained in building team cohesion, which has been linked to improvements in team satisfaction and success (Bloom, Stevens, & Wickwire, 2003), despite the fact that sport psychology practitioners within the U.S. Paralympic program have advocated for such training (Moffett, Dieffenbach, & Statler, 2009).

While team cohesion is important in any group effort, it may be even more important in the adaptive sport community because the disabled athletes are at greater risk for psychosocial and developmental challenges (Campbell & Jones, 2002). While human behavior could be described as an individual construct, most recognize the importance of groups in regards to behavior, and the group dynamic cannot be underestimated. In fact, some have argued that individuals have a need to belong to a group (Baumeister & Leary, 1995) and that cohesion is the most important group variable (Lott & Lott, 1965). When looking at team cohesion within Paralympic sport in Canada, coaches reported the importance of team members building a relationship outside of training and competition. Due to geographical constraints in Canada, team leaders often use technology (e.g., Skype, iMessenger) to build and foster team cohesion (Falcão et al., 2015). The coaches also recommended that even when face-to-face at camps, the focus should not be completely on training, but topics outside of sport (e.g., family, other interests) needed to be discussed to build trust and relationships. The coaches suggested

the use of social activities, such as team dinners and team activities, in assisting to build relationships and cohesion. They also said that due to varying disabilities and impairments these activities usually could not be completed on a whim but required advanced thought and preparation due to potential accessibility issues.

While the idea of team cohesion seems obvious in a team sport (e.g., wheelchair basketball), this dynamic was also seen as being important by individual sport coaches (e.g., swimming and track and field). Part of the team dynamic is the process of integrating new team members. Paralympic swim coaches have described the importance of a welcoming environment that makes new members feel comfortable, including being at ease with their appearance, which is likely to be different from other individuals on the team (Cregan et al., 2007). If such an environment does not exist, athletes are less likely to perform well or to return.

Coaching Ethics

Unique ethical concerns within adaptive sport that coaches must consider include issues surrounding classification and the potential of some athletes to cheat in an attempt to be classified at a lower level and thus have a competitive advantage (Bredahl, 2011). Coaches have an ethical responsibility to discourage such attempts and to report them if discovered, or risk suspension by the IPC. Also, given the potential psychosocial impact of sport in the lives of those with disabilities, ethically, coaches also need to consider whether they have a responsibility to help adaptive athletes to transition out of sport once their competitive careers have ended into other careers and recreational activities (Martin

& Whalen, 2014). The discussion regarding this responsibility has increased in recent years (Leonard & Schimmel, 2016; Park & Lavallee, 2015; Brown, Webb, Robinson, & Cotgreave, 2018; Bundon & Ashfield, 2016; Bjornsen & Dinkel, 2017) in the wake of several cases of poor transition described in the media through programs such as ESPN's 30 for 30 (ESPN, 2018).

Classification

Classification is the process through which athletes with physical impairments are grouped into classes of like impairments for competition purposes to even the playing field within adaptive sport. Within the Paralympics, the IPC oversees the classification process.

International Paralympic Committee Vision and Mission

The IPC is currently the global governing body of the Paralympic movement and the organizer of the Summer and Winter Paralympic Games. The IPC's stated vision for Paralympic sport is: "To enable Paralympic athletes to achieve sporting excellence and inspire and excite the world" (International Paralympic Committee, 2016b). The organization's mission is included in Table 2.2.

Table 2.2

International Paralympic Committee Mission

Mission #	Mission Description
1	To guarantee and supervise the organization of successful Paralympic Games.
2	To ensure the growth and strength of the Paralympic Movement through the development of National Paralympic Committees in all countries and give support to the activities of all IPC member organizations.
3	To promote and contribute to the development of sport opportunities and competitions, from initiation to elite level, for Paralympic athletes as the foundation of elite Paralympic sport.
4	To develop opportunities for female athletes and athletes with high support needs in sport at all levels and in all structures.
5	To support and encourage educational, cultural, research and scientific activities that contribute to the development and promotion of the Paralympic Movement.
6	To seek the continuous global promotion and media coverage of the Paralympic Movement, its vision of inspiration and excitement through sport, its ideals and activities.
7	To promote the self-governance of each Paralympic sport either as an integral part of the international sport movement for able-bodied athletes, or as an independent sport organization, whilst at all times safeguarding and preserving its own identity.
8	To ensure that in sport practiced within the Paralympic Movement the spirit of fair play prevails, violence is banned, the health risk of the athletes is managed and fundamental ethical principles are upheld.
9	To contribute to the creation of a drug-free sport environment for all Paralympic athletes in conjunction with the World Anti-Doping Agency.
10	To promote Paralympic sport without discrimination for political, religious, economic, disability, gender, sexual orientation, or race reasons.
11	To ensure the means necessary to support the future growth of the Paralympic Movement.

Note: Adapted from International Paralympic Committee (2016b)

For the Rio 2016 Paralympic games, the IPC oversaw 22 sports. The IPC acts as the international federation for eight Paralympic sports, including Athletics (i.e., track and field), meaning that the IPC oversees all rules for the sport of Paralympic Track and Field, including the sport's classification code (International Paralympic Committee, 2017a).

Sociological Theory of Classification

Sociologically, adaptive sport is a complex social system with many individual factors interacting with each other to optimize the viability of the movement (Wu, Williams, & Sherrill, 2000). Social order in disability sport centers on equity and differential performances resulting from variations in the type and severity of impairment (Wu, 2001). To achieve some degree of organization and regulation consistent with the ideals of fair play, the application of a classification system is used in Paralympic sport, including Paralympic Track and Field. The classification system was developed (with the original Classification Code written in 2007 and rewritten in 2013 and 2015) to try to ensure fair competition and should be conceptualized as a type of positive social control in pursuit of this goal.

When research centers on the structure and function of social systems, structural-functional theory is used to a varying extent (Wu et al., 2000). This theory is guided by the assumption that social order is based on consensus, common values, and interrelated subsystems (Coakley, 1998). Classification provides the social order for disability sport and should be based on the consensus that classification is used to make competition

equitable and fair, on common beliefs and values about the training of classifiers, and the role of classifiers within the Paralympic movement (Wu et al., 2000). Within the disability sport movement, there is widespread agreement that "classification, as a social system, must be maintained with gradual changes (as needed) to assure that the system continues to meet needs" (Wu et al., 2000, p. 422). Sherrill (1999) advocated for increased research regarding disability sport classification theory noting that classification philosophy is constantly changing.

Classification Research

The call for research regarding the classification process was made as early as 1985 when the Committee on Sports for the Disabled (a standing USOC subcommittee) identified it as one of seven top research priorities (Reid & Prupas, 1998). Due to increased financial awards (e.g., sponsorships, prize earnings), media attention, and opportunity for legal challenge, the classification process needs to be based on sound scientific principles, to use language that is understood internationally, and to be easy to implement. The goal of research efforts is to assist in the development of an evidence-based classification system that is streamlined, fair, reliable, valid, and that provides a defendable process in the face of litigation.

Originally, Paralympic classification was a medically-based system, with athletes placed into groups based on their medical diagnosis (Tweedy & Vanlandewijck, 2009). At the 2000 Sydney Paralympic Summer Games, four different systems of classification were used, the Cerebral Palsy International Sport and Recreation Association (CPISRA),

International Stoke Mandeville Wheelchair Sports Federation (ISMWSF), International Sports Organization for the Disabled (ISOD) system for amputees, and the ISOD system for *les autres* [others]. During the Sydney Paralympics, there were fifteen 100-m final races for men and eleven for women (Jones & Howe, 2005) to accommodate the various athlete classification categories. Due to the cumbersomeness and confusion associated with these systems, for years some have advocated for a more streamlined system. There have been many drivers for the push to a more integrated, functional, and sport-specific classification system including political, logistical, and economic motivators (Tweedy, 2002).

Dr. Sean Tweedy, PhD, who serves as the Chief Investigator on the IPC Athletics Classification project, has produced or been involved in the production of numerous research articles regarding the classification process. In an attempt to streamline the classification process, he advocated for the use of taxonomic theory and the International Classification of Functioning, Disability, and Health (ICF) as the foundation for the new system (Tweedy, 2002). Tweedy advocated for a system that would take into consideration the biomechanical considerations of the impairment (a force generation issue or a force control issue), the biomechanics of the sport or event (sprinting versus distance, running versus throwing), and the interaction of the two (activity limitation) (Beckman & Tweedy, 2009b; Tweedy & Vanlandewijck, 2009; Tweedy, 2003; Tweedy, Beckman, & Connick, 2014). Tweedy and his co-authors have also made a strong push for additional classification research by outlining priority areas (Beckman & Tweedy,

2009b; Tweedy & Vanlandewijck, 2009; Tweedy, 2002; Tweedy 2003; Tweedy et al., 2014). Researchers have begun to fill in the evidence gap by studying factors important in Paralympic classification process (see Table 2.3).

Table 2.3

Summary of Paralympic Classification Research

Research Focus	**Authors**
activity limitation tests in ambulatory sprinters	Beckman & Tweedy, 2009a
influence of prosthetic characteristics on sprinting	Weyand et al., 2009; Weyand & Bundle, 2010
manual muscle testing	Tweedy, Williams, & Bourke, 2010
influence of residual limb shank length on long jump performance	Nolan, Patritti, Stana, & Tweedy, 2011
autonomic function as a missing piece of the classification process	Mills & Krassioukov, 2011
influence of trunk strength in wheelchair racing starts	Vanlandewijck, Verellen, Beckman, Connick, & Tweedy, 2011
seating configuration for classification purposes of seated throwers	Tweedy et al., 2012
novel strength tests	Beckman, Newcombe, Vanlandewijck, Connick, & Tweedy, 2014
tests to objectively identify intentional misrepresentation using Fitt's Law	Deuble, Connick, Beckman, Abernethy, & Tweedy, 2016

IPC and International Olympic Committee (IOC) Agreement

Another primary motivator for a change in classification is believed to be the desire to reduce the number of Paralympic classes. The reported rationale was that class

reduction would increase the number of athletes within classes and thus raise the level of competition and, subsequently, the interest in the Paralympic movement (Tweedy, 2003). Others believed the primary reason for the move was to appease the IOC's restriction on the number of classes and participants and to attract media and sponsorship interest with a less confusing classification system, thus enhancing external rewards that secondary agents within the movement (e.g., administrators) would also benefit from (Howe & Jones, 2006).

The IPC's 2001 agreement with the IOC, the drive for commercialization of the sport, and the subsequent modification of the classification system are seen by some as a shift of power and purpose within the movement that serves to "disempower" the very group it seeks to empower, athletes with a disability (Howe & Jones, 2006). With this shift, the groups most likely to be negatively affected are those with the most severe impairments and women, as they are the athletes most likely to be "classed out" of sport (Howe & Jones, 2006). Also, these athletes are the least likely to obtain major sponsorships as there is a hierarchy of what is considered "acceptable" impairment within the athletic community (Sherrill & Williams, 1996), and society as a whole (Schell & Rodriguez, 2001).

Since the 1988 Paralympic games in Seoul, there has been a noticeable decrease in the number of severely impaired athletes participating in track and field (Howe, 2008). While some might argue that this decline legitimizes elite sport for the disabled, it is at odds with the stated mission of the IPC. Winning is not central to the Paralympic

movement, but it is an important consideration for National Paralympic Committees (NPCs) during team selection, as they receive more publicity and increased funding based on their winnings. As such, the NPCs are not concerned if an event is removed from the schedule unless one of their country's athletes was an expected medalist (Howe & Jones, 2006). As events are removed from the schedule, the removal is often reported to be due to a perceived disinterest by athletes, but this disinterest may also stem from a perceived lack of opportunity for advancement on the part of the athlete.

The reported purpose of the IOC and IPC agreement was to build a closer organizational relationship. Part of the agreement combines the two Games (Olympics and Paralympics) for a host country's bid, which helps to build legitimacy for the Paralympic Games. Another part of the agreement allows for the restriction in size of the Paralympic Games. Streamlining classification was one manner to restrict size. Another strategy to reduce the number of participants was the raising of the qualification standards for some events (e.g., increased distances thrown, faster track times). Also, for an event to now be viable for a particular class at the Paralympic Games, there must be a minimum of 6 athletes eligible to compete in the event from a minimum of 4 different countries. The event must also have a minimum of 10 athletes on the IPC World rankings list to be viable (Howe & Jones, 2006).

IPC Classification Code and Process

In 2007, the General Assembly of the IPC approved the *IPC Classification Code*, which is a set of guidelines, policies, and procedures for classification in sports governed

by the IPC or its member federations. The IPC position on classification in Paralympic sport is to promote participation in sport by people with disabilities by minimizing the effect of impairment on the outcome of competition. Therefore, each class within the classification system should comprise athletes who have impairments that cause a comparable degree of activity limitation (Tweedy & Vanlandewijck, 2009).

Classification is the process by which participant eligibility is first determined and then used to group athletes to ensure "fair and equitable" competition (International Paralympic Committee, 2007; Vanlandewijck & Thompson, 2016). Tweedy (2002) described fair competition as being one in which the result is decided through "natural anthropometric, physiological, and psychological attributes and enhancement of those attributes by legitimate means (training, diet, recovery, etc.), event technique, and legal technical aids (e.g., strapping and/or prosthetics, equipment design)" (p. 234). Tweedy stated that athletes should not be "precluded from potential success due solely to the extent of the activity limitation caused by their impairment" (p. 234).

The classification process attempts to "minimize the influence" of the impairment but would infer that it does not eliminate it. In other words, not all athletes within a class will have the same activity limitation due to their impairment. This is to ensure that enough people are eligible for each class to hold a viable competition while at the same time not disadvantaging some athletes excessively (Tweedy, 2002). A classification system that is perceived to not be valid is a threat to the entire Paralympic movement. At the elite level, if an individual is perceived to be in the wrong class, their legitimacy

within the sport is questioned. If an athlete must compete against, and subsequently loses to, someone who has not been classified appropriately, the athlete may potentially miss award money and sponsorship opportunities making participation no longer financially sustainable. The athlete will feel cheated (Loland & McNamee, 2000). At the grassroots level, if athletes perceive the system to be unfair, participation will be discouraged, which is the opposite of the stated mission of the IPC. Under a fair and just system, each athlete should receive their just reward if they abide by the rules of the contest (i.e., the victory should go to the most deserving) (Jones & Howe, 2005). Fairness, as an obligation, comes when one voluntarily engages in rule-governed practices (Loland, 2002). The concept of fairness in Paralympic sport is linked directly to IPC Mission 8:

> To ensure that in sport practiced within the Paralympic Movement the spirit of fair play prevails, violence is banned, the health risk of the athletes is managed and fundamental ethical principles are upheld (International Paralympic Committee, 2016b).

By participating, one is consenting to the rules that govern on the contest. Due to these legitimacy and participation concerns, the IPC has stated it is committed to a transparent and defensible system of classification (International Paralympic Committee, 2016a).

Section 2.1.1 of the IPC Paralympic Classification Code states, "Classification is undertaken to ensure that an athlete's impairment is relevant to sport performance and to ensure that the athlete competes equitably with others" (International Paralympic Committee, 2016a). Currently, the process for classification in Athletics (i.e., track and field) entails the athlete obtaining an IPC athlete license, submitting an application for classification, along with supporting medical documentation, and being scheduled for an

onsite classification appointment at an approved competition with a classification panel. The panel is comprised of a minimum of two accredited classifiers. There are two types of classifiers, and one of each must be present. One is a medical classifier with relevant professional qualifications, such as a medical doctor, physical therapist, or occupational therapist. The other is a technical classifier, someone that has extensive knowledge of the sporting events, including the biomechanics and rules. These classifiers typically are sport and exercise scientists, physical education teachers, and coaches. Both types of classifiers must undergo sport-specific classification training to be certified as a classifier. Classifiers are the professionals within the social system who serve as the agents of social control (Wu, 2001). They have the power to control the classification system, and ultimately the fairness of competition (Wu, Williams, & Sherrill, 2000).

The next step for athletes in the classification process is undergo a physical assessment to determine if the athlete has an eligible impairment type (Table 2.4) and that the impairment is severe enough to cause an activity limitation (International Paralympic Committee, 2015a). This physical assessment usually entails a variety of testing including: anthropometric measurements, manual muscle testing, goniometry, the Ashworth scale for hypertonia, and tests for impaired coordination. The athlete may also be subjected to a technical assessment, where their skills related to an event are assessed in a non-competitive environment. Based on these assessment findings, the athlete is allocated a class (see Table 2.5 for a list of general classifications). The athlete is then observed by the panel during training sessions (technical assessment) leading up to the

event and during the competition (observational assessment) itself to determine if the athlete's performance is consistent with the physical assessment and class profile.

Table 2.4

Eligible Physical Impairment Types and Descriptions

Impairment Type	Description
Hypertonia	Abnormal increase in muscle tension with reduced ability of muscles to stretch, joint stiffness, slowness of movement, and poor postural adaptation and balance, due to problems in the central nervous system, typical of conditions such as cerebral palsy, acquired brain injury, multiple sclerosis or stroke.
Ataxia	Lack of muscle co-ordination due to problems with the parts of the central nervous system that control movement and balance, typical of conditions such as brain injury, cerebral palsy, multiple sclerosis, Friedreich's ataxia, or spinocerebellar ataxia.
Athetosis	Repetitive and more or less continual involuntary movements caused by fluctuating muscle tone arising from problems in the central nervous system, typical of conditions such as cerebral palsy, stroke, or traumatic brain injury.
Limb deficiency	A total or partial absence of bones or joints of the shoulder region, upper extremities, pelvic region or lower extremities, resulting as a consequence of trauma (e.g., traumatic amputation) or illness (e.g., amputation due to cancer) or congenital limb deficiency (dysmelia).
Impaired passive range of motion	Range of movement in one or more joints is permanently reduced due to trauma, illness, or congenital deficiency (e.g., conditions such as arthrogryposis, ankyloses, or joint contracture resulting from trauma).
Impaired muscle power	The muscles in the limbs or trunk are completely or partially paralyzed as a consequence of conditions, such as SCI, muscular dystrophy, brachial plexus injury, polio, or spina bifida.
Leg length difference	Minimum of 7cm leg length difference in one leg due to trauma, illness, or congenital conditions.
Short Stature	Standing height and limb length are reduced due to conditions such as achondroplasia, osteogenesis imperfecta, or growth dysfunction.

Table 2.5

General Descriptions of Paralympic Track and Field Classifications

Class Number	General Description
11-13	Track and field athletes who are visually impaired. Blind athletes compete in class 11, wear compulsory blindfolds and run with a guide runner. Athletes in class 12 are visually impaired, but running with a guide is optional.
20	Track and field athletes who are intellectually impaired. Athletes in this class have difficulty with reaction time and memory recognition during an event. There are three events for men and women in the Rio program - 1,500m, long jump and shot put- these particular events have been medically proven to have an impact on performance for T/F20 competitors.
31-38	Track and field athletes with cerebral palsy or other neurological conditions that affect muscle co-ordination and control. Athletes in classes 31-34 compete in a seated position (using a racing or throwing chair), while athletes in classes 35-38 compete standing.
40-41	Track and field athletes with short stature (also known medically as dwarfism).
42-47	Track and field amputees. In classes 42-44, the legs are affected, and in class 45-47, the arms are affected. Athletes in these classes compete standing and do not use a wheelchair.
T51-54	Wheelchair track athletes. Athletes in class 51-52 are affected in both lower and upper limbs. T53 athletes have fully functioning arms but have no trunk function at all, while T54 athletes have partial trunk and leg functions.
F51-58	Wheelchair field athletes. Athletes in F51-53 classes have limited shoulder, arm, and hand functions and no trunk or leg function. F54 athletes have normal function in their arms and hands but have no trunk or leg function. In the F55-58 classes the trunk and leg function increases.

Note. A letter "F" represents field athletes, while the letter "T" represents track athletes. The number refers to the severity of their impairment with lower numbers representing more severe impairments (International Paralympic Committee, 2015a). Adapted from British Broadcasting Company (2016).

During the technical and observational assessment process, the athlete's class can be confirmed (no longer requiring the athlete to go through the classification process) or placed under review (the athlete will have to go through the process again). There is also a process through which an athlete may protest their class allocation (International Paralympic Committee, 2016a).

As stated earlier, to be eligible to compete in Paralympic Track and Field, a participant must have an eligible impairment type. Currently, there are 10 major impairment types as described in Table 2.4. The impairment must be permanent. Once it is determined that the athlete has an eligible impairment, the severity of the impairment and its influence on participation in the chosen event must be determined. For example, if an athlete has an upper extremity amputation, they have an eligible impairment, and it is permanent. However, based on the level of the amputation, the athlete may or may not be eligible to compete. If the amputation is a transhumeral amputation, the athlete would be eligible to compete in track and field. However, if the amputation was through the metacarpals, the athlete would not be eligible for running events because the impairment does not meet minimal eligibility criteria since it is believed that the level of the amputation would not significantly influence participation in running events. In an attempt to control the number of events, athletes with upper extremity amputations only have events on the schedule that would be most impacted by the impairment (e.g., sprint events), due to the start mechanics.

Within any sport classification system, there is likely to be attempts to cheat the system to better one's chances of success by intentionally misrepresenting one's abilities for the purposes of being placed in a lower functioning class. In an attempt to deter "intentional misrepresentation," the *Classification Code* contains sanctions, including a potential lifetime ban for athletes and staff found to have intentionally misrepresented or to have knowingly allowed it to happen (International Paralympic Committee, 2016a). However, due to the lack of objective methods for identifying intentional misrepresentation and the potential for a legal battle, the IPC rarely sanctions. As a result, athletes and coaches believe that intentional misrepresentation is common (Taylor & Foggo, 2016). Techniques commonly reported include purposefully stimulating increased tone by use of cold temperatures by athletes with CP, by manipulating medication schedules to induce spasms or to influence tone, or by simply not giving one's best effort during testing.

Psychosocial Considerations of Paralympic Classification

Paralympic sport classifiers are typically able-bodied, and athletes may perceive that sport is "policed by the able" (Howe, 2008) and see the classifiers as "agents of social control" (Wu et al., 2000). The classification process, as experienced by an actual athlete, was perhaps best explained in an auto-ethnographic study by a former wheelchair basketball national team player. She describes the "interrogation" of the classification process and her Paralympic story (Peers, 2011).

> According to Wu and Williams (1999), within the sport of Paralympic swimming: Misclassification is an interesting and perennial problem in disability sport. As

> with many others, it is the root cause of much frustration and anger (a) among swimmers who feel they have been disadvantaged by losing to a competitor who should be in a higher class and (b) among coaches and swimmers who may believe that they have been disadvantaged by being place in a higher class than their impairment warrants (p. 262).

These frustrations and anger may manifest themselves through a lack of interest in continued participation. Athletes may also become frustrated and disenchanted when classes are combined due to streamlining or a lack of numbers to make an event viable. Reports of retirement after such incidences have been reported (Howe, 2008).

Within Paralympic track and field, a qualitative study of classification has also been completed. In his ethnographic study, Howe (2008) examined data collected while he competed as an athlete and served as a journalist within the Paralympic movement. Howe describes his classification process at the 1988 Seoul Paralympic Games, including the waiting, alienation, and uncertainty associated with the process. He wrote that his body type was "pigeonholed" and then the allocation of a roommate was based solely on that assessment; the poking and prodding of the assessment itself; and the subjectification of being told to do as the classifiers ask and not to bother them with "trivial" questions. Howe wrote, "My body has been processed – classified – as an object of medical science where my disembodied identity does not seem to matter" (p. 503). Howe framed the Paralympic classification as a "habituation…that bodies must go through in order to be involved in Paralympic sport" (p. 503).

Theoretical Framework for the Classification Process

For a purely scientific examination of the process of classification, Tweedy (2002) was justified in his use of taxonomic theory. Taxonomy is used to systematically classify within a variety of fields, including within the field of medicine. Within disability sport, Tweedy and Vanlandewijck (2009) have been quick to recognize that it is not the person being classified but their impairments. Considering that classification, for all intents and purposes, is placing people into groups, it is important to consider the influence of the process and the meaning of the class allocation on the individual. What are the psychosocial implications? Howe and Jones (2006) suggested that the utilization of Morgan's (2002) practice community provides the "theoretical framework for an ethical exploration of the role of classification within Paralympic sport" (p. 32). This theoretical framework is consistent with others used in disability sport, namely the feminist model, wherein the end goal is empowerment of the primary agents.

The feminist model draws attention to forms of domination and has the potential to critique and transform prevailing social conditions (Hall, 1995). Morgan identified primary (athletes) and secondary (coaches, officials, media, spectators) agents within sport, the practice community. Morgan (1994) argues that the control of practices by institutions should be turned over and that scholars should serve to assist the practice community in regaining control of practices from "bureaucratic types." In essence, the practice community, primarily the athletes, should be driving policy and practice. Morgan suggested that scholars should assist athletes in resisting their "subjectification"

(Foucault, 1980) by exploring “where the power lies when social practices and institutional concerns are separated from each other” (Howe & Jones, 2006, p. 32).

Howe and Jones (2006) maintained that medically trained professionals were historically influential secondary agents within the practice community but that their “skills and understanding are increasingly being hijacked by the institutional concerns for the IPC in the service of simplifying the process of classifying athletes” (p. 43). Howe and Jones posited that the current classification system creates tension between the IPC and the practice community and that recently the IPC has wrestled away control of the classification system from the practice community. Using Morgan's theoretical framework, Howe and Jones contended that the practice community, and primarily the athletes within the community, should strive to regain control of the classification system with any change in the system “occurring within an environment of consultation and consent among the practice community as a whole” (p. 43).

The Paralympic classification system has undergone continual scrutiny and development. While the IPC has made great efforts to employ a scientific process with available research informing an evidence-based system, there remains large gaps in the research to definitively aid in the delineation of many classes and to allow for the management of both participant numbers and fair competition. Given the potential significant financial and psychosocial impact in the lives of Paralympic athletes, the IPC needs to consider fully these aspects in the development of their process. Adequate transparency and communication of all aspects of the classification process need to be

made to the relevant primary and secondary agents so that productive discussions may be had and concerns appropriately addressed in an open forum.

Theoretical Frameworks for this Dissertation

Given the entire literature review, no single theoretical framework appeared to be appropriate for all five specific purposes of this ethnographic study. Therefore, data were examined through the lenses of three theoretical constructs, which color the findings and implications for each individual study. The theoretical construct used for the socialization into and via Paralympic track and field article was the feminist model. Feminist theory gives voice to marginalized populations and seeks to empower them (Foucalt, 1985), including females who participate in sport (Theberge, 1987), and people with a disability who participate in a sport (Ashton-Shaeffer, Gibson, Autry, & Hanson, 2001a). The U.S. Paralympic Track and Field team is a population that has not previously been given a voice to their shared experiences, and by doing so, this study seeks to empower them.

Similar to the idea of empowerment is the self-determination theory and its constructs of competence, relatedness, and autonomy (Ryan & Deci, 2000). The self-determination theory was used to frame the analysis of the data regarding the role of healthcare providers and coaches within the Paralympic movement. Self-determination theory emphasizes the role of the environment (e.g., coach, teammates, and healthcare providers) in encouraging athletes' perceptions of self-determined autonomy, relatedness, and competence (Ryan & Deci, 2000). Autonomy is the ability to guide one's own life

free from external control. Competence is the aptitude to excel at what is meaningful to oneself. Relatedness is the sense of being connected or to belonging in the social world (Sugarman, 2013). Research in numerous settings support the idea that environmental supports for these components yields enhanced psychological functioning, self-regulation, and intrinsic motivation. For example, autonomy-supportive parents, relative to controlling parents, have more intrinsically motivated children (Grolnick, Deci, & Ryan, 1997). In sport, several studies indicate that more autonomous forms of motivation are associated with positive consequences including improved mental health, positive emotions, and greater persistence (Frederick & Ryan, 1993; Pelletier, Vallerand, & Blais, 1988; Vallerand & Losier, 1999). Environments conducive towards competence, autonomy, and relatedness will produce beneficial well-being, motivation, and performance consequences (Podlog & Eklund, 2007).

The theoretical construct used for the analysis of the IPC classification process and the study participants' perception of it is Morgan's practice community (Morgan, 1994). Morgan's practice community also has links to the feminist model, which has as its end goal the empowerment of the primary agents, in this case the athletes (Hall, 1995). Howe and Jones (2006) suggested that the utilization of Morgan's practice community provides the theoretical framework for a principled examination of the role of classification within Paralympic sport. Given the potential significant financial and psychosocial impact classification and event management can play in the lives of

Paralympic athletes, all parties need to fully consider the impact of classification policies and procedures in their development and implementation.

Summary

This chapter serves as a comprehensive literature review for this dissertation. In this chapter, we discussed previous research regarding the main topics of this dissertation and their corresponding theoretical frameworks. These topics included the history and influence of adaptive sport, socialization into and through adaptive sport, issues relevant to healthcare providers, subjects relevant to sport coaches, and matters surrounding the Paralympic Track and Field Classification system. The theoretical frameworks provided the perspective through which we viewed and analyzed the data. These frameworks and the additional data analysis methods used in this study are described in detail in Chapter III.

CHAPTER III

DESIGN AND METHODOLOGY

This chapter's focus is on the design and methodology of the dissertation as a whole and the global purpose to understand the culture of the U.S. Paralympic Track and Field team from the 2015 World Championships through the completion of the 2016 Paralympic Games. Specific topics of interest within this global purpose were the influence of sport in the lives of those involved in this elite adaptive sport culture, the barriers and facilitators to participation, issues related to and relevant to healthcare providers and coaches, and the psychosocial effects of the International Paralympic Committee (IPC) Classification System within Paralympic track and field. To achieve this global purpose and specific topics of interest, a qualitative research paradigm was most appropriate.

Due to the increased interest in rehabilitation research of a holistic nature that values complex, subjective knowledge and finds meaning in context, the number of qualitative studies has increased (Schmid, 1981; VanderKaay et al., 2018). Qualitative research helps to answer "why?" questions by providing insight, and allows for the search of the meaning of an experience or event. There are several different qualitative design orientations, with perhaps three of the most common being ethnography, phenomenology, and grounded theory. Ethnography is the study of cultural patterns and experiences, often using observations by immersion in the field and through

interviews. In phenomenological studies, the focus is on acquiring the in-depth meaning of a circumstance, with data usually gathered through contextual interviews. Grounded theory studies seek to build theory to understand social, psychological, and structural processes within the context of participant experiences, usually through the use of observations and interviews (Creswell, 2013). The methods within these types of analyses often overlap with certain methodological aspects being more prevalent in one type over another.

In part due to the access that the primary investigator (PI) had to the U.S. Paralympic Track and Field team, an ethnographic methodology was selected for this study. Ethnography derives from anthropology and involves the study of a culture (Creswell, 2013). DePoy and Gitlin define culture as "the set of explicit and tacit rules, symbols, and rituals that guide patterns of human behavior within a group" (2010, p. 131). Cultures occur within ethnic groups, organizations, programs, and other types of groups of people such as sports teams (Letts et al., 2007). Ethnographic researchers become immersed in the culture to obtain an "insider" perspective and work to understand participants' viewpoints (Creswell, 2013). Persons with disabilities have "…interrelated and shared customs and traditions," which result in a specific culture, a primary example being disability sport (Mackelprang & Salsgiver, 1999, p. 147), making it a suitable environment for ethnographic study.

Merriam's (2002, p. 6) basic interpretive qualitative methodology was used to "understand how participants make meaning of a situation or a phenomenon." This

research design allows not only a better understanding of the experience of the U.S. Paralympic Track and Field team members, but also the influence of these experiences in their lives, since interpretive qualitative methodology reveals "the experience and meaning of disability in our culture in richer terms than normally achieved" (Ferguson, Ferguson, & Taylor, 1992, p. 7). The bulk of the dissertation research involved the analysis and interpretation of data that was collected between October 13, 2015 and November 1, 2016. As analysis showed the need for the Paralympic track and field classifiers point of view, three additional interviews were conducted in March 2017 with classifiers who were part of the Paralympic track and field culture during the study timeframe.

Feasibility Study and Informed Consent

An initial feasibility study for this project was conducted as a part of a class assignment for a doctoral level qualitative research course at Texas Woman's University. Since the assignment had approval from both the faculty instructor and the U.S. Paralympic Track and Field high performance director, formal Institutional Review Board (IRB) approval was not required for the data collected at the 2015 IPC World Championships. With informal consent of the team, the PI took field notes of observations and interviewed one athlete and one coach using the initial interview guides (see Appendices A and B). The relevant social media posts and news articles from the 2015 IPC World Championships were captured for analysis.

By the end of the course (December 2015), the practice-experience of carrying out qualitative data collection and analysis formed the PI's conceptualization of the future dissertation. Once it was determined that the course assignment would form the basis of the dissertation, the PI submitted formal IRB applications that were approved at Texas Women's University, including a retrospective application to add the material from the course assignment. From that point forward, the PI obtained written informed consent prospectively. As various participants expressed disappointment that their names would not be disclosed, the PI re-consented participants so all were given the option to disclose their actual name or to remain anonymous.

Therefore, the feasibility study not only partially fulfilled course requirements, but also informed future data collection, including the identification of problems with the interview guides allowing design changes as needed. Feasibility studies focus on and inform study design and processes and result in preliminary examination of the data. They answer the question: "Can this study be done?" (Orsmond & Cohn, 2015). Through the feasibility study, the PI gained perspective on the impact of sport participation, barriers and facilitators to participation, and themes related to the roles of healthcare providers and coaches. No changes were made in the questions or procedures as a result of the feasibility study, though changes were made to the interview question guide with further immersion into the field. After IRB approval, an abstract from the feasibility study was accepted in 2016 for presentation at the 2017 American Physical Therapy

Association (APTA) Combined Sections meeting (Walters & Thompson, 2017). The feasibility study is presented in its entirety in Chapter IV.

Observation Sites

The PI collected observational data of the U.S. Paralympic Track and Field team from the 2015 IPC World Championships in Doha, Qatar, through the 2016 Paralympic Games in Rio de Janeiro, Brazil. The total timeline spanned 12 months and 3 weeks and included four team training camps/training facilities and six competitions. The camps and competitions ranged between 4 and 23 days. The PI obtained observational data at the team camps, training facilities, and competitions listed in Table 3.1.

Table 3.1

Observational Data Collection Dates and Events

Date	Event	Location
October 13 – November 2, 2015	IPC World Championships	Doha, Qatar
April 4 – April 10, 2016	Chula Vista OTC Throws Camp/ Pomona-Pitzer Track & Field Invitational	Chula Vista, CA Claremont, CA
May 9 – May 15, 2016	Desert Challenge Games & Military Camp	Phoenix, AZ Luke Air Force Base
May 16 – May 22, 2016	IPC Rio Test Event	Rio de Janeiro, Brazil
June 29 – July 5, 2016	U.S. Paralympics Track & Field Nationals and Team Trials	Charlotte, NC
July 17 – July 23, 2016	University of Illinois U.S. Paralympic National Training Center for Wheelchair Track	Champaign, IL
August 8 – August 15, 2016	Chula Vista OTC Sprints & Relays Camp	Chula Vista, CA
August 28 – September 20, 2016	Rio Paralympic Games	Rio de Janeiro, Brazil

Note. IPC = International Paralympic Committee; OTC = Olympic Training Center.

Participants

For the purposes of the dissertation, all athletes and staff were considered Rio 2016 Paralympic hopefuls through their involvement at one of these events, and asked to consent to participate. Sampling involved soliciting athletes, coaches, staff, and family members in attendance at events and camps to participate in the study. As the primary investigator (PI) became familiar with the team, she invited selected team members to be interviewed via purposeful, snowball sampling (Creswell, 2013). Additional interviews were requested from family members and classifiers who were either not present at these events or camps or not available due to scheduling constraints. Three coaches aided in selecting representative participants for the interviews based on predetermined criteria: (a) ability to reflect on their involvement on the team and in the Paralympic movement, and (b) participants reflecting the spectrum of the athletes and disabilities common to the team, including gender and minority status, sport events, military status, disability type, and congenital versus acquired.

While reporting of the number of participants is usually a study result and not part of the methods, doing so here demonstrates the intentional methodological decision to triangulate data sources within the culture. Data source triangulation enhances validity by providing a more complex perspective of the situation or culture, and serves to balance biases intrinsic to the participants' roles (Fossey, Harvey, McDermott, & Davidson, 2002; Miles, Huberman, & Saldana, 2014). A total of 136 people, including

athletes (*n* = 103), coaches and staff (*n* = 26), family members (*n* = 4), and classifiers (*n* = 3) were thus observed, interviewed, or both.

Data Collection

Over the course of the Paralympic track and field season, from the IPC World Championships in October 2015 through the Rio Paralympic Games (Games ended September 18, 2016), the PI conducted participant observations, semi-structured interviews, social media tracking, and media coverage capturing. In addition, the study continued six weeks beyond the Rio Games. This allowed for a period of reflection for participants and the PI, including athletes who on short notice, were told of available slots for the Rio Games following the banning of the Russian delegation and in an attempt to make certain events viable for the severely impaired (Female F51 events, Male T33 100m). Approximately 4 months later, the three interviews with Paralympic track and field classifiers occurred. By the intentional methodological decision to use different data collection methods, different facets of data were collected to allow a more three-dimensional perspective of the culture through triangulation of data collection methods (Miles, Huberman, & Saldana, 2014). All data types (documents, images, transcripts) were uploaded into NVivo 11 software (Qualitative Solutions and Researching International, 2015) for data management and analysis.

Participant Observations

In ethnographic studies, immersion in the field of study is a requirement of participant observation, incorporating both participation and observation (Frank, 1997).

The PI joined the team as a member of the volunteer medical staff, serving as both a physical therapist and an athletic trainer. This enabled the PI to experience training sessions and events from both on-field and off-field perspectives, including team travel, meals, meetings, treatment sessions, and team social events. Participant observations were made of interactions within the team and the general atmosphere in both on-field and off-field settings. The PI did not reveal any Health Information Portability Accountability Act (HIPAA) information without the express written consent of the person in question.

The PI recorded participant observations in field notes during and immediately following team activities. These field notes contained observations of the setting, session activities, paraphrases of conversations, and descriptions of the researcher's thoughts regarding participation consistent with best practices to ensure study rigor (Emerson, Fritz, & Shaw, 2011). Personal reflections were entered into a research log. Through these observations, subsequent interviews, and personal reflections, initial themes emerged, and provided the PI with the background knowledge and opportunity to explore these themes in later interactions and interviews.

In-Depth Interviews

In-depth interviews are designed to explore "how informants understand and construct meaning regarding experiences and events in their lives" (Cook, 2001). Supported by guidelines from Creswell (2013) and in consultation with two coaches, one doctoral-trained Paralympic athlete and qualitative researcher, and one co-investigator,

interview guides were developed (Appendices A-D). The PI practiced the interview prior to its first execution. Each interview was audiotaped and lasted between 11 minutes and 36 seconds to 1 hour, 36 minutes and 48 seconds. Interviews were transcribed verbatim (except when others interrupted or the conversation veered away from the research topic). Interviews were collected until the researcher observed she was no longer obtaining any new information related to the study's purpose, which is consistent with the purpose of theoretical saturation (Creswell, 2013). Participants were given the opportunity to review their transcript and to suggest changes, allowing for member checking.

Of the 42 interviews, 24 were athletes (anyone competing in events for the team, including the guides for the visually impaired), 11 were coaches or staff (non-athletes in any paid or volunteer position), four were family members (spouses or parents), and three were IPC International Classifiers. The PI used two interview modes: face-to-face and remotely via technology. Of the 42 interviews, 30 were conducted in person. Due to scheduling conflicts during the camps and events, prohibiting completion of face-to-face interviews, twelve were conducted via telephone or videoconference, primarily with staff (n = 5) and classifiers (n = 3). The remaining telephone/videoconference interviews were conducted with a family member (n = 1) and athletes (n = 3), again due to an inability to schedule during events.

Social Media and Media Coverage

Medical researchers have started to use social media posts as a data source for ethnographic studies, especially in populations that might otherwise be difficult to study

(Gibson et al., 2016). In the case of the U.S. Paralympic Track and Field team, team members are easily observed as a group in team camps and at events, but are otherwise dispersed geographically. Despite the distance, they regularly interact with each other and their family, friends, sponsors, and governing bodies via social media. Therefore, the public social media accounts (Facebook, Twitter, and Instagram) of the team members interviewed were tracked as primary data sources, and relevant posts were collected for further coding and analysis. Relevant posts were determined to be those that pertained to the person's involvement in sport.

Media coverage, including news articles and televised stories, of the issues relevant to this study was used to supplement the observations and interviews and to assist in triangulation of the data sources and methods. Material was retrieved from links posted on team member and organizational social media sites and through internet searches of team member names. Recognizing the limitations of the use of media coverage in research (Bryman, 2012), including the potential lack of fact checking, we attempted to limit bias by only gathered material from respected sources with details that could be confirmed from other sources.

Data Analysis

Ethnographic data analysis seeks to identify themes and develop interpretive schema and is usually conducted concurrently with data collection (DePoy & Gitlin, 2010). For the purposes of this study, multiple qualitative data analysis methods were employed. The research team used the heuristics approach to "up-code" the data.

Heuristics are code words that are used to flag similar points and emerging themes within the data. This approach helps researchers in organizing data in the same subject area (van Manen, 1990). Researchers use this technique to make sense of written text and allow the participants' data to tell their story. Drawing from grounded theory methods of data analysis, a constant comparative approach to analyzing the data was adopted (Glaser & Strauss, 1999). In addition to the heuristic and constant comparative approaches, the PI used a directed content analysis approach when existing theory was available to help focus the research question, to provide predictions about variables of interest or about the relationships among variables, and to help determine the initial coding scheme and relationships between codes (Hsieh & Shannon, 2005). However, analysis was not bound by existing theoretical frameworks and a largely "bottom up" approach was carried out. If data could not be categorized based on previous research, a new code was given. Therefore, emerging categories were initially developed from previous research when available, and then continually compared with data across and within datasets. These categories were further developed, refined, and compared to produce themes that offered a clear, rich understanding of the cultural experience of being an elite track and field athlete with a disability in the United States. This process supports the careful refinement of the final categories that led to theme development.

The PI analyzed emerging themes and attempted to confirm them through triangulation from all sources (observations, interviews, social media posts, and media coverage) using the constant comparative method. Following completion of major theme

identification, the search began for additional themes and sub-themes within the coded data. A thematic map was drawn to visually determine the patterns and relationships between each theme (see Figure 3.1). Themes were then re-read to ensure they were related to coded data and that no data were overlooked, while further defining the themes to fully understand each one.

Rigor

Several procedures were used to ensure the trustworthiness of the study, most notably, the triangulation of sources and methods discussed earlier in this chapter. In addition, other methodological steps were taken including steps taken secondary to a primarily ethnographic approach, careful construction of the interviews, documentation throughout the study that allowed rich description, member checking, and peer examination.

Being involved as a participant observer provided prolonged and varied field experience with the team, allowing the PI to observe the team across time, to discuss shared experiences in interviews, and to confirm developing themes. Furthermore, becoming an "insider" enabled the PI to build rapport with participants and interviewees (Creswell, 2013) and increased her familiarity with the study environment, further enriching the quality of the data. This PI-participant rapport was built on trust that was reinforced by interview questions that made sense to, and were valued by, the participants. Before conducting any interviews, the questions were vetted by several team and research members. The PI also consulted several team staff members for the

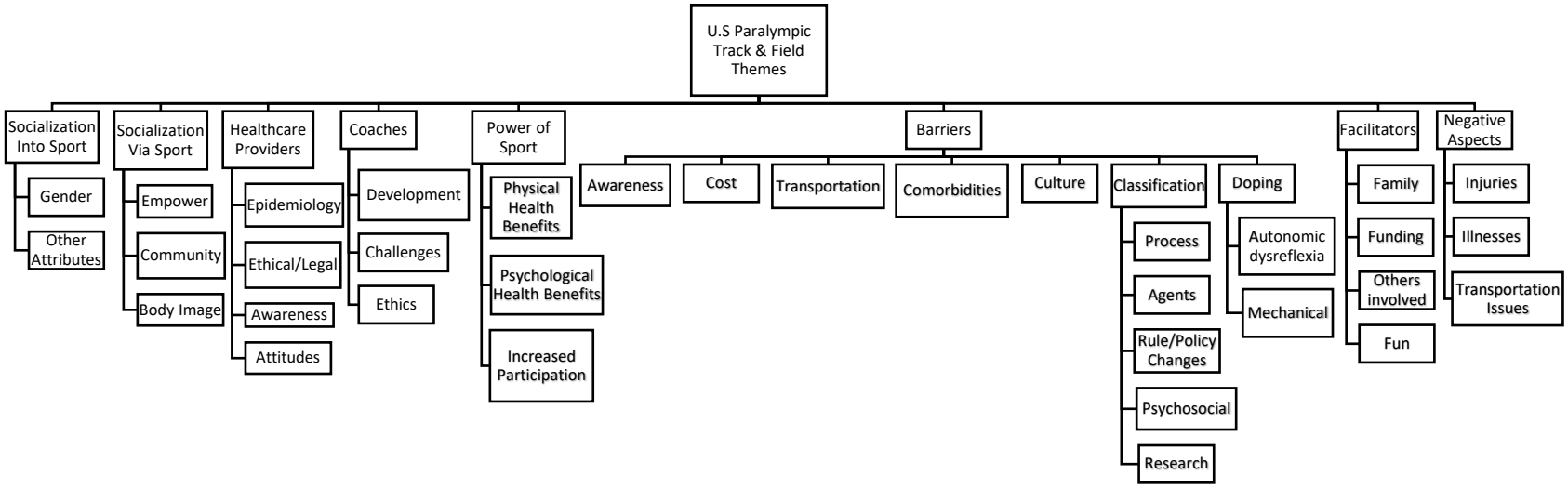

Figure 3.1. *Global Thematic Map*

purpose of identifying appropriate interviewees. Trust was reinforced over the course of the study as interviewed participants were given the opportunity to review their transcripts to confirm accuracy and suggest changes prior to coding.

Additional steps to ensure the data collected by the PI was trustworthy related to reflexivity. Reflexivity is the reflective process of examining both oneself as researcher and the research itself throughout the entire research process as a means of minimizing researcher bias (Krefting, 1991). The PI kept a journal to log research activities, detailing the participant observation sessions and interviews with more general memos on ideas, experiences, reflections, and decisions. Detailed descriptions of the participants, methods, results, and discussion provide sufficient information for the study to be replicated, contributing to transferability, a term synonymous with generalizability or external validity in quantitative research (Curtin & Fossey, 2007). Other documentation included analytic memo files, which were maintained to provide a transparent audit trail (Krefting, 1991).

The final two means of ensuring qualitative rigor involved member-checking and peer examination. While a dissertation is the chosen topic and work of the PI based on original research resulting in a substantial paper including several articles to be submitted for publication, the qualitative paradigm requires contribution of some participants and the dissertation committee to ensure rigor. As discussed previously, member checking occurred when participants were given the opportunity to review their interview transcript and to suggest changes. In the case of this dissertation, the PI also provided three participants with a draft of the feasibility study manuscript to ensure accuracy of the findings through member-checking. Also known as participant

respondent validation and similar to internal validity in quantitative research, member-checking is a technique for exploring the credibility of results (Goldblatt, Karnieli-Miller, & Neumann, 2011).

The final step to ensure rigor involved the diverse group of researchers comprising the dissertation committee as they participated in peer examination. In qualitative studies, peer examination involves co-investigators who influence category development and ensure that all decisions and interpretations are justified (Krefting, 1991). Through a data meeting, the PI presented and discussed the data and the emerging themes with the entire dissertation committee supported by the study documentation. As "co-investigators," the research team (PI and the four dissertation committee members) met to review and ensure the integrity of the data and analysis process. Thus, by establishing trust and rapport, acknowledging researcher bias, maintaining an audit trail, member-checking, and having a diverse research group analyze the data, the findings are likely to be more trustworthy (Creswell, 2013).

Ethical Considerations

The primary ethical concern in this study was the possible loss of confidentiality of participants due to the relatively small size of the population and the uniqueness of the athletes' disabilities and experiences. Steps to minimize this risk included reinforcing the efforts to maintain confidentiality, as protected by law and the Texas Woman's University IRB, and reaffirming that participation in this study was strictly voluntary and participants could choose to discontinue participation at any time.

To further address issues of confidentiality, participants' names were changed to pseudonyms for dissemination purposes unless an athlete specifically requested and provided written consent to having their legal name used instead of a pseudonym. As public figures, several athletes requested, and many opted, to use their legal names. Only initials were used in the interview transcripts and typed field notes that were shared with research team members. Research materials, including signed consent forms, digital interview recordings, field and data analysis notes, and electronic folders, were stored in a locked cabinet in the principle investigator's home or on a password protected computer. These materials will be stored for five years after the PI's dissertation defense, at which time all digital and electronic files will be deleted and all paper files will be shredded. Interviews were held in private locations at events or over the telephone or videoconference in the privacy of the PI's home.

Of specific concern, given the nature of the PI's role as a medical provider for the team, was loss of confidentiality regarding private health related information. As such, the PI made a concerted effort not to document any observations related to protected medical information without the participants' knowledge and consent, unless those details were previously revealed through the athletes' social media posts or news articles.

Theoretical Frameworks for Data Analysis

As was described at the beginning of this chapter, a common qualitative design orientation is grounded theory. When using this approach the study is initially grounded, or anchored, in an existing theory to serve as a starting point but seeks to build on the theory in understanding a social, psychological, or structural process.

When researchers go into the field unsure of what they might find, they might choose to approach the analysis, at least initially, with a specific theory in mind. This theory can "ground" the direction of the study initially, and as the researchers gain experience within the culture, they may potentially build on or diverge from the original guiding theory. For the purposes of each of the articles in Chapters V, VI, VII, and VIII, specific theories have been identified to guide, or frame, the study.

For the article addressing socialization of the adaptive athletes into sport and their socialization via sport (Chapter V), a feminist model was applied. Feminism is a common approach in qualitative studies examining disability and disability sport, as the model suggests the potential for empowerment (Hall, 1995). For the studies directed toward healthcare providers (Chapter VI) and coaches (Chapter VII), the self-determination theory (Ryan & Deci, 2000) was selected. One of the influences of adaptive sport identified in previous research is the promotion of autonomy and independence for participants. By identifying themes related to the role that coaches and their particular coaching philosophy can play in promoting participation, competence, relatedness, and autonomy through adaptive sport, independence and intrinsic motivation may be facilitated. Self-determination theory allowed the PI and co-investigators to examine the participant's experiences and perspectives related to their healthcare, their healthcare providers, and their coaches with consideration of how healthcare providers and coaches can facilitate autonomy and independence through their interactions with people with a disability.

For the discussion regarding the classification process (Chapter VIII), Morgan's practice community was used to examine the organizational structure of the

classification system and the potential psychosocial influences it may have for team members (Morgan, 1994). The goal of this investigation is to provide suggestions for the improvement of the classification system and process that would empower the athletes, consistent with the IPC mission.

Summary

This chapter discussed the design and methodology for this comprehensive qualitative study and the theoretical frameworks that served as lenses through which each major theme was viewed. In the subsequent dissertation chapters, the design and methodology specific to each individual article will be described in detail. As described in this chapter, the PI gained her sample from the pool of U.S. Paralympic Track and Field hopefuls, their families, and their sport classifiers. The PI gained data from five primary sources: interview transcriptions, field notes from observations, participants' relevant social media posts (some with and without images), and relevant news articles. The PI used a basic interpretive qualitative methodology with a heuristic model to code the data and data analysis via constant comparative and directed content analysis approaches. The PI followed ethical participant-protection protocol as stated from the Texas Woman's University IRB, and ensured rigor in the qualitative research process and maintained the highest ethical standards throughout the research process.

CHAPTER IV

BEYOND INCREDIBLE: THE POWER OF PARALYMPIC SPORT – AN ETHNOGRAPHIC FEASIBILITY STUDY

A Paper to Be Submitted For Publication in

Adapted Physical Activity Quarterly

Sheri Walters, DPT, Mary Thompson, PhD

Abstract

The primary purpose of this ethnographic feasibility study was to inform the design and processes of future data collection for a larger study describing the culture of the U.S. Paralympic Track and Field team. Secondary purposes were to describe the power of sport, and the potential barriers and facilitators to participation through observation, interviews, social media posts, and media coverage. During the 2015 International Paralympic Committee Athletics World Championships, observations were made and notes taken of the athletes (n = 83) and staff (n = 21). Two team members were interviewed, transcribed, and analyzed using ethnographic methods. Study rigor was established through various methods, including triangulation. Common themes related to the power of sport included physical and psychosocial health benefits, and increased participation in society. Barriers to participation included lack of awareness, fear, cost, comorbidities, culture, classification, and "doping". Facilitators included family, sponsorships, others involved in sport, and fun. Negative aspects included injuries, illnesses, and transportation issues. Some negative aspects were prominent, which requires staff to educate athletes of the

potential risk, to assist in the management of negative consequences, and to allow athlete autonomy.

Keywords: Paralympic Track and Field; barriers; facilitators; adaptive sport

Introduction

Feeling ill, Ima (pseudonym) decided to lay down and take a nap. When she awoke, the only physical abilities she had control of were breathing, blinking her eyes, and a shoulder shrug. With a nap, Ima had gone from being a completely independent college student to completely dependent on her parents. She merely existed, until a professor, whose daughter has a physical disability, introduced her to adaptive sport. Her life would be forever changed.

Ima's story is not unique within the Paralympic movement. As a whole, the Paralympic movement grew out of rehabilitation and education models following World War II. Dr. Ludwig Guttmann, a neurologist, believed that participation in sport could benefit people with spinal cord injuries by providing them with recreational exercise that was enjoyable, and that would help them re-integrate into society. Guttmann founded the Stoke Mandeville Games in 1948, the annual precursor to the first Paralympic Games in 1960 (Brittain & Green, 2011). In the United States, early adaptive sport efforts were driven by sports enthusiast and war veteran, Timothy Nugent, at the University of Illinois' comprehensive program of higher education for individuals with disabilities. His goal was for the veterans turned students to participate fully in college life, including sports. In 1949, Nugent coached the nation's first collegiate wheelchair basketball team, organized the first tournament, and founded the National Wheelchair Basketball Association (Brown,

2008). His legacy continues at the University of Illinois as this program was designated a U.S. Paralympic Training Site for wheelchair track and road racing.

Today, the U.S. Paralympic Track and Field team is represented by wounded military veterans; childhood cancer survivors; people born with a variety of neurological and musculoskeletal conditions, and with dwarfism; people who have sustained injuries in accidents; people with visual and cognitive impairments; and people with a host of other impairments, which qualified them to be eligible to compete. While Ima's story is not unique within the Paralympic movement, it is our intent to share some of the team's diverse experiences, to give a voice to their reality through qualitative methods. This study helps fill a void in adaptive sport research since most previous research has focused on team sports (e.g., wheelchair basketball) and information about potential harms or negatives of participation is lacking. Furthermore, previous research about benefits (e.g., belonging, empowerment) and facilitators/barriers is dated.

Belonging and the Power of Adaptive Sport

Many known benefits of sport participation have been reported in the literature. Sport has its roots in unstructured play. As an experience, play and leisure as a state of mind are intrinsically motivated and internally controlled, and allow a person to suspend aspects of reality, creating a joyful internal reality alone or with others (Russell, 2009; Sutton-Smith, 1997). As adults, play and leisure are more entwined with rules and regulations. A loss of choice in play or leisure activity due to disease or disability is a loss of something essential to autonomy and individuality (Bundy 1993). For people with disabilities, play and leisure activities that produce

meaningful participation, such as competitive sport, can produce a sense of belonging (Willis et al., 2016). Belonging gives life its meaning, purpose, and identity. For these reasons, sport and similar activities are considered essential to fully realizing the human rights promise (Hubbard, 2004).

Like Guttmann and Nugent, many believe that sport can be used as a vehicle for improving the health and well-being of people with a disability. For a person with a disability, physical activity may be more important for the improvement and maintenance of cardiovascular fitness, self-efficacy, and self-perceived quality of life than for someone without a disability (Blauwet & Willick, 2012). Sport may serve as a catalyst to improve physical (Blauwet & Willick, 2012; Yazicioglu, Taskaynatan, Guzelkucuk, & Tugcu, 2007), mental, emotional, and social health (Anneken, Hanssen-Doose, Hirschfeld, Scheuer, & Thietje, 2010; Gioia et al., 2006; Muraki, Tsunawake, Hiramatsu, & Yamasaki, 2000; Sherrill, Hinson, Gench, Kennedy, & Low, 1990; Sporner et al., 2009; Tasiemski, Kennedy, Gardner, & Taylor, 2005; Tasiemski & Brewer, 2011; Wetterhahn, Hanson, & Levy, 2002). For example, individuals with paraplegia, who are involved in wheelchair sports, are more likely to avoid major medical complications and hospitalizations (Curtis, McClanahan, Hall, Dillon, & Brown, 1986; Stotts, 1986), and physical activity is a known contributor to 4-year survival following a spinal cord injury (SCI) (Krause & Kjorsvig, 1992). In adults with SCI, participation in organized sport is positively associated with employment (Blauwet et al., 2013). People with physical disabilities have fewer opportunities to express themselves physically, and any level of sport participation may positively influence their physical health and quality of life.

Barriers and Facilitators

Despite the profound benefits previously discussed, a variety of researchers found many barriers to participation in adapted sport. These barriers include a lack of awareness of available programs (Taylor & McGruder, 1996), the material and attitudinal environment (Levins, Redenbach, & Dyck, 2004), cost (Tasiemski, Kennedy, Gardner, & Blaikley, 2004; Wu & Williams, 2001), lack of knowledgeable coaches (DePauw & Gavron, 1991), gender roles (Skucas, 2013), and a "loss of an able identity" (Levins et al., 2004, p. 501). Identifying barriers within the Paralympic community, as well as understanding how athletes with impairments overcame them to become successful in their chosen sport, could assist others in becoming involved in sport and in progressing to higher levels of sport if desired.

Despite the multitude of barriers, facilitators to participation have also been identified by researchers and include intrinsic factors, such as having an athletic identity (Perrier, Sweet, Strachan, & Latimer-Cheung, 2012), as well as extrinsic factors. Extrinsic factors include social factors, such as peer athlete mentors (Perrier, Smith, & Latimer-Cheung, 2015) and other social support, such as family (Jaarsma, Geertzen, de Jong, Dijkstra, & Dekker, 2014), religion (Howe & Parker, 2014), and the rehabilitation process (Skucas, 2013). Understanding these facilitators and discovering how they might be enhanced, in addition to finding solutions for minimizing barriers, may also assist in aiding others in their athletic pursuits.

Given this background, the primary purpose of this study involving data collection during the 2015 IPC Athletics World Championships in Doha, Qatar, was for it to serve as a feasibility study for a larger, more comprehensive ethnographic

study. Specifically, the purposes were to inform future data collection, including the identification of problems with the interview guides and to make design changes that might be needed. Feasibility studies focus on, and inform, study design and processes, and result in preliminary examination of the data. These studies answer the question: "Can this study be done?" (Orsmond & Cohn, 2015). Secondary purposes for this feasibility study include examination of the power of sports in the lives of those involved, and examination of the barriers and facilitators to participation in elite sports. Ultimately, for the global study, the purpose was to understand, in a qualitative manner, the culture of the U.S. Paralympic Track and Field team with data collection occurring during the 2015 World Championships through the 2016 Rio Paralympic Games. It is the eventual goal to use this, and future studies, to build awareness of adaptive sports among healthcare professionals and coaches, to assist those with disabilities in becoming involved in a program of their choosing, and to assist those with the ability and the desire in progressing to elite sport status.

Methods

An ethnographic methodology was selected for this study because of the primary investigator's perspective as a healthcare provider with access to the U.S. Paralympic Track and Field. Ethnography derives from anthropology and involves the study of a culture (Creswell, 2013), which can be defined as "the set of explicit and tacit rules, symbols, and rituals that guide patterns of human behavior within a group" (DePoy & Gitlin, 2010). Cultures occur not only in ethnic groups, but also within organizations, programs, and groups of people (Letts et al., 2007). Ethnographic researchers work to understand participants' viewpoints by becoming

involved in the culture to obtain an "insider" perspective (Creswell, 2013). Persons with disabilities have "…interrelated and shared customs and traditions," which result in a specific culture, and elite athletes involved in a disability sport, a subculture (Mackelprang & Salsgiver, 1999). Using Merriam's (2002) basic interpretive qualitative methodology, an ethnographic research design would allow a better understanding of the experience of the U.S. Paralympic Track and Field team members at the International Paralympic Committee (IPC) World Championships. Also, ethnography would provide insight on the power of sports in their lives, since interpretivism reveals "the experience and meaning of disability in our culture in richer terms than normally achieved" (Ferguson, Ferguson, & Taylor, 1992, p. 7).

Data Sources

The primary data source, observations, was obtained at the IPC World Championships in Doha, Qatar from October 13, 2015, to November 2, 2015 (21 days). In total, the primary investigator (PI) observed 104 team members (athletes and staff) (see Table 4.1). To allow for triangulating of findings, additional data sources were gathered included social media coverage and semi-structured interviews of two team members (see Table 4.2). The PI in consultation with team staff used purposeful sampling to identify prospective participants who appeared representative of the athletes and coaches (Creswell, 2013).

Data Collection

Participant observation. Immersion in the "field" of study is a requirement of participant observation, incorporating both participation and observation (Frank, 1997). The PI joined the team as a member of the volunteer medical staff, serving as

both a physical therapist and an athletic trainer. The PI's relationship to the topic is from her personal life experiences, including the observation of several family members with physical disabilities throughout her life and her own battle with cancer. Her position as a medical provider with the team enabled the PI to experience training sessions and events from both on-field and off-field perspectives, including team travel, meals, meetings, treatment sessions, and team social events. Participant observations were made of interactions within the team and the general atmosphere in both on-field and off-field settings. Informed consent was obtained and care was taken not to reveal any Health Information Portability Accountability Act (HIPAA) information without the express written consent of the person in question.

The PI made detailed field notes of participant observations during and immediately following team activities. These field notes contained observations of the setting, session activities, paraphrases of conversations, and descriptions of the researcher's thoughts regarding participation (Emerson, Fritz, & Shaw, 2011). Personal reflections were entered into a research log.

In-Depth interviews. In-depth interviews are designed to explore "how informants understand and construct meaning regarding experiences and events in their lives" (Cook, 2001, p. 24). Following guidelines from Creswell (2013), the PI developed a semi-structured interview guide in consultation with two coaches, a doctoral-trained Paralympic athlete and qualitative researcher, and the co-investigator. After practice, the PI carried out two face-to-face interviews. Each interview was digitally recorded and then transcribed verbatim. Participants had an opportunity to review their transcript and to suggest changes.

Table 4.1

U.S. Paralympic 2015 World Championship Track and Field Team Profile by IOC Classification, Event, and Sex

IOC Classification (General Description)	N	Age (y) Mean	Min.	Max.
11-13 (Athletes with visual impairments)				
Runners				
Males	6	24.5	17	31
Females	2	30.0	22	38
Jumpers				
Males	3	28.0	25	31
20 (Athletes with intellectual impairments)				
Males	2	19.0	18	20
31-38 (Athletes with cerebral palsy or other neurological conditions that result in similar impairments)				
Ambulatory sprint				
Males	3	20.7	20	22
Females	1	15.0	15	15
Standing throw				
Males	1	20.0	20	20
Jumps				
Males	1	20.0	20	20
Wheelchair racer				
Males	1	21.0	21	21
Females	1	15.0	15	15
Seated throw				
Females	1	18.0	18	18
40-41 (Athletes with short stature)	0			
42-47 (Athletes with amputation or limb impairments)				
Class 42-44, lower extremity				
Males – standing throws	3	20.7	20	22
Females –standing throws	1	15.0	15	15
Males – LE sprint	8	24.1	16	32
Females – LE sprint	8	26.1	17	41
Males – LE jump	5	23.4	16	34
Females – LE Jump	2	26.5	26	27
Class 45-47, upper extremity				
Males – UE sprint	3	20.0	17	23
Females – UE sprint	3	18.7	17	20
Males – UE jump	1	23	23	23
Females – UE jump	2	23.5	17	30
51-58 (Athletes who compete seated)				
T51-54 , Wheelchair Track				
Males	14	25.9	15	46
Females	10	26.2	18	41
F51-58, Seated Throwers				
Males	3	37.3	32	47
Females	3	41.5	28	55

Table 4.2

Interviewee Characteristics and Role

Pseudonym	Age	Sex	Team Role	Time with National Team
Ima	28	F	Seated Thrower	1 year
Angela	48	F	Wheelchair Racing Coach	7.5 years

Social media and media coverage. The use of social media has grown exponentially in the United States. Medical researchers have started to use social media posts as a data source for ethnographic studies, especially in populations that might otherwise be difficult to study (Gibson et al., 2016). The U.S. Paralympic Track and Field team members are easily observed as a group in team camps and at events, but otherwise they are dispersed geographically. Despite the distance, they regularly interact with each other and their family, friends, sponsors, and governing bodies via social media. The public social media accounts of the team members were tracked and posts collected around and about the IPC World Championships in Doha for further coding and analysis.

Media coverage, including news articles and televised stories, of issues relevant to the U.S. Paralympic Track and Field team and the IPC World Championships was used to supplement the observations and interviews and to assist in triangulation of the data. Material was retrieved from links posted on team member and organizational social media sites and through Internet searches of team member names. However, we do recognize the limitations of the use of media coverage in research (Bryman, 2012). To limit media bias, only material from reputable sources was used following suggestions from Bryman.

Data Analysis

Ethnographic data analysis seeks to identify themes and develop interpretive schema, and is best conducted concurrently with data collection (DePoy & Gitlin, 2010). In addition to basic interpretive qualitative methodology and drawing from grounded theory methods of data analysis, a constant comparative approach to analyzing the data was adopted (Glaser & Strauss, 1999). NVivo 11 software (Qualitative Solutions and Researching International, 2015) was used for data management and coding. The materials were initially coded based on relevant and related themes from the literature to help organize and interpret the information. These codes were further developed, refined, and compared to produce themes that offered a clear understanding of the experience of being an elite athlete with a disability. Themes were analyzed and an attempt was made to confirm them through triangulation across all data sources utilizing the constant comparative method. The next phase began the search for additional themes and sub-themes within the coded data. If data could not be categorized based on previous research, a new code was given. A thematic map was drawn to visually determine the patterns and relationships between each theme (see Figure 4.1). Themes were then re-read to ensure they were related to coded data and that no data were overlooked, while further defining the themes to fully understand each one. The steps of this analysis process are enumerated and summarized in Table 4.3. While presented linearly, the process was cyclical, with the data driving category development. This process supports the careful refinement of the final categories that lead to theme development.

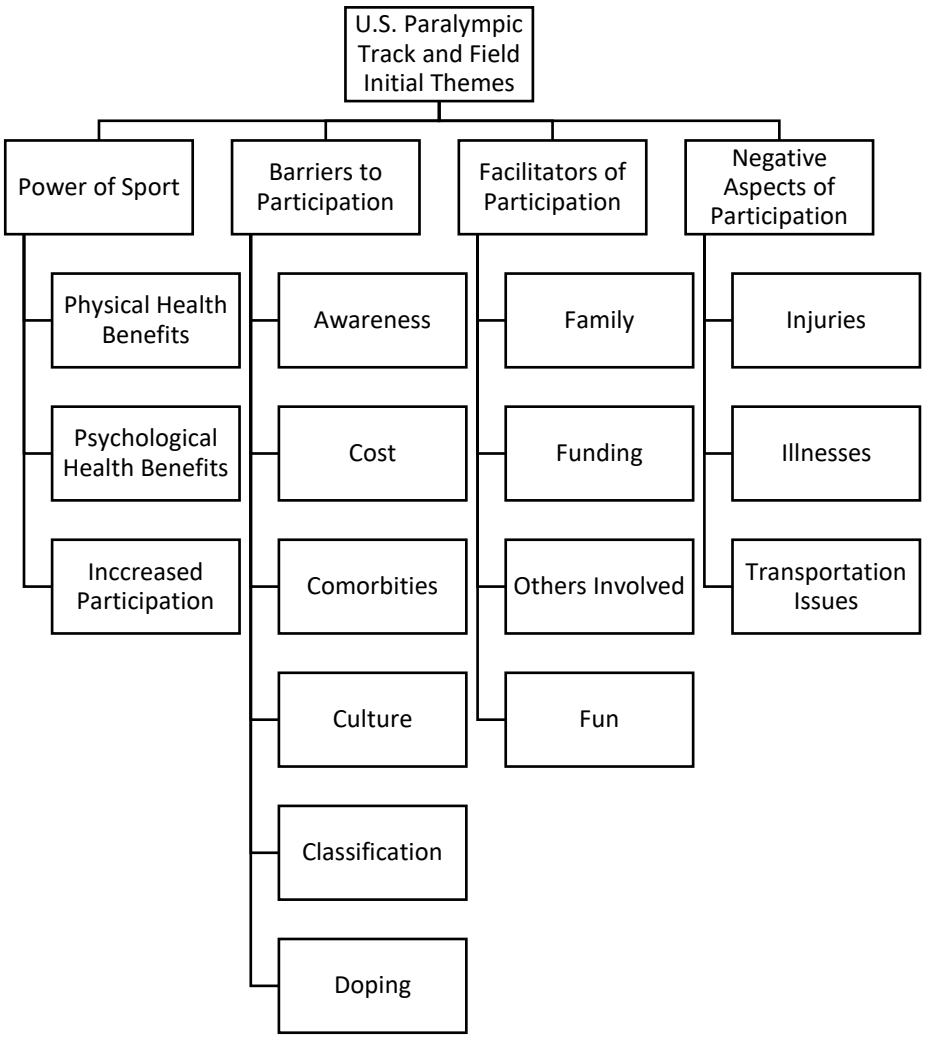

Figure 4.1. *Thematic Map of Feasibility Study Themes*

Table 4.3

Data Analysis Process

Step	Process
1	Transcribed interviews read to gain a sense of the whole, prominent themes noted in the research log and given labels consistent with previous research
2	Transcripts uploaded into NVivo 11 and coded to organize and initially interpret
3	Initial themes analyzed, additional sources (observations, social media, media coverage) uploaded and coded, search for themes and sub-themes within and across all sources (e.g., barriers and facilitators)
4	Raw data reviewed to ensure category labels accurately represented data. Identification of major themes and sub-themes, encompassing all data, category labels and definitions.
5	Revision of category system during consultation with co-investigator.
6	Themes re-read to confirm and ensure no data were overlooked, themes refined. Identification of four major themes.
7	Re-reading of all field notes, interviews, social media posts, and interviews to ensure data had been categorized appropriately.

Table 4.4 illustrates some brief examples of the PI's initial responses to the data (Step 1) and preliminary categories (Step 2) in keeping with the data analysis process outlined in Table 4.3.

Table 4.4

Examples of Initial Responses and Categorization of Extracts from Interviews

Transcript	Initial Response	Preliminary Category
Ima:		
• Sports like made me feel alive!	• Enjoyment of sport	• Power of Sport
• There's a rule of three. It costs 3 times as much, it takes 3 times longer…	• Financial and physical costs	• Barriers
Angela:		
• What if we treated everyone as if they were an elite athlete	• Activist, Facilitator	• Passion for People • Power of Sport
• Sport is a catalyst for life	• Activist, Power	• Facilitator • Power of Sport

Rigor

Several procedures were used to ensure the trustworthiness of the study, while theoretical saturation was deemed impractical and thus not used due to the nature of this feasibility study. The following procedures together ensured trustworthiness. Three team staff members assisted with identifying appropriate interviewees. Several team and research members vetted the interview questions. Interviewed participants were given the opportunity to review their transcripts to confirm accuracy and suggest changes prior to coding, and a sample of both observed and interview participants (*n* = 4) were provided with a draft of the manuscript to ensure accuracy of the findings through member-checking (Goldblatt, Karnieli-Miller, & Neumann, 2011). Using four data gathering methods, the PI was able to triangulate the data by combining observations, interviews, social media posts, and media coverage from athletes and staff (Fossey, Harvey, McDermott, & Davidson, 2002). Being involved as a participant observer provided prolonged and varied field experience with the team, allowing the PI to observe the team across time, to discuss shared experiences in interviews, and to confirm developing themes. Furthermore, becoming an "insider" enabled the PI to build rapport with participants and interviewees (Creswell, 2013), and increased her familiarity with the study environment, further enriching the quality of the data. In an effort to minimize researcher bias, and contribute to reflexivity, a journal was kept to log research activities, detailing the participant observation sessions and interviews, with more general memos on ideas, experiences, reflections, and decisions. Detailed descriptions of the participants, methods, results, and discussion provide sufficient information for the study to be replicated, contributing to

transferability (Curtin & Fossey, 2007). Peer examination with a co-investigator influenced category development and ensured that all decisions and interpretations were justified (Krefting, 1991). By acknowledging researcher bias, maintaining an audit trail, and having a diverse research group analyze the data, the findings are likely to be trustworthy (Creswell, 2013).

Findings

Field note data, interviews, social media, and media coverage were analyzed to construct four major themes associated with the experience of becoming involved in adaptive sport and of participating as an elite athlete on the U.S. Paralympic Track and Field team. These were identified as (a) the power of competitive sport; (b) barriers to participation in sport; (c) facilitators to participation in sport; and (d) negative aspects of sport participation. Data relevant to each of the themes will be presented and briefly discussed with reference to related literature.

Power of Sport

From the data, the influence of competitive adaptive sport in the lives of those involved became readily apparent. Sub-themes included physical health benefits, psychosocial benefits, and increased participation in society.

The influence of sport in the lives of those with disabilities was a significant motivator for involvement of the team staff. Angela, the interviewed coach stated:

> I could tell you story after story of how...potential athletes close to their deathbed, not realizing how active they could be and what they could be involved in, and then how much that (becoming involved) has changed them health wise and then saved their lives. (Coach 5)

In describing a specific athlete on the World Championships team, she stated:

> The change that has happened in him in the last 3 years has just been phenomenal. He's never, ever been this healthy in his life. He's never, ever been this strong. He's never, ever been able to gain weight. He's never, ever done this well in school. He's never, ever been this happy with himself. It's unreal. (Coach 5)

Ima, the interviewed athlete, also discussed the positive physical health benefits associated with elite sport:

> I am way more on top of my health now than I ever was before. My coach frequently reminds me, 'you are an athlete, you are a team member now….you have to make sure that you are in top condition.' (Athlete 17)

Team members and their families mentioned the psychosocial benefits of sports participation. After one athlete won his event and thus became a World Champion, his mother texted her thanks to a staff member. In the text, the mother remarked on the athlete's smile and how few smiles they saw during his battle with cancer (see Figure 4.2). Likewise, Ima described her first exposure to Wheelchair Rugby as "a really therapeutic thing….sports like made me feel alive! This is going to be okay" (Athlete 17). After becoming a wheelchair user, Ima reported that she became completely dependent on her parents in her daily activities, from transfers to grooming and self-hygiene. It was not until she travelled internationally for the first time, with the National Team, that she saw people with similar functional levels living

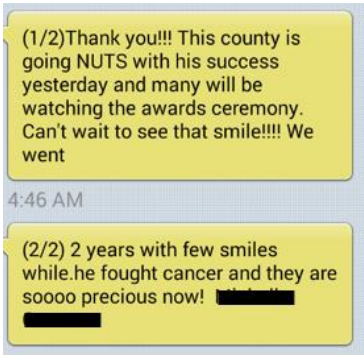

Figure 4.2. *Text from Cancer Survivor's Mother*

independently. It was during this first trip that her teammates helped her to see her potential to live independently and started her on the path by teaching her how they performed their activities of daily living (ADLs).

While positive health benefits have been reported with recreational activities, Angela stressed the importance of competition.

> Competing is life. Knowing how to handle failure, knowing how to set goals, handling wins, handling losses, handling people around you that have losses, I mean it's everything about life. It's how you are going to do in school, it's how you are going to do in a career, it's how you are going to handle a marriage, it's how you are going to handle your kids…sports is a catalyst for life. (Coach 5)

Similar sub-themes related to the influence of sport in the lives of athletes with physical disabilities have been reported in previous literature including positive psychosocial benefits (Carless et al., 2013), social re-integration (Brittain & Green, 2011), and physical health benefits (Stotts, 1986; Curtis et al., 1986).

Barriers to Participation

Unfortunately, team members described several barriers to getting involved in adaptive sports, and staying involved at an elite level. This cultural group obviously overcame barriers to initial participation, but barriers continued and had to be faced as individuals and as part of the group. These barriers included lack of awareness, fear, cost, comorbities/overall health, lack of adequate coaching, cultural issues, classification, and "doping."

Based on the interviews with and observations of team members, the greatest barrier to initial participation was a general societal lack of awareness of the available adaptive sports opportunities, and the potential benefits of participation in sports for those with a disability. Ima, like the majority of her teammates, was not made aware

of adaptive sports by a healthcare professional, with whom she had frequent contact. She learned of adaptive sports opportunities from a university professor, who had a daughter that is a participant. Angela, a licensed occupational therapist, also relayed similar experiences. She stated that as a collective, healthcare providers "suck" at educating people with disabilities about potential opportunities. Angela indicated that providers should tell their patients:

> 'You need to get involved in sport.' Period. End of story. 'When I see you at the next visit, I expect you to tell me what program you went to, what sport you did, and how did it go. I want an update.' (Coach 5)

Unfortunately, with medical providers, the issue may not be related solely to a lack of awareness, but also a depreciation of the person's abilities. In the Levins et al. (2004) study, one participant even included her physical therapist as someone who presented a barrier due to the therapist's underestimation of her abilities and low expectations.

Angela, who has run her own community adaptive sports program for 20 years, stated that one of the biggest barriers to participation that she sees are children who are afraid to participate, and parents who do not push them to do so.

> If you have never played a sport, to say that you don't like it, if you have never played a sport, to say you aren't athletic, is lies. It's all based on fear of the unknown and so many people with disabilities get away with it because no one in their life will push them recognizing that they are just saying it because they are just scared…They say they don't want to go or they say they are not interested and then we just let it go. (Coach 5)

She believes that people, health professionals, and society in general, do not push those with disabilities to participate because,

> you are pushing them to do something that one, the parent can't see them as an athlete. The parent can't see them (as an athlete) because they don't see it on the television or on the news, so you are asking them to convince their kid, or to not listen to their kid, to do something they don't know anything about either and they don't know in their heart necessarily that

> it's totally good for them because they can't wrap their brain around it either. (Coach 5)

This societal lack of awareness of adaptive sports, and focus on disabilities rather than abilities, has been described in a 2004 qualitative study examining barriers and facilitators to participation (Levins et al., 2004). The participants of that study, people with SCI, felt the general public discounted, or underestimated their abilities, or even placed negative attributes on them based solely on their physical impairments. One participant stated that the "biggest sort of hurdle that people have to get through…it's other people."

Like society as a whole, family members are often unaware of opportunities. Once they do become aware, they can serve as either a barrier or a facilitator to participation (Levins et al., 2004). Family may resent the time spent on the activity, feeling it is not important, or they can embrace the activity as a positive element in the participant's and their own lives, helping them to spend time together enjoying activities (Levins et al., 2004). Levins et al. findings were consistent with our observational and interview findings in regards to family support being either a facilitator or a barrier. While in Doha, the PI observed one athlete's husband. He was present and he assisted with her training, but she discussed with team members at a meal the lack of her biological family's support of her pursuing her athletic goals even at this elite level. Contrary to this observation, one medically trained mother travelled to a longer team event with her minor son to help care for a sacral pressure ulcer he was recovering.

Besides the lack of awareness and family support, adaptive sports can be expensive. During observations, the athletes talked among themselves about the cost

of equipment needed to compete ranging from $800 for a good throwing chair, to $35,000 for an above knee running leg. At the elite level, the cost of participation also includes coaching services, gym memberships, travel expenses, training gear, throwing implements (e.g., shot put, discus, javelin), and event entry fees. For those who make the National Team, some of these costs may be off-set by a small monthly stipend based on world ranking in their sport and among each other (Team A versus B). For a Top 3 world ranking, team members receive $1,000 per month, National Team A receives $750 per month, and National Team B receives $500 per month. Team members also receive other benefits including coverage of travel expenses for team events, higher education tuition grants, health insurance coverage, travel discounts for non-team events, coaching support, and team issued gear (Sellers, Kaufman-Cain, & Cruz, 2015).

Another often discussed and observed barrier to participation are the athletes' additional health concerns and co-morbidities. Within the team, frequent reports of pressure sores (by people who use a wheelchair or a lower extremity prosthetic), urinary tract infections (especially within the SCI population), upper respiratory tract infections (often related to travel), medication-related issues (e.g., baclofen pumps, blood thinners), heat and dehydration-related issues, and bone mineral density issues (leading to fractures) were discussed and observed. These issues are consistent with the epidemiological literature in the Paralympic population (Blauwet et al., 2016; Derman, Schwellnus, & Jordaan, 2014; Derman et al., 2013; Schwellnus et al., 2013; Willick et al., 2013). Figure 4.3 illustrates some examples of these issues observed during the World Championships.

Figure 4.3. *Examples of Comorbidities Experienced During the 2015 IPC World Championships:* (a) team prosthetist and physician building a splint for a seated thrower following a leg fracture, (b) seated thrower competing with the splint, and (c) seated thrower sporting a cooling vest while trying to stay cool in the Qatari heat.

Ima reported having issues related to daily access to knowledgeable coaching and support (e.g., assistance with throwing chair set-up, implement retrieval). She overcame this barrier by choosing to move across the country to an established adaptive sport training program and to live independently. Likewise, Angela, a wheelchair racing coach, reported that there are limited educational opportunities in adaptive sports education, and that most coaches currently learn by volunteering and by doing. These findings are consistent with previous studies going back to the 1990s indicating that there is a lack of knowledgeable coaches in disability sport. Researchers have reported this problem along with the need for coaching development that includes more disability sport-specific material in formal coach education courses, clinics, and seminars (Cregan, Bloom, & Reid, 2007; DePauw & Gavron, 1991; DePauw & Gavron, 2005; Liow & Hopkins, 1996; Robbins, Houston, & Dummer, 2010; Sawicki, 2008; Sherrill & Williams, 1996).

The lack of formal educational opportunities often leaves coaches turning to informal opportunities for learning such as consulting coaching peers and greater communication with their athletes regarding disability-specific information (Cregan et al., 2007; McMaster, Culver, & Werthner, 2012). Despite the limited amount of formal education for coaches in adapted sport, the PI observed coaches that were highly competent in their ability to coach their specific events and in working with the athletes. The athletes never complained openly or on social media about their team or home coaches indicating that overall they were pleased with the coaching they were receiving.

Another barrier to the initiation of adaptive sports reported by Angela and several others on the coaching staff, were issues related to our society and various cultures. Angela reported that during an internship at a spinal care centre that patients were not given the option to try sports, they were required to do so. In contrast, she stated that parents of children will often allow their kids, who express hesitations, to sit on the sidelines. She believes this usually occurs out of fear that their child would get hurt, or because they do not identify with their child as an athlete. The coaches also reported that parents of children with cerebral palsy were often hesitant to allow their children to participate because of confusion between the Special Olympics and Paralympics, and the perceived stigma associated with the Special Olympics for those without cognitive deficits. Angela's views were consistent with findings in the literature (Verschuren, Wiart, Hermans, & Ketelaar, 2012). Angela and several coaches discussed that some ethnic groups within the U.S. were less likely to allow

their children to participate due to the stigma within their culture groups of having a child with a disability.

Barriers to success and continuation within the sport at the elite level include issues surrounding classification and "doping." Classification is one shared cultural experience unique to the Paralympic athlete. Classification is the process by which participant eligibility is first determined, and then used to group athletes to ensure "fair and equitable" competition (International Paralympic Committee, 2007; Vanlandewijck & Thompson, 2016). Despite these best of intentions, the PI observed a general disdain for the classification process across all athlete classifications and amongst the veteran staff. Several team members complained about inconsistencies regarding the classification process and "unfair" athlete groupings within the classes. Examples included (a) "non-amputees" (e.g., athletes with lower extremity joint fusions) competing against athletes with lower extremity amputations, (b) athletes with unilateral lower extremity amputations competing against those with bilateral lower extremity amputations and the potential for "mechanical" doping, and (c) athletes with neurological conditions effecting all fours limbs and the trunk competing against athletes with musculoskeletal conditions (e.g., arthrogryposis) effecting all four limbs and the trunk (see Figure 4.4). Many team members reported competitors having an unfair advantage in their respective events.

This contempt for the classification process is not unique to the track and field team. The experience, and the emotions associated with it, has been described in an auto-ethnographic study (Peers, 2011). While the IPC seeks to be inclusive to allow

the greatest number of participants to experience the power of Paralympic sport, some athletes believe this inclusion limits their ability to participate as an elite athlete and to

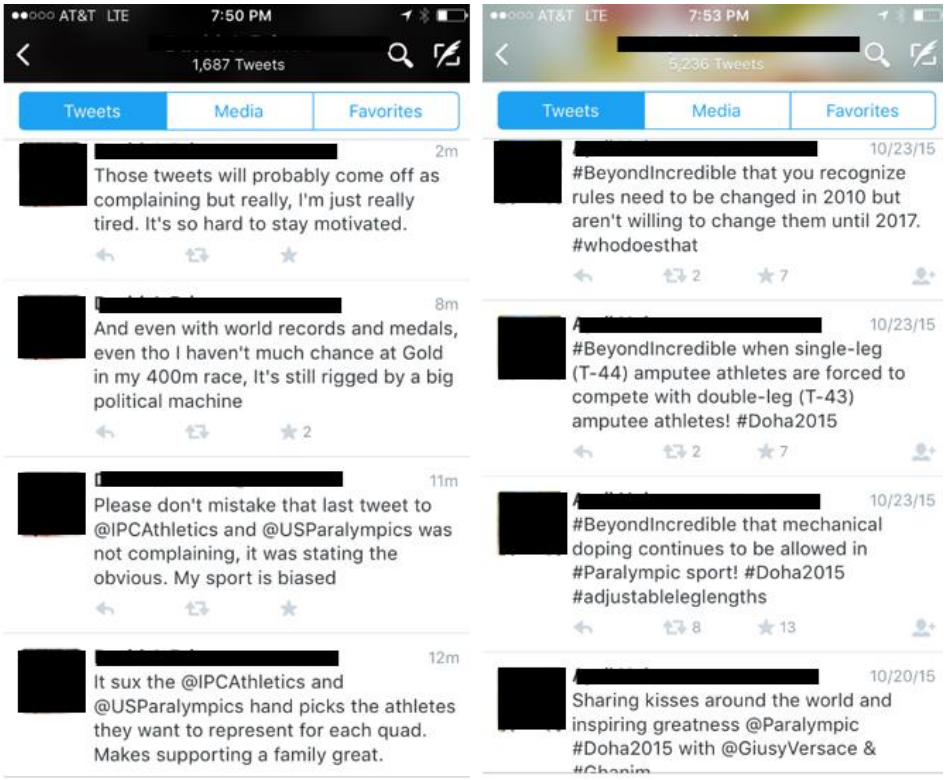

Figure 4.4. *Examples of Social Media Posts Regarding Classification, Event Management, and Mechanical Doping*

gain sponsorships, essentially being "classed out" of successful competition, which is consistent with some media reports (Wade, 2016).

Reasoning for the current classification system and event schedule is complex. Additional issues surrounding the process include controlling event sizes and the limited number of participants for certain classes, requiring smaller classes to be combined. There were 213 track and field events scheduled for the 2015 IPC World Championships, making it one of the world's largest track and field meets in terms of the number of events (International Paralympic Committee, 2015c). This is even after the IPC combined or eliminated some events due to the limited number of competitors

within a classification for an event, especially for women's events where the participants had greater impairments.

Similar to classification, two "doping" techniques unique to Paralympic sports are the phenomena of boosting and mechanical doping (Wade, 2016; Lemire, 2016). Boosting is the intentional induction of autonomic dysreflexia (AD) to enhance athletic performance. Autonomic dysreflexia is unique to individuals with SCI at T6 or above. While it has been demonstrated that AD can improve performance in some athletes, it can also cause increased blood pressure, which can be dangerous. The IPC had considered AD doping and had banned its use (Long, Meredith, & Bell, 1997). The IPC later re-classed AD as a health risk, and now prohibits athletes from competing in a dysreflexic state whether intentional or not (Bhambhani et al., 2010). The performance benefits are believed to be the greatest, and used the most, in middle to long distance wheelchair racing. The IPC has a fiduciary responsibility to ensure that athletes compete in a safe manner at the events that are sanctioned by the organization (Bhambhani et al., 2010).

Another issue, mechanical doping, is the use of prosthetic devices by bilateral amputees that are longer than their natural limbs would have been. This increased length provides a mechanical advantage over athletes with a single amputation or those who choose to run on prosthetics that more closely match their natural height (Lemire, 2016; Taylor, 2016). While AD has been banned and efforts made to eliminate its use, mechanical doping has been permitted by the IPC, at least through the Rio Paralympic Games, much to the disdain of some U.S. team members (see Figures 4.4 and 4.5).

Figure 4.5. *Example of an Athlete's Social Media Post Lamenting Mechanical Doping*

Facilitators to Participation

While many barriers to participation were noted, some common themes related to facilitating participation in competitive sports stood out during the observations, interviews, and in social media including: family support, sponsorships/grants, others involved in sport, and fun. Angela stated that one of the strongest facilitators can be family support and insistence. Parents who recognize "who's the parent" and push their kids to become involved, and then follow through with transporting them to regular practices and competitions, serve as the best external motivators to the initiation of participation. Jaarsma, Dijkstra, De Blecourt, Geertzen, and Dekker (2015) also found strong familial support as a facilitator for children. From that point, participants can meet others with similar functional

abilities and find activities that they have a proficiency for or enjoyment of, or develop these characteristics over time.

Team members described the high cost of equipment and travel as a significant barrier to participation at all levels of adaptive sport. To off-set this barrier, they discussed the influence of sponsorships, grants, team stipends, and fund raisers. Ima mentioned the role of local sponsorships, including her durable medical equipment sales representative, in facilitating her participation through funding some of her early travel expenses, which allowed her to make her first National Team. She believes "more education on how to seek out sponsors" would assist her in securing the funding she needs to stay involved in elite sport (Athlete 17). Likewise, Angela mentioned grant-funding organizations, such as the Challenged Athlete Foundation (www.challengedathletes.org), and community fund raising opportunities that support athletes. The U.S. team, as a whole, was sponsored by Nike, which provided team gear for the athletes and staff (see Figure 4.6a). Many of the athletes on the U.S. Paralympic Track and Field National Team were sponsored by and interacted with, or mentioned, their sponsors in social media posts (see Figure 4.6a-e). While increasingly more corporate sponsors (such as Nike, Coca-Cola, BMW, BP, and Citibank) have answered the Paralympic call, sponsorship opportunities, and other funding, are not as abundant for the Paralympic athletes as they are for Olympic athletes.

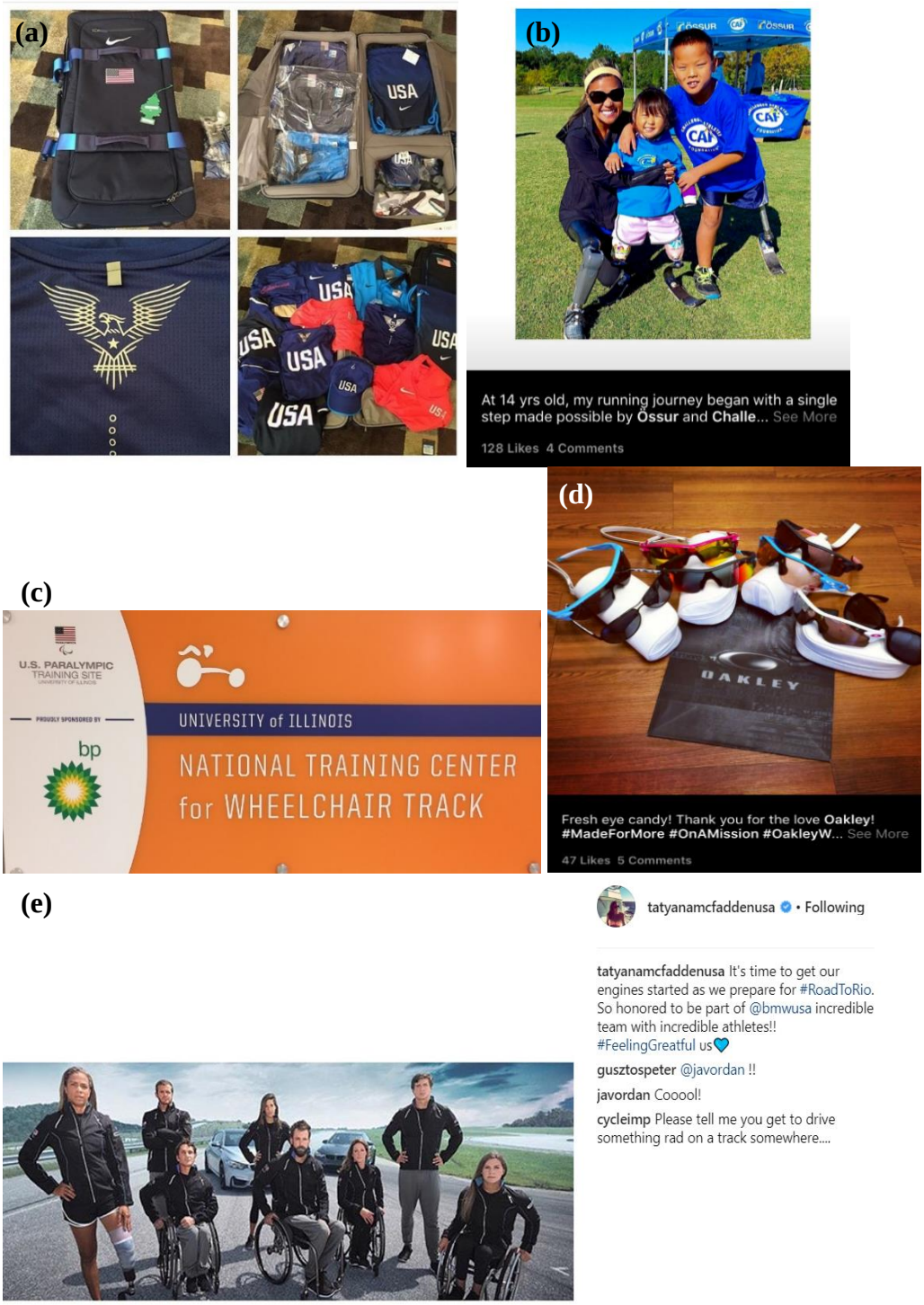

Figure 4.6a-e. *Examples of Paralympic Athlete Sponsorship:* (a) team member Nike allotment; (b) Scout Bassett thanking sponsors, Challenged Athletes Foundation and Ossur; (c) BP sponsored in part the Wheelchair Track National Training Center at the University of Illinois; (d) athlete shares his Oakley haul; and (e) This commercial for BMW and its sponsorship of Team USA and individual athletes was released during the 2015 World Championships and shared by an athlete on Instagram.

Lack of sponsorship may be due in part to companies, marketing agencies, and the media not knowing how to properly position and promote adaptive sports. Research suggests that one of the prevailing methods of positioning disability sport, and athletes with disability, is through the inspiration, or "supercrip," and "superhuman," narrative that many Paralympians do not like (Cottingham, Pate, & Gearity, 2015; Cottingham, Gearity, Goldsmith, Kim, & Walter, 2015; Shpigel, 2016). This narrative was most evident through the Local Organizing Committee's tagline for the event, "Beyond Incredible" as seen in Figure 4.7.

Figure 4.7. *2015 IPC Athletics World Championships Signage*

Throughout the study, team members described the influence of others in sport (including teammates, coaches, and programs) in facilitating their participation. Ima described the role of an established non-profit program and coaches in assisting her to remain involved once she discovered her throwing ability. The non-profit program has resources to facilitate regular sport training sessions, strength and condition sessions, rehabilitative care, assistance with equipment, and interaction with teammates and coaches. Ima described the role of other sports participants as mentors, both in sport and in life. "I see other people and I am like, 'you can do that independently, why can't I? Hey, I don't know how to do this. Help me problem

solve'" (Athlete 17). Levins et al. (2004) found that wheelchair basketball participants recognized that the transition into activities, and back into life in a wheelchair, was greatly influenced by an "insider," someone with experience. Witnessing others with disabilities compete was noted to have influenced participants to get involved. Peer athlete mentors are an important source of sports and physical activity information, and inspiration, for people with physical disabilities (Perrier et al., 2015; Carless et al., 2013). The PI observed peer mentoring on numerous occasions during the World Championships, at practices, and during conversations at meals. For example, one ambulatory athlete is also a collegiate track and field coach. He was often seen and overheard mentoring younger athletes. Likewise, Paralympic veteran April Holmes introduced Natalie Bieule to Paralympic sport, recruited her to participate, and mentored her through her first World Championships (see Figure 4.8).

Figure 4.8. *Example of Peer Mentorship.* Sprinter April Holmes Recruited and Mentored thrower Natalie Bieule through her first World Championships.

Related to the influence of others was the aspect of social exchanges during these shared experiences, including travel. The camaraderie that was established was often built around shared humor unique to the disability culture, and which in any other setting might be stigmatizing. Reoccurring insider jokes regarding potentially sensitive topics such as prosthetic issues, bowel and bladder programs, the ignorance of "able-bodied" individuals, and the like created a positive connection and aided in the establishment of close interpersonal bonds within the team. In essence, the team members had fun, often at their own expense, which contributed to the team culture, and served as a motivator for continued participation. Fun, and these shared experiences of humor related to aspects of disability, have been cited by others as a facilitator to participation (Carless et al., 2013; Verschuren et al., 2012).

Negative Aspects of Sport Participation

The positive influences of sport within this team were noted, but as with traditional sport, there can be negative aspects of participation as well. While previously not considered by the primary investigator, several negative aspects associated with sport participation were observed including sport and non-sport related injuries, illnesses (associated with travel, dehydration, food related issues due to improper labelling), and transportation issues. Some of these aspects were also noted as barriers, including the cost of transportation. While athletes who used wheelchairs did not talk about transportation issues in their daily lives at home, several issues were observed while traveling abroad: (a) the loss of racing and day chairs by the airlines, (b) damage to racing chairs by the airlines, (c) seclusion of wheelchair uses in inaccessible rooms/facilities during layovers (without access to

restrooms or refreshments), (d) mishandling of team members by airport staff during transport in aisle chairs and in transferring, and (e) invasive security searches at the airport. Athletes and staff alike reported that these incidences ranged from being an "inconvenience" to "demoralizing."

These incidents are not isolated to teams traveling with equipment. The U.S. Department of Transportation submits a yearly report to the U.S. Congress summarizing the air travel-related complaints of discrimination or lack of accessibility, by passengers with disabilities. Of the submitted complaints, the majority came from wheelchair users. The third leading cause of complaint centered on damage to wheelchairs, with foreign carriers being the most frequently cited (Van Horn, 2007). Despite these reports, team members often found humor in situations with such mantras as, "Don't check your legs!", in fear the prosthetics would be lost or damaged by the airlines, and jokes regarding catheters in the airport (including the potential of leaving a "golden trail" in airports that confined them in secluded areas without appropriate facilities).

While never the goal, a non-sport related fracture resulted in one of the most "inspirational" moments of the 2015 IPC Athletics World Championships when the athlete that suffered the injury decided to compete despite it, and the pain associated with it, and proceeded to medal in his event. Despite his heroic efforts, he, and another athlete that sustained a sport-related injury during the trip, lost a significant amount of independence for a period of time. As reported in the literature, an injury may lead to morbidity and mortality and the athlete could lose training time and work/school time (Ljungqvist et al., 2009; Kjaer et al., 2005). The injury could be a

burden to society, with medical treatment, rehabilitation, and reduced work capacity (Kjaer et al., 2005). For the athlete with a disability, an injury could have more serious consequences compared to an able-bodied athlete, including problems with activities of daily living and mobility concerns (Vanlandewijck & Thompson, 2011). In this population, the potential injury risk and the potential for loss of independence must be discussed to allow participants to make well-informed decisions about their participation in an autonomous manner (Blauwet, Greenfield, Ham, Spill, & Mukherjee, 2015).

Conclusion

In examining the culture of the U.S. Paralympic Track and Field team, the power of sport in team members' lives, and the barriers and facilitators to participation, four major themes were derived from the data analysis to describe the experience of belonging to the team. The barriers and facilitators to Paralympic sport participation in the United States appears consistent with published studies from the United Kingdom (Deans, Burns, McGarry, Murrary, & Mutrie, 2012), the Netherlands (Bragaru et al., 2013; Jaarsma et al., 2014), and Lithuania (Skucas, 2013).
Many physical and psychosocial benefits of sport participation were observed in this study despite the plethora of barriers to becoming and staying involved in adaptive sports. While team members pointed out some facilitators, avenues to enhance these and identify additional ones would serve to assist others in becoming involved in the future.

Some negative aspects were observed with participation, including injuries and illnesses, which require staff to educate athletes of the potential risk to minimize

it, to assist in the management of negative consequences, and to allow athletes the autonomy to make their own well-informed decisions regarding participation and the potential risk versus the reward. The right to autonomously direct their life choices, including the acceptance of consequences related to those choices, is a critical element of self-actualization, which is tied to autonomy in the self-determination theory (Ryan & Deci, 2000), and the human rights promise. Likewise, education surrounding doping is paramount as the rewards related to winning have progressively increased within Paralympic sports, which could serve as a motivator to sacrifice health for Paralympic glory and the potential financial gain associated with victory (Taylor, 2016).

Another negative aspect that resonated involved issues surrounding air travel. While airlines submit yearly reports to policy makers and some organizations (such as airlines and hotel chains) complete market studies relating to the economic opportunity for businesses who serve and market to people with disabilities (Van Horn, 2007), additional awareness and advocacy for the rights of people with disabilities in regards to travel are needed. Some, like Olympic gold medalist Amy Van Dyken-Rouen after a “humiliating” encounter with security, have used the social media platform to successfully make their voices heard (Chasmar, 2016).

Given the reports provided by participants in this study, and previous studies (Levins et al., 2004; Carpenter, 1994; Taylor & McGruder, 1996), it may be important for rehabilitation professionals to re-examine their own attitudes regarding the abilities and potential of those with disabilities to have a more positive influence on their long-term outcomes. As discussed by Angela in this feasibility study and Deans

et al. (2012), the rehabilitation environment plays a role in helping people with disabilities to overcome fears and anxieties with regards to physical activity and sport. This role may be executed within formal rehabilitation environments, as reported by Angela during her internship, or in partnership with others in the community, including recreational therapists and local adaptive sports programs (Verschuren et al., 2012).

Limitations and the Need for Future Research

While participant observations supplemented by media stories, social media posts, and two in-depth interviews provided a wealth of data toward our understanding of the culture of the team and the issues within it, the phenomena merits a larger in-depth investigation beyond this feasibility study, across the track and field classifications (e.g., visually impaired, cognitively impaired, short stature, limb deficiencies, and neurological impairments). Interviewing team members in the additional classes, and further examining this data over a longer period of time, should lead to theoretical saturation. While further examining the experiences of this broader base of athletes, we intend to further explore the impact of the classification process and the role of medical providers in facilitating elite adaptive sport participation as these topics appear important to members of this cultural group.

As the PI observed the team, it became apparent that the team as a whole had its shared customs and traditions, such as the insider humor. There were also obvious sub-cultures within the group, which would be expected in a group this large. Due to the abbreviated feasibility study timeframe, we were unable to develop sub-culture themes. However, sub-cultures appeared to exist within the Paralympic track and

field team consistent with traditional track and field, between such groups as the track athletes and the field athletes, especially throwers. An additional layer was also apparent between the ambulatory and the non-ambulatory athletes, and to an extent between their coaches. These sub-cultures, and the inability to construct robust themes related to them, are an illustration of our inability to reach theoretical saturation within this feasibility study. The PI and co-investigators intend to further explore the experiential differences noted between ambulatory and non-ambulatory athletes, and the interactions between these groups.

While participant observation is the hallmark of ethnography and that method will continue into the larger study, grounded theory methods will be used to assist in triangulating findings. Drawing from grounded theory methods of data analysis, a constant comparative approach to analyzing the data will continue to be used for the larger study (Glaser & Strauss, 1999). Therefore, emerging categories will be developed and continually compared with data across and within datasets. These will be further developed, refined, and compared to produce themes that offer a clear understanding of the experience of being an elite track and field athlete with a disability, thus providing the athletes with a voice.

Finally, this project began with observations of and an interview with, an individual that had experienced both the horror of waking up unable to move, and the joy of rediscovering sports and an independent life through adaptive sports programs. We aim to follow her journey, along with her teammates' journeys, through the Paralympic Games in Rio de Janeiro, Brazil.

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CHAPTER V

THE SOCIALIZATION PROCESS OF PARALYMPIC TRACK AND FIELD ATHLETES AND THE ROLE OF HUMOR: AN ETHNOGRAPHIC STUDY

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Abstract

The purpose of this study was to describe the experiences of the U.S. Paralympic Track and Field athletes in relation to their socialization into elite adaptive sport. U.S. Paralympic Track and Field hopefuls for the Rio Paralympics [(athletes = 103), staff (*n* = 26), family (*n* = 4), and classifiers (*n* = 3)] were observed and select participants interviewed. Observational notes, transcribed interviews, social media, and media coverage were analyzed utilizing feminist theory to frame this ethnographic study. Study rigor was established through a variety of methods, including triangulation. Common themes related to socialization included aspects related to shared training environments; shared experiences, including traveling and humor; and integration into able-bodied training environments and events. The athletes used sport and humor as a form of resistance against disablism, leading to a sense of empowerment.

Keywords: adaptive sport; feminist model; empowerment

Introduction

Sport socialization is how an individual acquires attitudes, values, knowledge and behaviors associated with consumption of sport (Mullin, Hardy, & Sutton, 2000), or how the person acquires a group's culture, in this case, centered around sport. A group's shared values, beliefs, ideologies, norms, artifacts, and social behaviors are its culture (Williams & Taylor, 1994). When considering the research regarding the culture of a sports team, it is important to distinguish between socialization *into* the sport versus socialization *via* sport. Specifically, socialization *into* sport refers to the introduction to the sport, usually through various social agents, such as parents, teachers, coaches, and peers (Greendorfer, 2002). Socialization *via* sport is the process through which the traits, skills, and values associated with a group culture are assumed by a member as a consequence of participation. Ideally, these characteristics would be positive ones, such as the building of character, discipline, preparation for competition in life, the facilitation of moral development and good citizenship, and the cultivation of desirable personality traits. The goal would also be for these characteristics to be transferable to other contexts in life such as school and work (Leonard II, 1980).

In an examination of the socialization of women with physical disabilities into elite sport, Ruddell and Shinew (2006) reported the influence of friends, coaches, sport clubs, and hospitals in the socialization process into wheelchair basketball. They hypothesized that the process may be different for wheelchair racers, likely due to the fewer number of collegiate programs available for participation. Ruddell and Shinew also reported that the process is different for those without physical

impairments as peers and coaches tend to be the most important source of information for those with impairments, whereas television and popular media aids the socialization process in traditional sports. In Paralympic sports, a new team member may be integrated into the group through mentorship from existing team members, a shared sense of humor within the group, and through experience and exposure to the team and elite competition (Ruddell & Shinew, 2006).

In attempting to assess the training behaviors and attitudes of elite wheelchair road racers, Hedrick, Morse, and Figoni (1988) briefly touched on the manner in which elite wheelchair racers in the United States acquire information about their sport, and are thus socialized through it. The authors reported that most gains are made through peer-to-peer interactions, often times at competitions due to the geographical dispersion of the racers. Williams and Taylor (1994) stated that peers are the primary socializing agent in wheelchair road racing in the United Kingdom.

In a study of the meaning of participation in elite wheelchair basketball for women with physical disabilities, a sense of community existed, which was based on shared experiences, including travel, but perhaps more importantly, on shared experiences with disability (Ashton-Shaeffer, Gibson, Holt, & Williming, 2001b). The elite wheelchair basketball players viewed the sport as more than a competition; they "saw sport as a supportive community rather than an aggressive environment in spite of the elite, world-class level of play" (Ashton-Shaeffer et al., 2001b). This community, built upon shared experiences, assists the participant in developing a sense of physical and emotional empowerment that extends beyond the boundaries of

sport and into participants' personal and professional lives (Ashton-Shaeffer et al., 2001b).

Thus, sport could provide a space where participants have the power to deconstruct, negotiate, and resist power structures in society (Green, 1988; Wearing, 1994). It has been suggested that a feminist model of sport is achieved when the aim is not to dominate through competition, but to challenge each other in a supportive environment, building a sense of community (Theberge, 1987) through not only shared sport experiences, but also shared disability experiences. Interestingly, fun and shared experiences of humor related to aspects of disability have been cited by others as a facilitator and motivator of sport participation (Carless, Peacock, McKenna, & Cooke, 2013; Verschuren, Wiart, Hermans, & Ketelaar, 2012). Sports activities provide the opportunities for participants to experience their bodies as strong and powerful (Theberge, 1985), and empowered (Ashton-Shaeffer, Gibson, Autry, & Hanson, 2001a).

A feminist theoretical framework is believed to draw attention to the pervasiveness of gender divisions in social life and to recognize the relatedness of gender to other forms of domination (e.g., disability, race, age), and has the potential to critique and transform prevailing social conditions (Hall, 1995). Foucault (1979, p. 95) postulated, "where there is power, there is resistance" and that because power is invested in everyday practices at the micro level, such as participating in sport, it is possible through a "process of localized struggles" to resist subjectification (Foucault, 1980). Foucault (1988) suggested that individuals can transform themselves "in order to attain a certain state of happiness, purity, wisdom, perfection or immortality" (p.

18). While the influence of social structures is recognized, individuals have some power to negotiate and resist these forces, and are thus regarded as active rather than passive individuals (Green, 1988), with the power to resist oppressive cultural forces (Wearing, 1994).

The purpose of this article was to examine the socialization process into and through elite adaptive sport participation through the lens of a feminist model. Several studies have examined the socialization process into and through adaptive sports, but few have examined the factors at play at the elite level. Even those few studies continued to focus on the introduction into initial sport (Roux, 2012; Ruddell & Shinew, 2006), not the transition into an elite sporting status as is the focus for our ethnographic study of the U.S. Paralympic Track and Field team.

Methods

Ethnography is a form of qualitative research that was originally developed out of anthropology and involves a holistic approach to the study of culture (Creswell, 2013). Researchers immerse themselves into the culture, make observations, and attempt to understand the participant's viewpoints. There is a distinct culture within the Paralympic movement, making ethnography an appropriate methodology. Existing literature was used to assist in the development of the interview questions and the initial thematic map. Phenomenology focuses on the commonality of a lived experience within a particular group to arrive at a description of the nature of a given experience (Creswell, 2013). The meaning of socialization is a specific circumstance within the Paralympic culture making phenomenology pertinent to this study. The use of ethnographic and phenomenological methods analyzed through the lens of

feminist theory allowed us to examine the participant's experiences and perspectives related to the socialization process into and through elite adaptive sport participation with an eye towards their resistance to certain social and cultural forces.

The methods for this phenomenologically informed ethnographic study, including the participants, data collection, and data analysis, evolved from the previously described feasibility study, with a few exceptions. The feasibility study only included observations from one event, the 2015 IPC World Championships in Doha, Qatar, associated news reports and social media posts, and two interviews (one athlete and one coach). After gaining Institutional Review Board approval through Texas Woman's University, the study was expanded to include all athletes and staff that were identified as Rio 2016 Paralympic hopefuls, through their involvement at one of the U.S. Paralympic Track and Field sponsored events. A total of 136 people, including athletes (n = 103), coaches and staff (n = 26), family members (n = 4), and classifiers (n = 3) consented to participate and were thus observed and/or interviewed for the purposes of the global ethnographic study. These participants' social media accounts (Facebook, Twitter, and Instagram) were also followed to track themes relevant to this research. The Internet was searched for relevant news articles and televised stories for future analysis.

The observational data of the United States Paralympic Track and Field team was collected from the 2015 International Paralympic Committee (IPC) World Championships through six weeks after the 2016 Paralympic Games in Rio de Janeiro, which included four team training camps/training facilities and six competitions. The events ranged between 4 and 23 days.

Purposeful snowball sampling was used to select representative participants for the interviews based on predetermined criteria: their ability to (a) reflect on their involvement on the team, (b) reflect on their involvement in the Paralympic movement, and (c) represent the spectrum of the athletes and disabilities common to the team, including gender and minority status, sport events, military status, disability type, and congenital versus acquired impairments. Of the 42 interviews, 24 were athletes, 11 were coaches or staff, four were family members, and three were IPC international classifiers.

Of the 42 interviews, the primary investigator (PI) conducted 30 in person. The 12 interviews conducted via telephone or videoconference were primarily with staff (n = 5) and classifiers (n = 3), due to scheduling conflicts during the camps, or events, prohibiting completion of them in person. The PI conducted the other telephone interviews with a family member (n = 1) and athletes (n = 3), due to an inability to schedule during events.

The PI served as a member of the volunteer medical staff as a physical therapist and athletic trainer. This position allowed the PI to be present for training sessions, as well as on- and off-field events such as team travel, meals, treatment sessions, and team social events. Participant observations were made of the interactions with the team and of the general atmosphere at these events. Field notes were made and recorded during and immediately after team activities. These notes contained observations of the setting, session activities, paraphrases of conversations, and the researcher's thoughts regarding participation (Emerson, Fritz, & Shaw, 2011). The PI kept a research log.

In-depth interviews were conducted with the purpose of understanding and adding meaning to the experiences and events of the participants' lives. An interview guide (Creswell, 2013) was developed collaboratively with two coaches, a doctoral-trained athlete and researcher, and one co-investigator (see Appendix A). Each interview was digitally recorded and transcribed verbatim. Participants are allowed to review their transcript and suggest changes.

The social media accounts of all observed team members were tracked for the duration of the study. For the purposes of this study, posts that illustrated themes common in the literature to the socialization process were collected for coding and analysis. Online articles, interviews, and op-eds that were published in relation to the socialization process were also considered. Social media and media coverage are increasingly being used by medical researchers in ethnographic studies (Gibson et al., 2016). Paralympic team members, outside of team camps and events, are geographically dispersed. However, social media allows them to continue to interact with each other, family, friends, sponsors, and others. Therefore, monitoring social media allowed the research team to conduct "online observations" between events and training camps and this medium serves as a data source for this ethnographic study. Media coverage, obtained by Internet searches for the team members, was used to further supplement data and aid in triangulation of sources.

Qualitative data analysis seeks to identify themes and is usually carried out concurrently with data collection. This approach relies on the data to focus the research questions, but cyclical comparison and analysis allows for continual refinement. Details of this method in a linear fashion were published elsewhere (see

Table 4.3). For this study, we used existing research in the sport socialization process (Ashton-Shaeffer, Gibson, Autry, & Hanson, 2001a; Greendorfer, 2002; Hederick et al., 1988; Ruddell & Shinew, 2006) to assist in question and theme development. We also analyzed the themes through the lens of feminist theory (Hall, 1995; Foucault, 1979). This theory was applied and framed the analysis of the data because of our belief in the power of sport to transform individuals; to empower individuals and foster autonomy in sport, and in life.

Data from all sources were uploaded into NVivo 11 software (Qualitative Solutions and Researching International, 2015) and initially coded. The materials were initially coded based on relevant and related themes from the literature to help organize and interpret the information. The research team used the heuristics approach to code the data. Heuristics are code words that are used to flag similar points and emerging themes within the data. This approach helps researchers in organizing data in the same subject area (van Manen, 1990). This technique is used to make sense of written text and allow the participants' data to tell their story.

Themes were analyzed, and an attempt was made to confirm them through triangulation across data sources using a constant comparative method. The next phase began the search for additional themes and sub-themes within the coded data. If data could not be categorized based on previous research, a new code was given. A thematic map was drawn to visually determine the patterns and relationships between each theme for this study (see Figure 5.1). Themes were then re-read to ensure

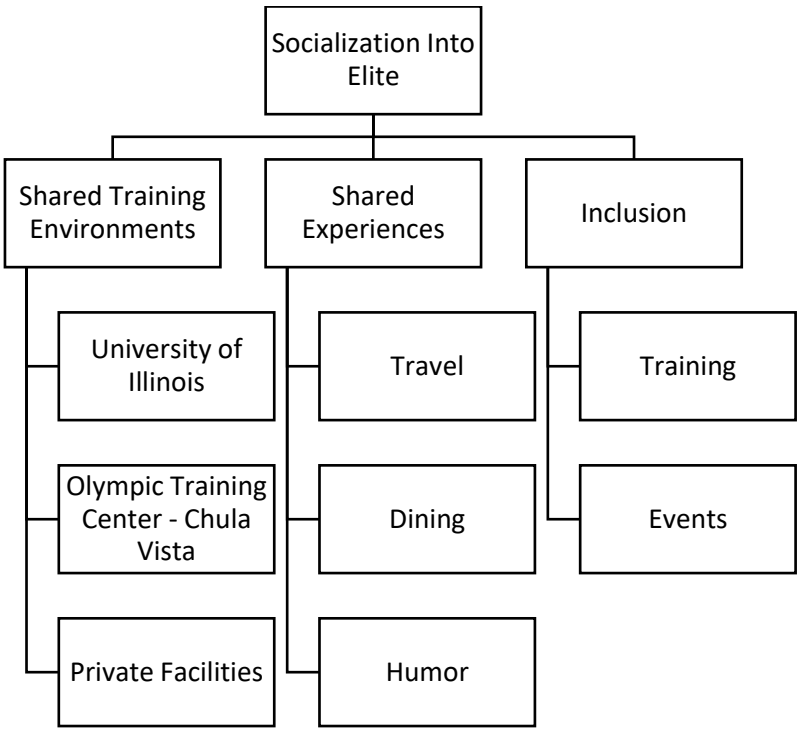

Figure 5.1. *Thematic Map of Socialization Results*

they were related to coded data and that no data were overlooked, while further defining the themes to fully understand each one.

Results

While analyzing the data, certain common themes emerged related to the socialization into and through elite, Paralympic sport participation. Many of our findings were consistent with previous research examining elite sport socialization. These themes included aspects related to shared training environments; shared experiences, included traveling and humor; and integration into able-bodied training environments and events, and are represented in the Culture Wheel Diagram (see Figure 5.2).

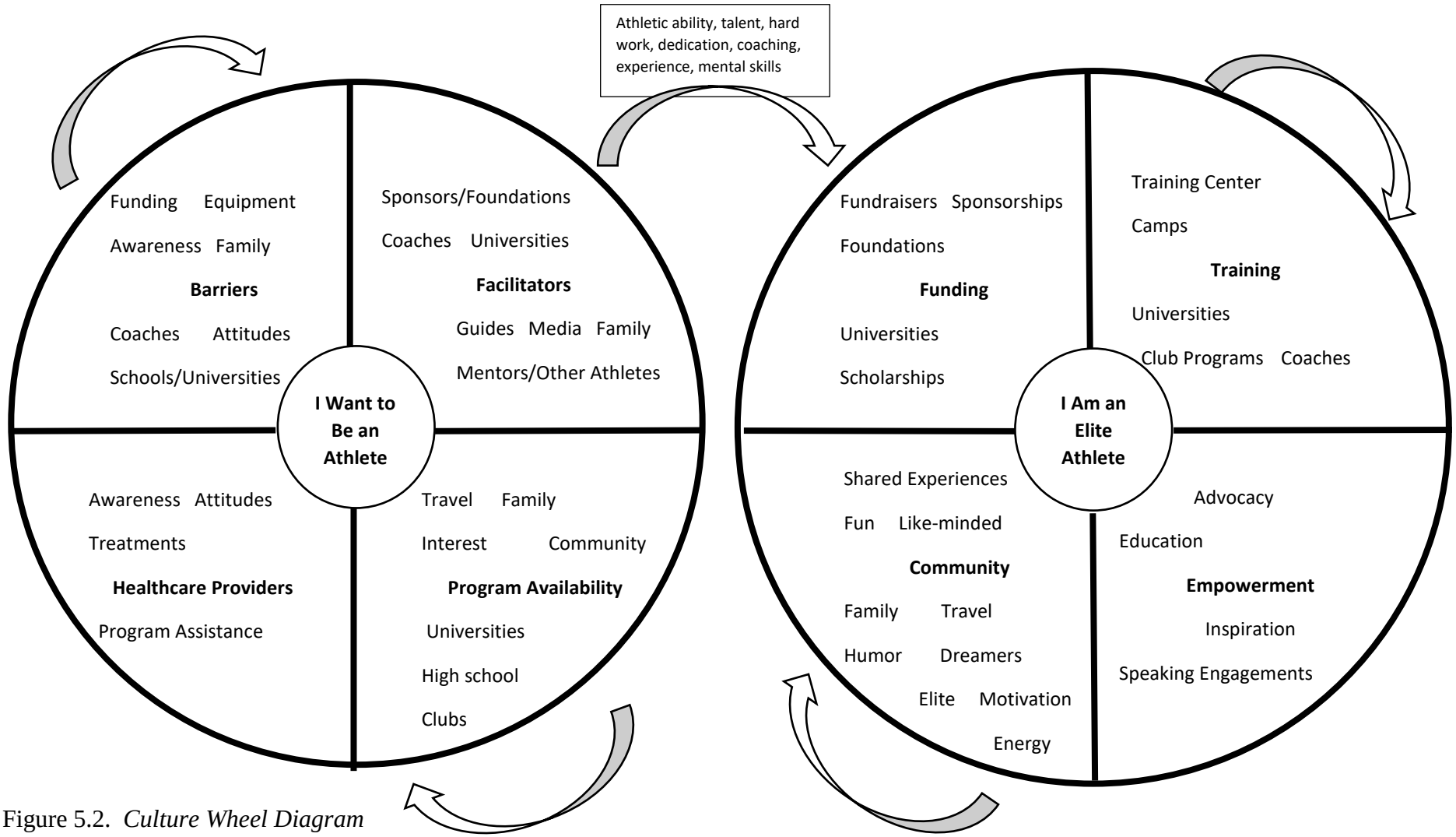

Figure 5.2. *Culture Wheel Diagram*

The usual transition for youth to elite athlete in traditional track and field is from youth club and school programs to college and university programs to elite and professional coaching, the cost of which is usually covered by sponsors. Once most adaptive sport athletes matriculate through their youth programs, few opportunities exist for advancement to ease the transition to elite status. While not many university programs exist for elite competitors in adaptive sports, there are a few that stand out and contribute significantly to the movement. In the U.S., the University of Illinois serves as the U.S. Paralympic Wheelchair Racing training site. Adam Bleakney leads the University of Illinois' wheelchair track and field program. Bleakney is a Paralympic silver medalist and a four-time U.S. Paralympian (Bourgeois, 2014). He has mentored numerous Paralympians as the head coach of the Illinois program. At the Rio Paralympic Games alone, where Bleakney also served as a U.S. team coach, the University's program produced seventeen medals.

A hallmark of elite adaptive sport is medaling at a Paralympic Games. While medaling independently is a great accomplishment, more people take notice when an individual country sweeps the podium. This feat was accomplished in both the 1500-m and 5000-m races by a group of female University of Illinois wheelchair racers at the Rio Paralympic Games, likely due in part to pre-race strategizing with the University of Illinois and U.S. wheelchair racing coach, Adam Bleakney (see Figure 5.3). The execution of the strategy illustrates the benefit of working in a close, cohesive group, leading to elite status within the sport. This group cohesion was built in the shared training environment at the University of Illinois.

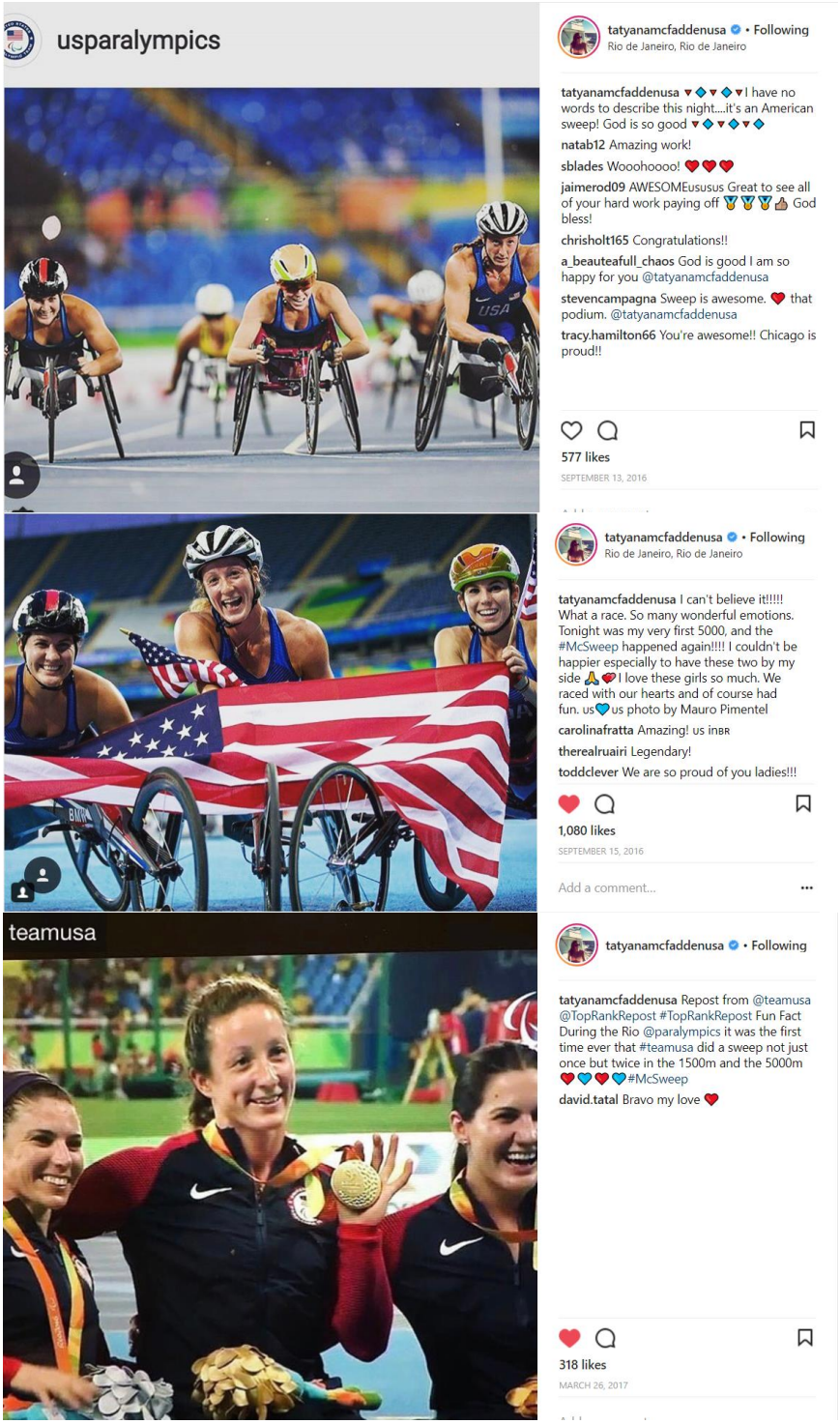

Figure 5.3. *Example of Group Cohesion in a Coacting Sport – 1500 and 5000-m winners*

While the wheelchair racers have the University of Illinois U.S. Paralympic Wheelchair Racing training site, no other similar opportunities exist for Paralympic Track and Field athletes, outside of limited opportunities to be in residence at the Olympic training center in Chula Vista, California. Two athletes competed on traditional collegiate teams, one participants as an ambulatory thrower and the other as an ambulatory sprinter, but such opportunities are rare.

Similar to the influence of university programs in the sport socialization process, the social exchanges that occur during shared experiences, such as travel, have a large impact on the socialization process through sport. During international travel for events, the team often arranged group outings. For example, in Qatar, the team had the option to go to the beach and ride camels and jet skis or to go to the local market, called the souq. At the IPC events, meals were shared by all teams in a large dining hall. It was not uncommon to see the U.S. team dining with competitors from other countries. A prime example was one of the U.S seated throwers who became injured while serving as a Marine in the Middle East; he spent a lot of time with an Iranian seated thrower (see Figure 5.4). They quickly became friends through competition, with the American athlete inviting the Iranian to meet and spend time with his family (see Figure 5.4).

Figure 5.4. *U.S. and Iranian Seated Throwers*

The camaraderie established on the U.S. Paralympic team was often built around shared humor unique to the disability culture, and which in any other setting might be stigmatizing. Reoccurring "insider" jokes regarding potentially sensitive topics such as prosthetic issues, bowel and bladder programs, the ignorance of *able-bodies* (individuals without impairments), and the like created a positive connection and aided in the establishment of close interpersonal bonds within the team. In essence, the team members had fun, often at their own expense, which contributed to the team culture and served as a motivator for continued participation.

Some of the insider jokes related to body image among the female wheelchair racers. When the wheelchair racers at the University of Illinois received their team issued gear, they were very excited sorting through it until they reached the team issued khaki shorts. They all stated, with a variety of jokes, that there was no way they would wear the shorts due to the short inseam and their seated posture and offered to give the shorts away. At team processing before traveling to the Games, several female athletes became emotional because it was the first time clothes had been designed, or custom fitted, for them. The issue of clothing fit, and body image, in the adaptive sport population has been described by others (Galli, Reel, Henderson, & Detling, 2016).

The "safe" atmosphere that the setting provides allows individuals the opportunity to explore their own identities, including their own body image. Because of mobility issues due to physical impairments, maintaining a desirable weight is often challenging (Crane, Little, & Burns, 2011), but team members have an environment in which they can safely discuss the issues they are having in hopes of finding solutions among their peers. It is also an environment in which they can make light of the situation through shared experiences and humor. Likewise, many of the athletes with amputations made jokes related to their prosthetics and residual limbs. For instance, they stated that they "now had spares" if something broke which is consistent with other reports (Galli et al., 2016).

The shared experiences for the athletes with quadriplegia often revolved around the rehabilitation community's focus on the restoration of walking, to the exasperation of many of the athletes. One athlete stated that the restoration of walking was not even in his top three of functions he wished he had back. Others at the dinner table laughed when

he mentioned his three included bowel function, bladder function, and sweating so he could go outside and "not die" (in the heat and humidity). The loss of bowel and bladder control is obviously a serious concern for those with spinal cord injury (SCI), including the loss of privacy that often comes with it (Siebers, 2001). However, in this team atmosphere, bowel and bladder control, and function is a topic that is often discussed in a humorous manner, likely to help relieve some of the stress of dealing it with it. This included the numerous jokes surrounding the potential of leaving "a golden trail" through airports that discriminated against those who used wheelchairs. This type of humor can be considered a form of resistance or relief humor as described by Lynch (2002) and Meyer (2000). This same group of athletes and staff, that prides itself on professional presentation, made these jokes as a form of resistance to how society discriminates against them and as a potential way of relieving the stress of the upcoming travel issues.

While many theories exist regarding humor, incongruity theory was on display following a team meeting with a sport psychologist in the lead up to the Paralympic Games. With incongruity theory, humor occurs when something is inconsistent with an expected environment (Lynch, 2002) and involves the combination of two or more elements that one would not perceive as belonging together (Dewitte & Verguts, 2001). Following the meeting, one of the youngest members of the team, initiated a "fight" with one of the older, seasoned members of the team (see Figure 5.5). It was a scenario resembling a little sister pestering a much larger and older brother. Both were ambulatory throwers: the "older brother" has a congenital transtibial amputation and the

Figure 5.5. *Example of Incongruity Humor in Paralympic Sport*

"little sister" is a dwarf. She initiated the "fight" by trying to "take out his legs." At first, he just tried to keep her at bay by sticking one arm out to ward her off. Nevertheless, she persisted. After a while, he simply picked her up and pretended to body slam her, World Wrestling Entertainment (WWE) style. In the video

(https://www.instagram.com/p/BP31eWfgQm3/), that was sure to be made in this digital age, everyone can be seen or heard laughing at the scenario, including the team's high performance director. The incongruity in age, size, and physical impairment helped to create the humor but the scenario only serves to illustrate the types of relationships and bonds created by these types of shared experiences.

Humor can be used to socialize an "outsider" into the group as an affiliative function (Lynch, 2002). During the PIs first experience with the team, a scenario occurred that ended with a prankster's friend saying, "Don't worry about him, he messes with everyone." At a pre-Paralympic games camp, similar scenarios were observed between an able-bodied ambulatory running coach and a young athlete with a physical impairment. The PI, who was familiar with the coach but not the new, young athlete, became concerned that the teasing was too much. The PI asked the athlete, who quickly responded, "Oh, no! I love it! He just treats me like he does everyone else. No, I love it…I love being around him and being treated like everyone else!" (including the coach's Olympic athletes) (Athlete 5). Similarly, upon reflecting on her first travel experience with the team, a team physician stated that they were at an open air restaurant in Europe when they heard an accident outside. She was summoned and upon returning to the restaurant "someone hollered out, 'Hey doc, did we get a new Paralympian?!'" (Staff 3).

Humor can also be self-defeating, which includes the individual user attempting to say or do funny things at their own expense. This type of humor was common within the team. An example occurred after an athlete, a seated thrower who has had no motor control below the waist for over a decade, fractured his lower leg in non-sport related

incident. He was taken to the emergency room where a local doctor gave him his x-ray results. After explaining the diagnosis, treatment plan, and prognosis, the local physician asked the athlete if he had any questions. The athlete asked the doctor, "So doc, will I ever walk again?" In situations such as this, athletes often use the humor to relieve some of the stress associated with the situation.

Paralympic Track and Field is the most diverse Paralympic sport in terms of the number and type of impairments included. While the group as a whole was cohesive, they did use certain terms as a way to differentiate smaller groups within the whole that some may see as humorous (Meyer, 2000). The terms included *wheelies* (wheelchair racers), *amps* (athletes with amputations), *stiffies* (athletes with joint fusions or limited range of motion), *quad hands* (athletes with quadriplegia), and *ABs* (able-bodied people). Groups are also differentiated through shared and unshared experiences such as the use of catheters. At a team meeting, the high performance director was discussing the drug testing process during which time she stated that athletes needed to be sure to bring their own catheters. An athlete with an upper extremity limb deficiency asked his coach, "What's a catheter?" After the meeting, two coaches borrowed a catheter from a wheelchair racer and took it to the questioning athlete. They told him he had to use one for drug testing. His facial expression upon realizing what it was, and that he might have to use it, caused the room to erupt in laughter.

At times, differentiation humor may serve to divide groups in a negative way, to exclude. Within this team, the differentiation humor was only observed to be used in the context of those with physical disabilities. It was never used in the context of those with

cognitive impairments, or to serve to exclude those athletes. In all observed instances, the cognitively impaired athletes were initially socialized into the group through supportive and positive means, with the individual athlete eventually joining in the humor at their own pace. A prime example of this occurred at a pre-Games camp and competition. The young son of an Olympic athlete at the training center had asked an athlete with a traumatic upper extremity amputation how she had lost her arm. He had been curiously studying her from a distance for some time. She jokingly convinced him that she had lost the arm in a shark attack. The next day, at a competition, the high performance director introduced a potential new athlete to the team. The new athlete would compete as a T20 (a person with a cognitive impairment). The new athlete also studied the athlete with the amputation and soon asked, "What happened to your arm?" Instead of teasing this new athlete like she had the young boy, she told the new athlete the true story, who responded, "I'm so sorry that happened to you." The same people, athletes and staff alike, who had witnessed and laughed at the joke with the young boy were touched by the sincerity of the latest exchange.

Socialization at the elite level also includes aspects of personal health and hygiene that those in the elite adaptive sport community want projected. For example, a new member of the wheelchair racing team did not wear shoes. For the new team member, there had never been a physical need to wear shoes. However, the established members of the team and staff felt that all of the athletes needed to portray themselves as the professionals that they are. Initial attempts to get the athlete to wear shoes were unsuccessful because the reasoning was not explained. But when the reason was

explained to the athlete, the athlete understood and immediately complied. Similarly, an occupational therapist who serves as a wheelchair racing coach uses a child's desire to participate on her youth teams as motivation to incorporate appropriate bowel and bladder programs.

Part of the socialization process into elite sport involves inclusion with traditional, able-bodied athletes. One female athlete with an upper extremity limb deficiency stated,

> The way that I live my life just on a day-to-day basis is so different (from before), like I don't think that I believed that I was a professional athlete before. And now you know, once you start living a certain way…I am training with all the people that run in the Diamond League, you know? So I am training with the big dogs, and they treat me as one of their own, and I am doing the same work out as them, and so it is just kind of like who I am becoming. (Athlete 14)

Similarly, an athlete with a visual impairment described the influence of training with Olympic athletes at the Olympic Training Center in Chula Vista,

> All these Olympic athletes here they're inspirational to me and it's just like, ok I don't care if you have a disability or you don't have a disability ya know… everyday you're putting that commitment in to get up and go and make something of yourself. (Athlete 4)

Many of the Paralympic athletes across track and field disciplines regularly described on their social media accounts different interactions they had with established Olympic athletes that served as mentors in some capacity, including traversing the media and sponsorship landscape. Likewise, the Paralympic athletes were often observed at camps and events discussing with each other issues surrounding sponsorship, finding an agent, media preparation, speaking engagements, social media, and advocacy efforts, all activities that come with being an elite or professional athlete.

While training with other elite athletes helps to establish a level of professionalism, competing in the same events only extends the Paralympic movement further. One wheelchair racer stated that:

> being part of the Abbott World Series (road marathons) for the first time is huge for us, it is not only huge for sponsorships but we can get sponsorships outside of the Paralympics so that is really important as well, and that will help increase paychecks a little bit. But it will also help recruit athletes as well. (Athlete 22)

Others reported that this same series gave them access to other professional runners who they could engage and exchange ideas with.

Many of our findings of socialization into and through elite adaptive sport were similar to previous findings in studies examining socialization into adaptive sport and into elite able-bodied sport. The primary difference in elite adaptive sport is the magnification of some of the barriers to bridging the gap between lower levels of sport and elite status. For example, all elite athletes incur a financial cost for participation to cover the expenses of training and travel. However, the adaptive athlete may also incur the cost of a running specific prosthesis or a racing chair. Many elite athletes move across the country to work with the best coaches but adaptive sport athletes have fewer coaches and thus cities to choose from. Most able-bodied elite athletes make this move following a four to five year period at a university, which is usually financially supported by the institution. For adaptive sport athletes, there are limited opportunities at the university level. One athlete had a "rule" to explain it, "There's a rule of three. It costs three times as much, it takes three times longer, and it's three times harder…" (Athlete 17).

Discussion

In socializing individuals into and through sport, many environmental influences (e.g., geographic conditions, culture norms/values, sport opportunity) and individual influences (e.g., stage in life cycle, perception, motivation, and physical characteristics) exist (Mullin et al., 2000) (see Figure 5.2). One common influence to socialization is actual and perceived barriers. Barriers to socialization into sport for those with disabilities have been described in the literature and include social stigmas and learned roles associated with stigmas (Hedrick, 1979; McPherson, 1983). Both must be overcome to become involved in sport and to eventually become an elite competitor. A variety of agents and agencies can assist the individual in overcoming these barriers, including family, school, peer group, community, and therapists (e.g., physical, occupational, and recreational). Traditionally, a facilitator in the transition from high school sport to more elite sport involves a stop at a university.

Our participants stated that outside of the U.S. Paralympic Wheelchair Racing Training Center at the University of Illinois, there are few track and field opportunities at the university level. Ruddell and Shinew (2006) reported the lack of opportunity at colleges and universities for elite sporting opportunities for those with physical impairments after these athletes have matriculated from high school and community programs. For those who did reach elite status, college programs played a large role in the transition and included agents such as coaches and teammates, and agencies such as disability student service centers and elite camps (see Figure 5.2). Ruddell and Shinew

stated that it often “takes a village,” not just one agent or agency, working together to facilitate the socialization process.

While studies examining the socialization of Paralympic athletes via their sport usually examine socialization within the context of athletes with disabilities, Patrick and Bignall (1984) also examined the integration of wheelchair road racers with able-bodied athletes. For wheelchair marathoners, racing affords access to a social world of shared meaning and goals with able-bodied athletes and serves as a vehicle for integration not seen in segregated wheelchair sports (Patrick & Bignall, 1984). This integration and shared meaning serves to develop feelings of freedom and competence, contributing to independence and self-actualization. Like the subjects in the Patrick and Bignall study, our participants noticed the importance of being included in the marathons. Similarly, the ability for some adaptive sport athletes to train with able-bodied athletes allowed one athlete to “feel accepted and welcomed and a part of the scenario” (Galli et al. 2016, p. 10). Many of the ambulatory athletes in our study train with Olympic and professional runners at the Olympic Training Center and at private facilities (Figure 5.2). Our athletes reported the positive influence of these arrangements, ranging from the level of coaching to help with finding agents and sponsors.

Another aspect of sport socialization is the concept of team cohesion. Cohesion is the sense of togetherness, team spirit, closeness, teamwork, and team unity and is considered an important determinant of group success (Williams & Widmeyer, 1991). In interacting sports (e.g., basketball), success depends upon combining players’ diverse skills. In coacting sports (e.g., golf, track and field), participants independently perform

the same skill, or their individual events, and team success is determined by the sum of the individual performances (Williams & Widmeyer, 1991). Coordination of play during competition is not normally relevant in coacting sports, but athletes in our study did communicate with one another during practices and before and after events and this communication can be seen as a form of coordination. For example, team members may give one another helpful tips about technique or strategy (Williams & Widmeyer, 1991). In all sports, team cohesion plays a role in motivation to participate and in performance outcomes. The U.S. team members were often observed to be sharing training and competition tips, but the strategizing had the most profound benefit in the two women's wheelchair racing events in which the three University of Illinois athletes swept the podium both times (see Figure 5.2).

Given the military roots of the Paralympic movement, and the current use of adaptive sport programs in the rehabilitation of wounded military service members, the U.S. Paralympic team has several members with military backgrounds. The U.S. military goes to great lengths to unify its groups through a variety of activities in an effort to build stronger group cohesion. Siebold (2007) stated that "in the military, cohesion, interpersonal trust, and teamwork are built through many experiences, including training and drills." In interpreting Siebold's work, King (2007) stated that it is an "essence…a distinctive emotional bond that arises in dense social relations" (p. 639). King went on to say that cohesion, both social and task, develops and endures when "parties engage in a series of exchanges in which they might talk, laugh, cook, eat, drink, work, sleep, and travel together" (p. 641). These exchanges are the essence of the military life and the

sporting life. Athletes on any team, including this track and field team, have many shared experiences that result in dense social relationships. For this team, those experiences included extensive travel (up to 23 days) in which they used a variety of forms of public transportation (e.g., city buses, planes), they roomed together (up to 5 in a suite), and ate together (in restaurants, coffee shops, and village dining halls). The athletes, both ambulatory and non-ambulatory, would often train on the same track at the same time and would have to work through the safety logistics. If they were not competing on a given day, they would often come to the track in groups to watch their teammates compete and to cheer them on.

As a type of exchange that promotes stronger group cohesion, talking and laughing during a shared experience is a way in which many researchers indicate that individuals can be unified through shared humor. Humor is defined as a message intended to be interpreted as funny (Lynch, 2002). The message can be verbal or behavioral (Dewitte & Verguts, 2002) and can come in the form of joke, sarcasm, practical jokes, put-downs, or wisecracks. Whether one deems the message humorous depends on the context and the individual's perception (LaFollette & Shanks, 1993). There are many functions of humor, including affiliative, self-enhancing, self-defeating, aggressive (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003), resistance, relief, and differentiation (Lynch, 2002; Meyer, 2000). Positive humor has been shown to reduce anxiety, tension, stress, depression, and loneliness, while improving self-esteem, restoring hope and energy, and providing a sense of empowerment and control (Berk, 2001; Szabo, 2003; Vilaythong, Arnau, Rosen, & Mascaro, 2003). The U.S Paralympic

track and field team uses a variety of forms of humor, but they use it in constructive ways not to tear a teammate down (see Figure 5.2).

Within adaptive sports, some team leaders felt their group's dynamic was strengthened by the diversity of their teammates' disabilities while others felt that the diversity presented a challenge, often related to factors associated with accessibility. However, all of the team leaders felt that social gatherings assisted them in building relationships with their teammates that fostered deep personal relationships. This is not surprising given that social opportunities are often cited as a key motivator for sport participation for adaptive athletes (Wu & Williams, 2001). Despite the largest range of disability classes in Paralympic track and field, the team staff managed to find recreational activities that everyone could participate in if they wished. These social opportunities helped to strengthen relationships forged in practices and at events.

There are different avenues through which sport might enable resistance for those with disabilities, and they include resistance of disability to regain control of their body and resistance to society's perception of the disabled as weak (Ashton-Shaeffer, Gibson, Holt, & Williming, 2001b). By resisting the traditional power structures that oppresses those with disabilities, those who participate in elite adaptive sport may feel empowered. This sense of empowerment may come from their identity as an elite athlete, friendships, travel, overall health and fitness level, purpose in life, and other intrinsic factors. The athletes may also feel empowered because of their ability to support and empower others to resist stereotypes through their influence on, and inspiration of, others with disabilities (Ashton-Shaeffer et al., 2001b). The athletes on the Paralympic Track and Field team

identify as elite athletes, develop friendships on the team, travel, report improved quality of health as athletes, tend to be highly educated, and support each other in their endeavors (see Figure 5.2). Because of their status on the team, they feel empowered to speak to groups about their experiences, including to children and wounded warriors with similar disabilities.

It has been suggested that a feminist model of sport is achieved when the aim is not to dominate through competition, but to challenge each other in a supportive environment, building a sense of community (Theberge, 1987) through not only shared sport experiences but also shared disability experiences. Sport activities provide the opportunity for participants to experience their bodies as strong and powerful (Theberge, 1985), and empowered (Ashton-Shaeffer, Gibson, Autry, & Hanson, 2001a). Our findings support these previous studies. At the Paralympic Games, winning is the primary goal because the athletes are elite athletes and they have invested as many hours training as an Olympic athlete. Despite the pursuit of gold, the athletes often have strong bonds with their teammates and their competitors and are supportive of each other making for friendly competition.

Limitations

While many of the themes observed in this study were similar to previous studies examining socialization into and via elite sport, the context and content were different based on the disability culture as a whole. Traditional track and field athletes usually progress through the ranks from youth athlete to elite, professional through a university based system that is largely not available to adaptive sports athletes. The one program

that is available for wheelchair racers, University of Illinois, has been very successful at producing highly educated, competitive athletes. It is likely that more athletes would find success, and thus be socialized into elite sport if more university-based opportunities existed. Integrating adaptive athletes and events into existing competitions, such as marathons and track and field meets, would further the Paralympic movement by bringing more athletes into the fold and building awareness in society (Patrick & Bignall, 1984; Galli et al., 2016).

Conclusion

Like any group, including sports teams and military groups, relationships and bonds are established that build a culture over time through a variety of shared experiences (e.g., travel, housing, meals) and shared humor. The shared humor, a predominant observation in this study, serves a variety of functions, from initiating a new member into the group to dealing with stressful situations related to discrimination in society. These experiences tend to be a factor in tying an individual to the group for continued enjoyment and participation over time.

While the purpose of this study was to examine the culture of this team, specifically related to the socialization process into elite status, the study is not without its limitations. The PI and co-investigators recognized that the study only spanned a one-year period. Also, only the U.S. Paralympic Track and Field team culture was studied, and thus does not encompass the entire Paralympic experience. The data was also collected by one researcher and then analyzed by a group. Therefore, the study is largely based on the perspective of one insider, though measures were included to minimize this

limitation. These measures included (a) triangulation using multiple data sources (e.g., observations, interviews, media, and social media), (b) consultations with team coaches and one co-researcher, and (c) member checking.

One goal of this study was to provide information on the socialization process into elite, Paralympic sport with the hope of assisting people with disabilities in participating and achieving their sporting goals in the future. By identifying part of the process to achieving elite status, and integrating into the culture upon arrival, strategies may be developed to help aid the process for others.

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CHAPTER VI

EXPLORING PERCEPTIONS AND ROLES OF HEALTHCARE PROVIDERS IN ADAPTIVE SPORT: A QUALITATIVE STUDY FROM THE ROAD TO RIO

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Abstract

The purpose of this study was to explore perceptions and roles of healthcare providers in the Paralympic movement. U.S. Paralympic Track and Field hopefuls for the Rio Paralympics [athletes (n = 103), staff (n = 26), family (n = 4), and classifiers (n = 3)] were observed and select participants interviewed. Observational notes were taken and semi-structured interviews recorded for transcription. Social media posts and media coverage were analyzed utilizing self-determination theory to frame the analysis. Study rigor established through a variety of methods, including triangulation of sources and methods. Common themes included the role of healthcare providers in introducing patients to sport, the athletes' perceptions of their providers, and the role of a provider within a team setting. Providers were a powerful facilitator or barrier to sport participation. Providers played a variety of roles, including serving as a coach or a classifier, or

working with athletes as a team medical provider. Healthcare providers could help fulfil the need for research in adaptive sport. Providers reported experiences within the Paralympic movement that were fun and personally rewarding. Working with this population presented unfamiliar challenges forcing providers to find solutions to enhance performance and reduce injury risk by using different methods, thus enhancing their practices. Athletes perceive providers need greater awareness of non-traditional rehabilitation activities and may need to re-examine their attitudes regarding the abilities and potential of those with disabilities. Hands-on educational opportunities with adaptive sport would likely improve attitudes of providers and improve awareness of opportunities. For the provider, a knowledge of rules governing the use of medications and the performance implications is imperative.

Keywords: Paralympic; self-determination theory; track and field

Introduction

How a person with a physical impairment becomes socialized into sport has been examined by numerous others (Galli, Reel, Henderson, & Detling, 2016; Ruddell & Shinew, 2006). One potential socializing agent is a patient's medical staff. Wu & Williams (2001) found that physical therapists were significant introductory agents for those with spinal cord injury (SCI) into sport. Similarly, Deans et al. (2012) reported that the rehabilitation environment plays a role in helping people with disabilities to overcome fears and anxieties about physical activity and sport. This role may be executed within formal rehabilitation environments, or in partnership with community organizations,

including local adaptive sport programs (Verschuren, Wiart, Hermans, & Ketelaar, 2012). However, Longmuir and Bar-Or (2000) reported that physical therapists did not often encourage children with cerebral palsy to participate in wheelchair sports for fear of decreased gait in their daily lives. Likewise, patients in one study reported a need for greater awareness among rehabilitation professionals of non-traditional rehabilitation activities, such as sport and recreational activities (Taylor & McGruder, 1996). These findings suggest a lack of understanding of the positive physical and psychosocial health benefits of sporting activities for patients with an impairment.

Unfortunately, healthcare providers may not only lack awareness, but may also depreciate a person's abilities. Levins et al. (2004) examined facilitators and barriers to sport participation for those with a SCI, and one participant included her physical therapist as someone who presented a barrier due to the therapist's underestimation of her abilities and low expectations. Similarly, when Ruddell and Shinew (2006) interviewed the U.S. Women's wheelchair basketball team, seven of the 11 women reported that though they had been in physical therapy most of their lives, they had never been told about sports for those who use wheelchairs by their healthcare providers, instead they learned from strangers.

A lack of awareness of available adapted sport opportunities appears to be the greatest barrier to participation for both potential athletes and their healthcare providers. Currently, many studies have looked at individual aspects of adaptive sports, but none have yet to examine an entire Paralympic team over an extended period of time. The current study relies on a sub-set of data collected from observations, interviews, and

social media posts of the U.S. Paralympic Track and Field team from the time of the 2015 World Championships in Doha, Qatar, through the Paralympic Games in Rio de Janeiro, Brazil. The goal of the larger study is to understand the culture of the Paralympic movement, in a qualitative manner, using ethnographic data collection methods across multiple data sources. Since one purpose of qualitative research is to discover meaning and interpret experiences, a qualitative phenomenological approach to data analysis was used to gain insights from the dense description of the athletes' perceptions of their healthcare providers and the perceptions of healthcare providers involved in the Paralympic movement.

Methods

The methods for this study, including the participants and data collection evolved from the previously described feasibility study, with a few exceptions. The current study expanded data collection to include all athletes and staff that were identified as Rio 2016 Paralympic hopefuls, through their involvement at one of the U.S. Paralympic Track and Field sponsored events. A total of 136 people, including athletes (n = 103), coaches and staff (n = 26), family members (n = 4), and classifiers (n = 3) consented to participate and were thus observed and/or interviewed for the purposes of the global ethnographic study. These participants' social media accounts (Facebook, Twitter, and Instagram) were also followed to track themes relevant to this research. The Internet was searched for relevant news articles and televised stories for future analysis. The observational data of the United States Paralympic Track and Field team was collected from the 2015 International Paralympic Committee (IPC) World Championships in Doha, Qatar, through six weeks

after the 2016 Paralympic Games in Rio de Janeiro, including four team training camps/training facilities and six competitions. In total, the events ranged between 4 and 23 days in length.

Purposeful snowball sampling was used to select representative participants for the interviews based on their ability to reflect on their experiences. We also wanted those interviewed to represent the spectrum of the athletes and disabilities common to the team, including gender and minority status, sport events, military status, disability type, and congenital versus acquired impairments. Of the 42 interviews, 24 were athletes, 11 were coaches or staff, four were family members, and three were IPC international classifiers. As described in detail elsewhere (Chapter III), 30 interviews were conducted in person and 12 via telephone or videoconference, due to scheduling conflicts during the camps, or events, prohibiting completion of them in person.

Ethnographic methods were used to collect the data. The primary investigator (PI) served as a member of the volunteer medical staff in the role of physical therapist and athletic trainer. This position allowed the PI to be present for training sessions, as well as on- and off-field events such as team travel, meals, treatment sessions, and team social events. Participant observations were made of the interactions with the team, and of the general atmosphere at these events. Extensive field notes were made and recorded during and immediately after team activities. These notes contained observations of the setting, session activities, paraphrases of conversations, and the researcher's thoughts regarding participation (Emerson, Fritz, & Shaw, 2011). A research log was kept.

In-depth interviews were conducted for the purposes of understanding and adding meaning to the experiences and events of the participants' lives. An interview guide (Creswell, 2013) was developed collaboratively with two coaches and one co-investigator (see Appendix A). Each interview was audio-taped and transcribed verbatim. Participants reviewed their transcript and could suggest changes.

Medical researchers using qualitative methods are increasingly using social media and media coverage (Gibson et al., 2016). The social media accounts of all observed team members were tracked for the duration of the study. For the purposes of this study, posts that discussed or addressed healthcare, healthcare providers, and relevant topics were collected for coding and analysis. Online articles, interviews, and op-eds that were published in relation to healthcare and the role of healthcare providers in the lives of the athletes were also considered. Media coverage obtained by Internet searches for the team members was used to further supplement data and aid in triangulation.

Data analysis seeks to identify themes and is usually carried out concurrently with data collection. A cyclical, emergent strategy was used for data analysis to allow the method of analysis to follow the nature of the data itself which may emerge or change in the course of analysis and the extended timeframe of this study. Details published elsewhere illustrate this method in a linear fashion (see Table 4.3). For this study, we used existing research related to healthcare providers and their role within the adapted sports community and their practices and behaviors towards patients with permanent disabilities to assist in question and theme development. We also analyzed the themes through the lens of self-determination theory. This theory was applied because of our

belief in the importance of healthcare providers creating an environment in which patients can function as educated consumers of healthcare services in an autonomous fashion in the pursuit of meaning in their own lives. Our belief in this style of healthcare delivery and its importance, assisted the framing of the data analysis.

All data were uploaded into NVivo 11 software (Qualitative Solutions and Researching International, 2015) and initially coded. The research team used the heuristics approach to code the data where code words were used to flag similar points and emerging themes within the data. This approach helps researchers in organizing data in the same subject area (van Manen, 1990). This technique was used to get at the essential meaning of the participants' experience; to allow the participants' data to tell their story.

Since meanings are usually implicit, and we made them explicit with thematic analysis as themes were analyzed, an attempt was made to confirm them through triangulation from additional sources, such as the observations, social media posts, and media coverage utilizing the constant comparative method. While initial codes and themes were based in part on previous research literature, the next phase began the search for additional emergent themes and sub-themes within the data. A thematic map was drawn to visually determine the patterns and relationships between each theme for the global study and then was further refined for this study (see Figure 6.1). Themes were then re-read to ensure they were related to coded data and that no data were overlooked, while further defining the themes to fully understand each one.

Results

While analyzing the data, certain common themes emerged related to the role and influence of the healthcare provider in regards to Paralympic sport participation (see Figure 6.1). These themes included aspects related to the role of healthcare providers in introducing patients into adaptive sports, the perceptions of athletes with impairments of their healthcare providers, and the role of a provider within a team setting.

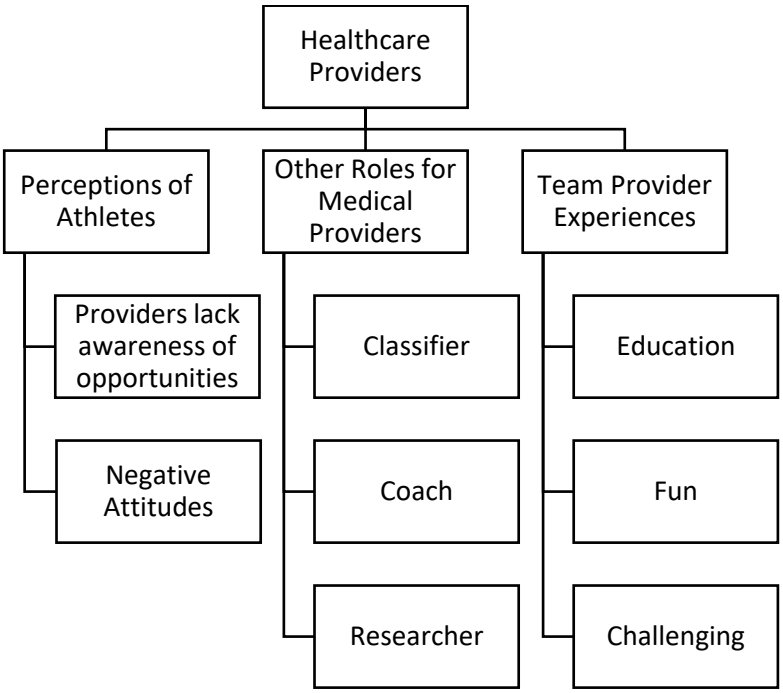

Figure 6.1. *Thematic Map of Healthcare Related Themes*

Of the 24 athletes with impairments interviewed for this study, only three were told about Paralympic, or adaptive sports, by a healthcare provider. All three were informed as children following their lower extremity amputations. One was informed by her prosthetist. Medical providers told the other two participants while they were being treated for osteosarcomas. In the process they were introduced to other children who had

similar amputations and were involved in sports. The other 21 athletes learned about adaptive sports from a variety of other avenues, most commonly from existing sport clubs (*n* = 6), their parents' research (*n* = 4), high school coaches (*n* = 4), and other athletes (*n* = 3). The medical professionals associated with the U.S. Paralympic Track and Field team have perceived the dearth of athletes being referred from other medical professionals. According to the occupational therapist and team coach:

> We suck! And I can say 'we' because as an OT it's terrible. It really is terrible. And I don't know…we need more physicians talking about it, we need people to feel confident and strong about saying, 'you need to get involved in sport.' Period. End of story. 'When I see you at the next visit, I expect you to tell me what program you went to, what sport you did, and how did it go. I want an update.' I have one physician in [town] that does that. She sees her clients, she is an urologist, a pediatric urologist and that's exactly what she does. And she sends me a text [with patient permission] with the name and a phone number of the family when she sees them and meets them for the first time. (Coach 5)

The coach believes that this approach has been highly effective in getting people, especially children, with physical impairments involved in sports. This idea was supported by the team prosthetist who stated, "The O&P [orthotic and prosthetic] individual facilities are almost like the breeding ground, where they [prosthetists] can scout out for new athletes. So the more they're aware of what's going on, the better for everyone" (Healthcare Provider 2).

Athlete Interaction with the Medical Community

The lack of referral to sports programs by healthcare providers may be the result of their attitudes regarding people with permanent physical impairments. One athlete

with a unilateral transfemoral amputation described her physical therapist's attitude towards her following an osteophyte debridement in her residual limb,

> I mean the way the PT treated me was like I couldn't do anything, and that was the feeling that I got when I went and saw her. Like she was just so fragile with me…It just felt like it was kind of a waste of time. But it was more; I think it was more her attitude. (Athlete 20)

Some athletes reported that even once they were participating in sport at an elite level, their healthcare providers often did not take their status into consideration when providing treatment. One athlete, a seated thrower with a medical diagnosis of transverse myelitis, has a history of muscle spasms. Her physician recommended a baclofen pump to help her manage the issue. The appointment was scheduled to place the pump when the athlete informed her coach, who was also part of the U.S. Paralympic team staff and an occupational therapist, of the plan. The coach explained that by eliminating the inconvenience of the muscle spasms with the pump, the athlete would effectively be ending her throwing career because the baclofen would also reduce some of the tone she uses when participating in sport. The athlete opted not to get the pump until after her throwing career was over. The athlete stated that the physician knew that she competed in the Paralympics but never discussed potential side effects that could affect her ability to compete at an elite level.

Another athlete, with a T6-T7 incomplete SCI, expressed his frustration with the "ignorance of the medical community, especially MD's" (Athlete 10). He reported that he has full sensation, but no motor control below the lesion. He stated that his physicians sent him home after his injury without a catheter and without a referral for rehabilitation.

He was soon back in the hospital with a severe urinary tract infection. The athlete states that until he recently found an understanding urologist, he went to physicians, as

> infrequently as possible…because they are the absolute worst…because every time you go in there, and as a child even they would tell my parents that I was going to live a short life and die of kidney failure, like it was a pre-ordained thing…That's a huge thing that doctors could do better. Don't tell, don't tell healthy professional athletes that they're gonna die at a very young age. (Athlete 10)

The same athlete stated that when interacting with the medical community,

> It feels like to have a disability you are no longer worthless, but you are worth less still, and it feels like you know, why are you gonna dedicate time, energy, resources. It's a reflection of what the view of a person's potential is. And the view of a person's potential with a disability is still culturally much lower than an able-bodied person, and that affects everything and you see it more in the medical world just because time, resources, money but it's across the board and it affects people with disabilities. (Athlete 10)

The negative attitudes and behaviors displayed by healthcare providers may be due in part to the lack of educational opportunities in professional educational programs. A team physician stated that the only formal instruction regarding adaptive sport that she received was in a master's program (prior to medical school) that had an "emphasis in what they called Therapeutic Exercise, …I did a three month internship at the VA hospital" (Healthcare Provider 3). Likewise, a team prosthetist stated that he had no formal education in adaptive sport.

> The first one [athlete he worked with], he was an athlete that already was competing, so he just came to the facility that I was at…The unfortunate thing about the industry or the profession is that there's no education on anything adaptive sport-like for prosthetics, so my education actually was trial and mistake or trial and error, kind of learn as you go and pick up things as you go (Healthcare Provider 2).

Due to this lack of formal education and thus familiarity with adaptive sport, healthcare providers may simply be functioning out of a place of ignorance of the opportunities available, the athletic capabilities of people with functional limitations, and the level of competition in Paralympic sport.

Healthcare Provider Roles

Interviewed participants identified a variety of roles within the Paralympic movement for healthcare providers besides building awareness. The three interviewed classifiers were all licensed physical therapists. As mentioned earlier in this paper, one of the interviewed team coaches is an occupational therapist. The team travelled to the Rio Paralympic Games with a medical team consisting of one team physician, one physical therapist/athletic trainer, one athletic trainer, one chiropractor, one prosthetist, and two massage therapists, in addition to the U.S. Olympic Committee (USOC) medical staff. The International Paralympic Committee (IPC) and the USOC have medical providers on their advisory boards, including one of the interviewed participants.

In explaining why people, including healthcare professionals, volunteer as classifiers, an international classifier with a leadership role within the IPC stated,

> People do this (serve as classifiers) because they're passionate about what Para-sport does for the quality of life for people they may have treated, or people like they've treated, and they see how powerful it is in everyday life. And they're committed…As a classifier, you're an advocate for every athlete and not just the one in the room with you at that moment. So if you make a decision for that athlete that can impact other athletes you have to think about that. So you have a much bigger charge. You are advocating for all the athletes in the sport. (Classifier 1)

In a similar vein, an occupational therapist who serves as a U.S Paralympic Track and Field team coach and runs her own local adaptive sport program believes everyone is capable of being involved in Para-sport,

> If I can start a wheelchair rugby team with zero knowledge, because nobody grows up with that sport [in the U.S.], and make it happen, and end up in the top 10 in the nation, anything is possible and all of us can do this. (Coach 5)

One interviewed physician serves on the IPC and USOC medical advisory boards and is a leading researcher within adaptive sport. When questioned regarding the level of her involvement, she stated that she always wanted to be "a part of the bigger conversation around how we use something like Paralympic sport and the pinnacle of elite sport for athletes with disabilities, to ensure we create more opportunities for everyone along the way" (Healthcare Provider 1). While there are many like this physician contributing to the body of knowledge within adaptive sport, there is a need for studies examining sport epidemiology, the biomechanical and physiological aspects of adaptive sport, injury reduction programs, and the classification process. The interviewed classifiers, and some coaches, reported the need for research related to the classification system based on their experiences and issues that arose during this Paralympic cycle, to help ensure fair competition. Researchers, who are also healthcare professionals, can fill all of these knowledge gaps.

Team Medical Personnel Experiences

Some of the issues described by the athletes within the medical community may stem from a lack of formal education regarding the potential of people with permanent physical impairments. A team physician stated that the only formal education she had in

regards to adaptive sport came through a master's degree program in therapeutic exercise, including two adaptive sport classes and an internship that she completed at a Veterans Affairs (VA) hospital. Similarly, the occupational therapist/team coach reported that she learned about adaptive sports at an internship at Sheppard Spinal Center in Atlanta. During her extended time at the Sheppard Center, in the lead up to the 1996 Olympic and Paralympic Games in Atlanta, she was exposed to all the different Paralympic sports and "everyone you know was, at least in the adaptive sports world, getting super excited about hosting it there. And just saw the power of sport" (Coach 5). Likewise, the team prosthetist got involved with Paralympic sport after a client, who was already an athlete, came to the facility he was working in. The athlete competed in the Sydney Paralympic Games and the prosthetist described a "natural flow" of increasing involvement after those Games. The prosthetist also stated,

> The unfortunate thing about the industry or the profession is that there's no education on anything adaptive sport-like for prosthetics, so my education actually was trial and mistake or trial and error, kind of learn as you go and pick up things as you go. (Healthcare Provider 2)

When questioned regarding the best way to proceed moving forward in terms of educating medical professionals regarding adaptive sport, the team physician conveyed the potential influence of presentations at state medical organization or AMA meetings and conferences to increase awareness. The team prosthetist reported the same potential and has already started the process by presenting at national conferences, writing a chapter in a textbook, and partnering with a university program to help educate future

orthotic and prosthetic professionals about adaptive sport and running-specific prosthetics (RSPs).

The medical professionals involved with the team cite several reasons for their participation in the Paralympic movement. All stated that working with the team was a very rewarding experience, both personally and professionally. All of the professionals reported the impact of sport in the lives of the athletes they have worked with.

> We all know the power of sport for anyone. I just over the last, whatever 20 plus years, have realized that the power for someone with a disability is probably times 10, easily, as far as changing the way they see themselves, the way their family, immediate family sees them, the way their community sees them. I mean when you can take someone with a disability and add sport into their life, it just changes everything. And the ripple effect from that is immense. (Coach 5)

The professionals also described the fun that they had working and traveling with the team, including the humor that was often initiated by the athletes. An example of this humor occurred after an athlete, a seated thrower who has had no motor control below the waist for over a decade, fractured his lower leg in non-sport related incident. He was taken to the emergency room where a local doctor gave him his x-ray results. After explaining the diagnosis, treatment plan, and prognosis, the local physician asked the athlete if he had any questions. The athlete asked the doctor, "So doc, will I ever walk again?" The local doctor was at a loss for words, so the team physician graciously, and laughingly, explained that the athlete was teasing him. Similarly, an athletic trainer recalled a comment a seated thrower made at an event. The team had just arrived at the venue and the athletic trainer was in the process of getting the medical tent set-up. The water cooler was on the ground when the seated thrower rolled up in his day chair. He

leaned forward and attempted to get water from the jug, which was still on the ground. He was having a difficult time but the athletic trainer was busy with someone else and did not notice. Some of the other athletes noticed and commented. The thrower responded to the teasing by replying, "What's the point of being disabled if no one is going to help you?!" The whole tent erupted in laughter.

While the medical professionals reported personal reasons (fun and rewarding experiences) for participating in adaptive and Paralympic sport, usually on a volunteer basis, they also described professional reasons for their involvement. All of the healthcare professionals reported, in various ways that working with this population presented challenges that they would not normally see in their everyday jobs that forced them to find solutions in different ways. They believed these challenges and problem solving situations made them better practitioners. Some also perceived that working with healthcare providers from across the nation in the team setting and exposure to other providers and healthcare systems across the world during team travels enriched their own practices.

Discussion

Researchers have identified healthcare providers as potential socializing agents for patients into adaptive sport (Wu & Williams, 2001). However, like other previous research (Longmuir & Bar-Or, 2000; Taylor & McGruder, 1996), this study demonstrated that a healthcare provider did not make most adaptive sport athletes aware of sporting opportunities. Rehabilitation clinicians have often focused primarily on the necessary techniques of mobility training and activities of daily living without considering the long-

term, broader health needs, including healthy aging with a physical disability (Carpenter, 1994). These rehabilitation programs often do not consider the whole person, or take a holistic approach to treatment. Given the reports provided by participants in this study and the Levins et al. (2004) study, it may be important for rehabilitation professionals to re-examine their own attitudes regarding the abilities and potential of those with disabilities to have a more positive influence on their rehabilitation and long-term outcomes.

Attitudes are learned dispositions that direct feelings, thoughts, and actions (Carter & Markham, 2001; Byron & Dieppe, 2000; Peat, 1997). Inappropriate staff attitudes and behaviors have been identified as the biggest barrier to accessing health services by people with disabilities (Carter & Markham, 2001; Byron & Dieppe, 2000). Specifically, the attitudes of health professionals toward people with impairments are significant factors in rehabilitation and reintegration (Peat, 1997; Chubon, 1982). Healthcare providers with negative attitudes that lead to or support negative expectations limit successful rehabilitation (Chubon, 1982; Paris, 1993). A positive attitude towards people with disabilities may result in healthcare providers feeling that those with impairments can be productive community members, decide what is in their own self-interest, and lead a normal life. These beliefs may lead to healthcare provider behaviors such as implementing conditions to help an individual actualize their ability towards a self-sufficient life and advocating for policy and societal changes that would benefit those with impairments (Tervo, Palmer, & Redinius, 2004). Negative attitudes are a product of individual beliefs and societal and organizational practices (Paris, 1993) that can affect

the quality and range or rehabilitation services offered (Estes, Deyer, Hansen, & Russell, 1991). If, as Athlete 10 stated, a physician believes a person with a disability is "still worth less," the physician is not likely to devote the time and energy to discover what adaptive sport opportunities are available in the area or to refer patients to them.

On the other end of the spectrum, due to the caring nature often displayed by rehabilitation professionals, there may be a wish to offer help to those with impairments in a manner that is too passive and care-centered, which does not allow the person to recognize their own abilities and competence. These practitioners may not push individuals to the point that they realize their own capabilities, learn self-sufficiency, or ultimately to their maximum potential in everyday activities or sport (Purdue & Howe, 2013). Contributing to this problem is the lack of sport science evidence in disability sport to guide practitioners in pushing an individual with an impairment to maximize their potential (Purdue & Howe, 2013). Sherrill and Williams (1996) reported that the role of healthcare professionals is "to empower individuals with disabilities to become increasingly self-directed, assertive and active in sport decision making and participation" (p. 44). For the healthcare provider, this likely means pushing the patient to participate in sporting activities even if they are hesitant to do so. As the interviewed occupational therapist-coach stated she and a local physician see great results when the physician tells the patient, "When I see you at the next visit, I expect you to tell me what program you went to, what sport you did, and how did it go. I want an update."

One function of physical and occupational therapists is to enable patients' participation in activities for which they report high levels of interest yet have low levels

of satisfaction. One way to assist patients with a disability in pursuing valued and personally meaningful activities is to inform them of the resources available to them. Some physical therapists have reported the importance of their role in facilitating community reintegration of patients as part of a multi-disciplinary team, often including sport and leisure activities. This role seems to hold especially true within the military (Wojciechowski, 2014). Unfortunately, Taylor and McGruder (1996) found a perception among those with disabilities that rehabilitation professionals need greater awareness of non-traditional rehabilitation activities, which was still evident in this study's findings twenty years later.

Besides creating patient awareness of sporting opportunities and pushing patients toward participation, our study illustrates how healthcare providers can assume a variety of additional roles within the Paralympic movement. Potential roles include becoming a classifier, a coach, an adaptive sport researcher, or a team medical provider.

Classification provides the social order for disability sport and should be based on the consensus that classification is used to make competition equitable and fair (Wu, Williams, & Sherrill, 2000). Classifiers are the professionals within the social system who serve as the agents of social control (Wu, 2001). They have the power to control the classification system, and ultimately the fairness of competition (Wu, Williams, & Sherrill, 2000). The medical classifiers in our study are volunteers who are passionate about adaptive sport and the power it has to change a participant's quality of life. Classification is a continually evolving area, and the contribution from healthcare providers with a background in rehabilitation, sport, and sport performance is critical to

the classification process (Betteridge, 2010). For example, physical therapists have experience treating patients with a wide range of impairments, functional capabilities, and disabilities. That, along with their observation skills, their knowledge of therapeutic exercises to improve function and performance, makes them a great fit as a classifier, a coach, or a team medical provider (Betteridge, 2010).

In addition to educating patients on potential sporting opportunities or becoming a classifier, healthcare professionals could have a role in coaching (illustrated by Coach 5, an occupational therapist) and coach education as well. A lack of knowledgeable coaches in disability sport has also been reported in the literature, along with the need for coaching development that includes more disability sport-specific material in formal coach education courses, clinics, and seminars (Cregan, Bloom, & Reid, 2007; DePauw & Gavron, 2005; Sherrill & Williams, 1996). The lack of formal educational opportunities often leaves coaches turning to informal opportunities for learning, such as consulting coaching peers and greater communication with their athletes regarding disability-specific information (Cregan et al., 2007; McMaster, Culver, & Werthner, 2012). While these informal opportunities for learning do address some knowledge needs, it has been suggested that coaches would benefit from mentorship from healthcare providers. Physical therapists, occupational therapists, and neuropsychologists could help coaches learn information and skills directly related to the medical diagnosis, functional impairments, co-morbidities and their implications, potential modifications, injury prevention, acute injury and illness management, and transfer skills (Fairhurst, Bloom, & Harvey, 2016). Given their level of knowledge and expertise in these areas, therapists

have the potential to make excellent adaptive sport coaches, especially if they have a participatory history in traditional sport.

In 1985, the Committee on Sports for the Disabled, a standing subcommittee of the U.S. Olympic Committee (USOC), recommended seven research areas for disability sport. The seven areas were (a) training and/or competition effects; (b) selection and training of coaches, volunteers, officials; (c) technological advances; (d) sociological and psychological aspects; (e) similarities and differences among athletes with and without disabilities; (f) demographics; and (g) legal, philosophical, and historical bases of sports (Reid & Prupas, 1998). Since that time there has actually been a decrease in the number of research articles in some of the categories with a demonstrated need for continued research in all categories (Lee & Porretta, 2013). Many healthcare providers have knowledge and experience to fill this need as demonstrated by a physician in our study.

Medical providers can also serve as part of the team medical staff. As with the U.S. Paralympic Track and Field team, it is common for teams to use the services of and travel with physicians, physical therapists, chiropractors, athletic trainers, prosthetists, and massage therapists to assist in the prevention, recognition, and management of injuries and illnesses. Nyland (2009) described the sports medicine team at the 1996 Paralympic Games in Atlanta, Georgia, as a unique interdisciplinary care environment that helped him to refine his functional evaluative skills. The importance of functional evaluative skills becomes even more critical in the Paralympic and adaptive sport community. A sports-related injury could have a drastic impact on an athlete's ability to carry out activities of daily living and could have severe long-term consequences. Within

sports medicine, the team medical staff often has to decide, along with the athlete, whether the athlete will compete with a “minor” injury and often has to decide between treatments that allow for a quick return to sport versus better long-term outcomes (Blauwet, Greenfield, Ham, Spill, & Mukherjee, 2015). It is the responsibility of the medical staff to fully examine the athlete and discuss with the athlete the risks and benefits of continued participation. Associated risks are inherent with sports participation. However, as the medical staff, the autonomy of the athlete must be acknowledged despite our ethical role of protecting the health of our patients. This role has to be balanced so that medical staff can do what is in the best interest of the individual without being paternalistic (Blauwet et al., 2015). It is also the role of the medical, strength and conditioning, and coaching staffs to implement appropriate injury prevention and training programs to maximize performance without compromising health and safety.

An injury may lead to increased morbidity and mortality and the athlete could lose training time and work or school time (Kjaer et al., 2005; Ljungqvist et al., 2009). The injury could be a burden to society, with medical treatment, rehabilitation, and reduced work capacity (Kjaer et al., 2005). For the athlete with a disability, an injury could have more serious consequences compared to an able-bodied athlete, including problems with activities of daily living and mobility concerns (Vanlandewijck & Thompson, 2011). In this population, the potential injury risk and the potential for loss of independence must be discussed to allow participants to make well-informed decisions about their participation in an autonomous manner (Blauwet et al., 2015). As illustrated

with the athlete considering a baclofen pump, athletes with a disability have a right to autonomously direct their life choices, including the acceptance of consequences related to those choices. This is a critical element of self-actualization, which is tied to autonomy in the self-determination theory (Ryan & Deci, 2000) and the human rights promise.

Study Limitations

In designing the study, three potential limitations were recognized. First, participants were limited to Rio 2016 Paralympic Games track and field hopefuls (and eventual team members), their families, team staff, and classifiers. For the observational and social media data, all hopefuls and eventual Paralympic team members were observed and data were collected and analyzed. However, for the interviews, participants were selected via purposeful, snowball sampling to ensure that a representative collection of athletes were selected (e.g. gender, age, sport classification, sport event). While these participants are likely representative of the elite Paralympic track and field community given the number of interviews that allowed for theoretical saturation of data, findings may be limited to this population and may not hold true for the adaptive sport community as a whole. Second, the PI captured all observational field notes and conducted all interviews, which may result in data, and its analysis, being tinted by the lenses through which the primary investigator views it, including her life experiences and professional medical background. Last, given the researcher's position with the team as a medical provider, the researcher's position may have changed how the participants responded in

the interviews. The PI used several techniques, described previously (Chapter IV), in an attempt to minimize these limitations and to establish study rigor.

Conclusion

While this study is unique in that we sought to explore perceptions and roles of healthcare providers in the Paralympic movement from a sub-set of data collected from a global study of the U.S. Paralympic Track and Field team, our findings were often consistent with themes found in previous research in the field and other fields. For example, others have reported inappropriate healthcare staff attitudes and behaviors towards people with disabilities (Byron & Dieppe, 2000; Carter & Markham, 2001). These studies' findings of negative attitudes and behaviors are consistent with the reports of the athletes in this study who reported that healthcare providers did not regularly refer them to sports opportunities or treat them as athletes once involved in sports, or as people with high potential. Since these attitudes and behaviors are apparent in healthcare student populations, awareness training needs to start in professional education programs (Tervo et al., 2004; Tervo, Azuma, Palmer, & Redinius, 2002; Stachura & Garven, 2003). An exemplar of this type of training in an entry-level education program is a six-week course offered to Doctorate of Physical Therapy students at MGH Institute of Health Professions in a partnership with Spaulding Adaptive Sport Center (Spaulding Rehabilitation Network, 2018).

Once healthcare providers are made aware of adaptive sporting opportunities, and the benefits of those opportunities to those who do participate, the providers tend to become involved in the adaptive sport movement through a variety of avenues. Some

choose to serve as team medical staff, while others become involved in the classification process, or through research efforts. Those who do become involved note that the experiences are rewarding both personally and professionally.

For the sports medicine practitioner working with athletes with disabilities, it is imperative that the practitioner not only have a knowledge of sports-related musculoskeletal injuries and neurorehabilitation principles, but also a working knowledge of the common systemic and general health conditions seen in this population. The healthcare professional needs to know about issues including skin breakdown, autonomic dysreflexia, urinary tract infection, thermoregulatory issues, sequela to early onset osteoporosis, food sensitivities and other allergies, and autoimmune diseases, among others (Blauwet et al., 2015). With this population, special attention must be paid to all of the medications that the athlete may be taking for their medical condition. If a prescribed medication appears on the World Anti-Doping Association (WADA) prohibited list then a Therapeutic Use Exemption (TUE) form must be completed by a physician for doping control purposes (World Anti-Doping Agency, 2016). The astute clinician must also be aware of what effect specific medications may have on the athlete's ability to maximize performance within their chosen sport. Certain medications, such as baclofen and blood thinners, can have a profound negative influence on the adaptive athlete's sport performance, and when providing holistic care to these athletes, the potential performance detriments must be recognized and discussed with the athlete, along with potential alternatives. Ultimately, the athlete needs to have a full

understanding of how any medication or medical/rehabilitation procedure may influence their career.

Several potential roles within the Paralympic movement have been delineated for the healthcare provider. A provider's work environment, family life, and other interests and commitments will likely help dictate what kind of role, if any, they might pursue. Given the demands most providers are under the temptation is often to believe that we are too busy to be involved. Prior to succumbing to this belief, providers should consider a statement from the wife of a Marine and a Paralympic thrower. He was,

> very depressed, very moody, very hard to deal with…He was just down, all the time…He almost took his life and his service dog is the reason why he didn't. She knocked the gun out of his hands. She jumped up in his lap and saved his life…And then he found throwing, holy cow, I have never seen him so happy! This sport really saved his life (Family 2).

Paralympic sport not only saved his life, it changed her life and the lives of their two boys. With that sort of impact, we all have the time to at least start talking about adaptive sport with our patients, to say, "You need to get involved in sport." Period. End of story.

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CHAPTER VII

COACHING ADAPTIVE SPORT: COACHING PHILOSOPHY, INFLUENCE ON THE COACH, AND COACH DEVELOPMENT – A PHENOMENOLOGICAL ANALYSIS

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Abstract

The purpose of this study was to examine the experiences of the coaches involved in the Paralympic movement from a team perspective. U.S. Paralympic Track and Field hopefuls for the Rio Paralympics [athletes (n = 103), staff (n = 26), family (n = 4), and classifiers (n = 3)] were observed and select participants interviewed. Observational notes, transcribed interviews, social media, and media coverage were analyzed utilizing self-determination theory to frame this qualitative study. Study rigor established through a variety of methods, including triangulation of methods and sources. Prominent themes related to coaching included coaching philosophy, coaching development, coaching challenges, and the influence of working with this population. Paralympic coaches appear to have adopted an autonomy supportive style of coaching, empowering their athletes. Coaches report difficulty finding quality adaptive sport coaching education and

resources, relying on peer mentorship as a primary mode of gaining knowledge and experience. Adaptive sport athletes often have difficulty finding a program or coach. One solution is to integrate athletes with disabilities into able-bodied training groups. Coaches cited the athletes and their experiences while working with this population as their most rewarding.

Keywords: Paralympics; Track and Field; adaptive sport

Introduction

In 1985, the Committee on Sports for the Disabled, a standing subcommittee of the U.S. Olympic Committee (USOC), recommended seven research areas for disability sports, one of which was the investigation of coaching (Reid & Prupas, 1998). Since that time, there has actually been a decrease in the number of research articles pertaining to coaching and coaching development (Lee & Porretta, 2013).

While dated, existing research indicates that within adaptive sport there is a dearth of qualified coaches (Hedrick, Morse, & Figoni, 1988; Ferrara & Buckley, 1996) and that coaches who wish to become involved face challenges related to coaching development (McMaster, Culver, & Werthner, 2012; Cregan, Bloom, & Reid, 2007). More recent literature notes that formal and informal learning opportunities could help alleviate this challenge and other challenges inherent in adaptive sport (McMaster et al., 2012; Falcão, Bloom, & Loughead, 2015; Fairhurst, Bloom, & Harvey, 2016).

Given the influential nature of coaches and the lack of adaptive sport coaches, the lack of quality coaches is a barrier to adaptive sport participation and eventual progression through the sporting ranks. Understanding this barrier may encourage others

to get involved in adaptive sport coaching and aid in coaching development. The current study relies on a sub-set of data collected from observations and interviews of the U.S. Paralympic Track and Field team from the time of World Championships in Doha, Qatar (October 13 to November 2, 2015) through 6 weeks following the Paralympic Games in Rio de Janeiro, Brazil (August 28 to September 20, 2016). The goal of the larger study was to understand the culture of the Paralympic movement in a qualitative manner using ethnographic data collection methods. From that overall goal, this particular study aims to understand the coaching development process within adaptive sport from the perspective of coaches and athletes, utilizing phenomenological methods. For this study, the self-determination theory (Ryan & Deci, 2000) was selected as the lens through which we analyzed the data into themes. Self-determination theory emphasizes the role of the environment (e.g., coach, teammates) in encouraging athletes' perceptions of self-determined autonomy, relatedness, and competence (Ryan & Deci, 2000).

One of the influences of adaptive sport identified in previous research is the promotion of autonomy and independence for participants. By identifying themes related to the role that coaches and their particular coaching philosophy can play in promoting participation, competence, relatedness and autonomy through adaptive sport, independence and intrinsic motivation may be facilitated.

Methods

The methods for this study, including the participants and data collection evolved from the previously described feasibility study (Chapter IV), with a few exceptions. We expanded the study in terms of both timeframe for data collection and in participants. The

observational data, interviews, social media posts, and media stories of the U.S. Paralympic Track and Field team was collected from the 2015 International Paralympic Committee (IPC) World Championships through six weeks after the 2016 Paralympic Games in Rio de Janeiro. We also expanded the participants to include all athletes and staff who were identified as Rio 2016 Paralympic hopefuls, through their involvement at one of the U.S. Paralympic Track and Field sponsored events. A total of 136 people, including athletes (n = 103), coaches and staff (n = 26), family members (n = 4), and classifiers (n = 3) consented to participate and were thus observed and/or interviewed.

To summarize the details of the ethnographic data collection process elaborated in Chapter IV, data sources included observations, social media post, media stories, and interviews. The primary investigator (PI) served as a member of the volunteer medical staff in the role of physical therapist and athletic trainer. This position allowed the PI to be present for training sessions, as well as on- and off-field events such as team travel, meals, treatment sessions, and team social events. In total, observational data occurred at four team training camps/training facilities and six competitions. Therefore, the direct observational events ranged between 4 and 23 days. Over those days, the primary author made participant observations of the team interactions and of the general atmosphere. Field notes contained observations of the setting, session activities, paraphrases of conversations, and the researcher's thoughts regarding participation (Emerson, Fritz, & Shaw, 2011).

Purposeful snowball sampling was used to select representative participants for the interviews based on predetermined criteria. Of the 42 interviews, 24 were athletes, 11

were coaches (*n* = 5) or staff, four were family members, and three were IPC international classifiers. The PI interviewed 68.2% of the participants face-to-face. The remaining interviews (*n* = 12) were conducted via telephone or videoconference with a few team staff and athletes, one family member, and all the classifiers due to scheduling conflicts during the camps or events prohibiting completion of face-to-face interviews. The PI conducted in-depth interviews for the purposes of understanding and adding meaning to the experiences and events of the participants' lives. Each interview was audiotaped and transcribed verbatim. Participants were allowed to review their transcript and suggest changes.

To allow for a rich triangulation of sources, we concurrently captured participants' social media accounts (Facebook, Twitter, and Instagram) with NCapture to track themes relevant to this research. For the purposes of this study, posts that discussed or addressed coaching and relevant topics were collected for coding and analysis. Online articles, interviews, and op-eds that were published in relation to coaching were also considered. Social media and media coverage are increasingly being used by medical researchers in ethnographic studies (Gibson et al., 2016).

Qualitative data analysis seeks to identify themes and is usually carried out concurrently with data collection. This cyclical constant comparison approach to analysis allows for continual refinement. For this study, we applied existing research in coaching education and development to assist in question and theme development. We also analyzed the themes through the lens of self-determination theory. This theory was used because of our belief in the importance of coaches creating a sporting environment in

which athletes can effectively build relationships (relatedness) and competence to find autonomy in sport and in life. Our belief in this style of coaching, and its importance within sport, assisted the framing of the phenomenological analysis of the data.

We used NVivo 11 software (Qualitative Solutions and Researching International, 2015) for data management and initial heuristic coding (van Manen, 1990). Initial themes were analyzed based on previous literature, and an attempt was made to confirm them through triangulation across all data sources. If data could not be categorized based on previous research, a new code was given. A thematic map was drawn to visually determine the patterns and relationships between each emergent theme relative to this study. Themes were then re-read to ensure they were related to coded data and that no data were overlooked, while further defining the themes to fully understand each one.

In summary, the PI used an ethnographic approach for data collection and the research team used phenomenological methods to understand and assign meaning to those data (Creswell, 2013). The coaching experience is a specific circumstance within the Paralympic culture making phenomenological analysis pertinent. Existing literature was used to assist in the development of the interview questions and the initial thematic map. Taking a multi-methods qualitative approach allowed us to examine the participant's experiences and perspectives related to coaching and coaching development with an eye towards a coach's ability to facilitate autonomy and independence through sport.

Results

Of the five team coaches interviewed for this study, all five had competed in a variety of sports as able-bodied athletes. Two had competed as track-and-field athletes in the Olympics. One competed as a Paralympic wheelchair racer following an accident while in college. In addition to being former competitive athletes, one coached at the NCAA Division I level and worked for U.S.A. Track and Field, while another currently coaches both Olympic and Paralympic athletes at one of the USOC Olympic Training Centers. Another coach oversees the U.S. Paralympic Wheelchair Racing facility. Finally, one is a practicing occupational therapist and manages her own local adaptive sports program.

Three of the able-bodied coaches were introduced to the Paralympics by other coaches and were asked to become involved by training individuals or by working with the U.S. National Track and Field Team. One coach stated that the team's head coach called and asked if she would be interested in coaching for the Paralympic team. "I said, 'Sure.' Then I hung up the phone and looked up what the Paralympics was" (Coach 3). Even though the new coach had participated in the Olympics herself, she was unaware of elite sporting opportunities for those with disabilities. The exception to the introduction into adaptive sport coaching was the occupational therapist who had been introduced to adaptive sport as a student while on an internship. The Paralympic wheelchair racer turned-coach was mentored by his own coach and eventually took over his mentor's position.

The fact that the U.S. Paralympic Track and Field head coach was recruiting national team coaches from a pool of inexperienced adaptive sport coaches speaks to the lack of available coaches with experience in this area. The athlete and family interviews, additional observations, and news articles also supported this observation. One 2-time Paralympian, a seated thrower, was unable to find a coach in her metropolitan area so her national team coach sent her workouts via email and they reviewed video as needed to work on throwing mechanics. Her family assisted by helping her set up her throwing chair and by retrieving implements during her training sessions. Similarly, one athlete, who was already a Paralympic medalist, was unable to convince her high school and the state athletic association to allow her to participate with her high school team. As a result, she filed a lawsuit that eventually led to the state becoming the first to require equal athletic opportunities for students with disabilities (Popke, 2008). However, in the rare situations where youth athletes were able to find adaptive sport coaches and programs, the influence of those coaches were profound on both the athlete and the family. One mother of a wheelchair racer stated, "If there is one person on earth, that you know, deserves sainthood, it would be [her daughter's youth coach and program director]" (Family 1). A different wheelchair racer reported that it was his high school's track coach that introduced him to wheelchair racing:

> My first day of high school a guy came up to me, who I would later find out was the track coach, and he asked me if I had a broken leg or if I was in the chair permanently, and I told him that I was in the chair permanently. And he was like, 'oh, would you like to come out for the track team?' And I kind of looked at him and I said, 'I just told you I can't walk', and he said, 'oh, yeah I know, but I have seen kids in wheelchairs race at the state meet before, and I have never coached a

> kid in a wheelchair before, but if you want to give it a go, like it would be cool to have you on the team.' (Athlete 2)

The wheelchair racer stated that the coach included him in everything: "He was a huge advocate in terms of making sure that I was treated just like every other athlete" (Athlete 2). The coach laid the foundation for his collegiate and Paralympic racing careers.

For many athletes, finding quality coaching meant moving to a high performance center such as the Olympic Training Center in Chula Vista, California, the U.S. Paralympic Wheelchair Racing Center at the University of Illinois in Champaign, Illinois, or to private facilities that specialize in training professional track and field athletes.

From the data, three common themes emerged related to the influence of coaching adaptive sport on the coach, coaching development, and coaching philosophy (see Figure 7.1). The first was the personal and professional influences of coaching in the Paralympic movement on the coaches. One coach stated that she "came out to my first camp and immediately just connected, and it changed my life" (Coach 3). Another coach reflected that all of the travel and the work would not be worth it,

> if it wasn't for the athletes and their desire… they make it worth it because to see them be successful and to know their journey and to know their back story, to see where they were and now where they are, is compelling… And to know that there is a couple of people that I know that sports has saved their lives. (Coach 2)

Another coach stated that, while at a military camp, on the third day, a participant with bilateral lower extremity amputations who had arrived at the camp using crutches,

> lost (got rid of) his crutches and was doing things with his legs. Not really good but he had lost his crutches, and everybody started clapping. I got emotional at this. And one thing that I really noticed was that the brightness of his eyes had come back, and that, why I'm getting emotional? And that I knew was the most satisfying moment for me as a coach. (Coach 4)

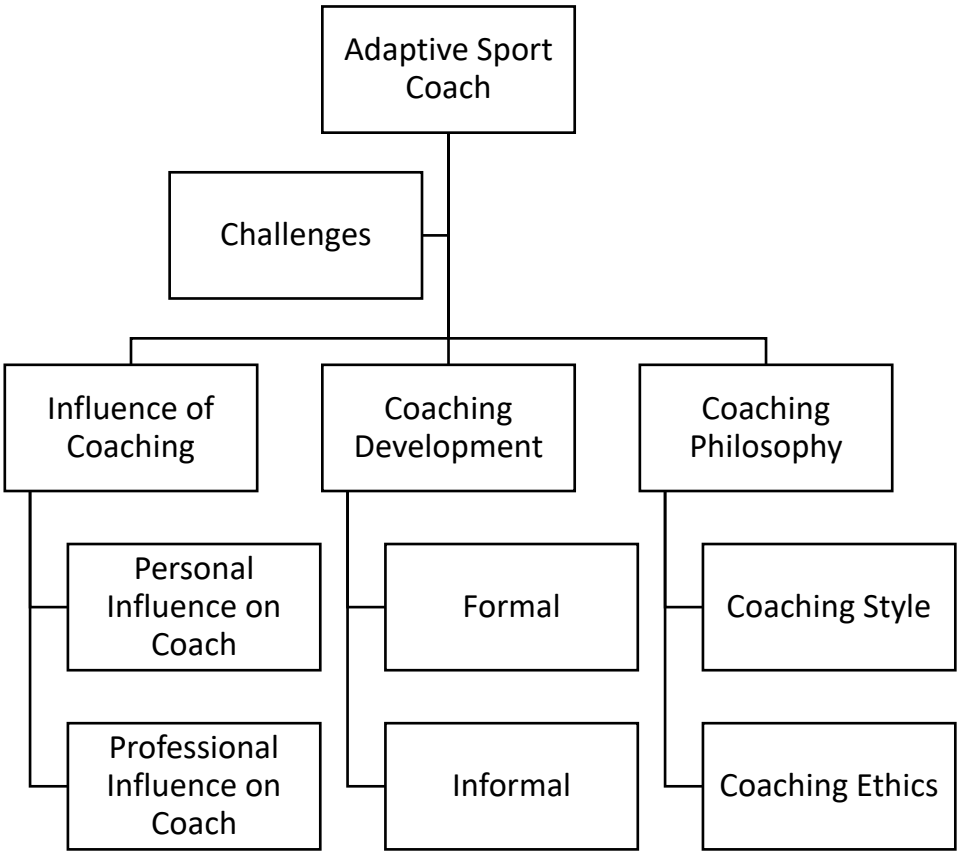

Figure 7.1. *Thematic Map of Coaching Related Themes*

It is likely that these powerful, connecting experiences served as motivators for the coaches to look for avenues through which to develop as coaches in formal and informal venues.

The second primary theme was how the coaches grew as adaptive sport coaches. Having no formal training in coaching adaptive sports athletes, one coach stated that

while she was still a competitive athlete, she was coaching herself and other able-bodied athletes:

> I had to be a student of my sport. I was constantly learning, and watching, and seeing what other people were doing. I had this coaching philosophy of problem solving, figuring things out, looking at different methods. I think I just applied that. I saw the challenges and the different parameters that I had to work with, with the disabilities, and just apply that same philosophy… (Coach 3)

These experiences as athlete-coach assisted in the development of this coach's philosophy of coaching. Similarly, another coach reminisced about his first experience working with adaptive sport athletes after receiving a call to come work with the team:

> We had a camp for a week (prior to traveling abroad for an event) and I just went to the workout, I observed a lot, watched the athletes moving their bodies, and I watched what they did for warm-up, and I said well it looks like they are doing everything I do. So, it (coaching adaptive athletes) isn't going to be a problem. (Coach 4)

The coaches reported a lack of formal education in adaptive track and field coaching in the U.S., but several described the role of mentors and athletes in helping them to learn in informal learning situations. One coach stated that the best way to learn is to immerse yourself in a training setting: "being in an environment where you get this exposure and this day-to-day experience. I don't think you can do better than that (an immersion experience)" (Coach 1). Another coach stated,

> I learned a lot just by, like I would go out to the University of Illinois and hang out with Adam (Bleakney) for a week just like do an internship with him for a week and I've done that several times over the last 15 years. And then it's taking notes and asking questions of all the athletes and coaches that have been involved with for 20 plus years and learning as much as I can. (Coach 5)

Unlike traditional sport, where winning tends to be the dominant premise, those in the Paralympic movement may be more likely to mentor one another:

> There are so many of us willing to help. I mean if one person has the tiniest bit of interest or passion there's so many of us willing to take you under our wing and help you learn the knowledge. If you're willing to learn, we're all very willing to teach. It isn't this world of, oh what's the term...intellectual property…like that kind of concept doesn't exist. (Coach 5)

A coach reported that his mentor had a large library and the mentor would pick out a sport science or coaching theory book or article and have him read it and then come back to discuss it. The coach stated he "always wanted to understand why" (Coach 1).

Just as Coach 5 stated she learned a lot by asking questions and taking notes of all the athletes and coaches she met along the way, most of the coaches reported the importance of communicating with and learning from athletes. One coach stated he trained with another elite Paralympic athlete in order to learn from him. Another stated that he sits with his athletes to "learn about their goals, their dreams" and their dreams become "my dreams, so we have common goals" (Coach 4). An illustration of this coaching mindset, one that was often mentioned by athletes and other coaches, occurred when a coach served as his athlete's guide in a race when she was unable to find one (see Figure 7.2).

Joaquim Cruz - the most famous guide runner of all time?

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BY **ANNEMARIE BLANCO** | **AUG. 07, 2015,** 8:36 P.M. (ET)

Joaquim Cruz and Ivonne Mosquera-Schmidt, pictured above, speak to reporters during a press conference during the 2015 Parapan American Games.

Days before her chance at the 2013 IPC World Track and Field Championships in Lyon, Ivonne Mosquera-Schmidt was faced with a heartbreaking challenge. She was without a guide which she would leave her unable to compete. As she racked her brain for a solution, she stumbled upon star athlete Joaquim Cruz. While the pair hardly knew each other, he was quick to offer his assistance. But, this was not their first encounter and Mosquera-Schmidt soon remembered him from months prior.

Figure 7.2. *Coach Serving as a Guide for an Athlete with a Visual Impairment* (Blanco, 2015)

During the interviews, the primary author did not ask specifically about their coaching philosophies, but all coaches mentioned them:

> Sometimes it's not the body, it's the spirit. The spirit always comes first because we are motivated, the spirit motivates us to do something, to get up in the morning, you know to go outside the house, okay, it's the spirit that we need to keep working, if the spirit is fixed or healthy we can do anything. What makes people do that, it's not their body, the body is motivated by something, and that something is the spirit. (Coach 4)

In order to help an athlete work on their spirit, the coach often employed a coaching style utilizing humor while working with his athletes.

> People who have lost an arm tend to hide it, or kids who were born with, deficiency like an arm, you know they tend to wear big clothes, you know, and I say hey, you know you're a runner, you're going to move your arms whether you have them or not, because that's the normal movement. So put those things out and start moving those arms. Okay, and you're having problems with vitamin D, because you always wear big sweaters, (laughing) okay and so I make little jokes

> here and there, very positive jokes, I say express yourself and the way you're going to do it is by moving freely. (Coach 4)

Another coaching philosophy that several coaches mentioned was the importance of participation. Coaches described the importance of not letting a new athlete, or potential athlete, get away with saying that that they did not want to participate, or try a new drill, as the resistance was usually related to fear. The coaches applied differing styles to facilitate participation. Coach 5 discussed how she would allow reluctant athletes to watch for a moment, but then they had to participate with their peers. Coach 4 stated that he would either demonstrate, or do the drill with the athlete. Sometimes the coach would find a way to distract a fearful athlete, such as when he helped an athlete with a bilateral lower extremity amputation run a curve for the first time by running with him and tossing a ball back and forth in the process.

Some of the coaches described aspects related to professionalism within their coaching situations that centered on what could be considered ethical dilemmas and moral obligation. Coaches within Paralympic sport must consider that the positive physical adaptations from training may improve the athlete's function over time to the point that the athlete may become "classed up." Competitively speaking, the athlete would thus be at a disadvantage by competing against others who have greater function. Ethically, functional improvement should not be avoided. Following the World Championships in Doha, one interviewed coach stated that she had an athlete that she felt would be classed up upon re-evaluation for classification because the athlete was much more functional than when she had originally been classified. Medically, the athlete's

condition was the same, but through her involvement in sport, she was now living independently. While the classification rules specifically state that it should not happen, the concern was apparent. The coach stated that part of her wanted to limit the athlete's training to ensure that she was not classed up because she would not be competitive in the higher class at the Paralympic Games. However, ethically she would never limit the athlete for classification reasons as it might affect other areas of that athlete's life beyond sport.

Another professional consideration related to the coaches' philosophy of coaching revolved around a potential moral obligation for coaches. Outside of the interviews, during general conversations, the coaches described their own, sometimes painful, transition out of competitive sport and the importance of easing the transition of their adaptive sport athletes. One coach spoke of helping an athlete get a part-time job while she was still competing to help her gain work experience and to build a resume. The coach was also helping the athlete to get re-enrolled at a local university so that once the athlete's competitive career was over she had something to transition to, such as an academic program or career.

Discussion

The results are similar to previous research in a variety of ways. Within adaptive sport, it is not uncommon to find athletes competing that have no coach or very limited access to coaching. Hedrick et al. (1988) reported that only two of 17 elite wheelchair roadracers had a coach, while only 58% of the 319 American adult athletes had coaches during their training for the 1992 Paralympic Games (Ferrara & Buckley, 1996). Due to

a lack of coaches, appropriate coach training, and technical resources, peers were the most frequently used resource for information for elite wheelchair road racers (Hedrick et al., 1988). While U.S. Track and Field National Team athletes often had coaches in their hometowns and the benefit of team coaches, these national team coaches indicated that they still learned from their athletes and their coaching mentors in informal settings. The interviewed coaches described a lack of formal educational experiences related to adaptive sport in the U.S.

For youth participants of organized sports, the coach may be the most influential adult in a child's life after their parents (Petitpas, Cornelius, Van Raalte, & Jones, 2005). This influence holds true for youth athletes with disabilities in previous research (Farrell, Crocker, McDonough, & Sedgwick, 2004; Shapiro, 2003) and in this study. Despite the significance of this adult influence, the process by which adaptive sport coaches develop their skill set is not completely known. Furthermore, coach education programs lack specificity for disability sport (McMaster et al., 2012), forcing interested parties to independently acquire disability-specific knowledge (Cregan et al., 2007). It is also believed that there is a lack of qualified coaches that negatively impacts the performance and the experience of adaptive sport athletes (Dieffenbach & Statler, 2012; McMaster et al., 2012).

One solution that has been recommended is to integrate athletes with disabilities into able-bodied training groups, taking advantage of the quality coaching (Primeau, Akinsanya, & Apostolopoulos, 2015). This arrangement was observed with several of the ambulatory team members training at the Olympic Training Center in Chula Vista or

with private high performance training facilities that specialize in training professional track and field athletes. The benefits of such an arrangement include pushing the coach out of their comfort zone to improve their coaching skills and the creation of a "vibrant training community that enriches all the athletes involved" (Primeau et al., 2015, p. 68). Most of the team coaches in our study had experience coaching able-bodied athletes first and then transitioned to working with adaptive sport athletes.

Many adaptive sport coaches only have experience with able-bodied athletes and a common complaint amongst them is that it is difficult to find quality adaptive sport coaching references and education (Martin & Whalen, 2014). However, when specific clinics were required in other countries, some elite coaches stated that they were a "waste of time…" (Bush & Silk, 2012), and it has been suggested that the courses may be too elementary (McMaster et al., 2012). Other countries, such as the United Kingdom and Canada, have comprehensive coaching education programs, and some even require certification. In the United Kingdom, a sport education organization called Sports Coach UK established the UK Coaching Framework, a Coaching Children Curriculum, and Inclusion and Diversity Coaching (Lara-Bercial, 2011; sports coach UK, 2017). In Canada, the Coaching Association of Canada has a National Coaching Certification Program (NCCP) that includes education on specific sports, including Paralympic sports (Coach CA, 2017; Falcão et al., 2015). However, coaches of athletes with intellectual disabilities provided similar reports regarding the formal coaching education experiences provided by the NCCP that other groups reported. Though the coaches felt the courses had the potential to be beneficial, perhaps with restructuring, they are too generic and not

beneficial to their development (MacDonald, Beck, Erickson, & Côté, 2016). The coaches cited learning by doing and through coaching peers as the primary ways they developed their skills but would welcome additional specific learning opportunities through the NCCP and through printed and electronic materials. Following the 2008 Paralympic Games, many of Canada's coaches discussed avenues through which the country's Paralympic coaching pool could be developed, including mentorship programs designed to bring developing coaches to major national and international events to work with a senior coach. The coaches also felt that encouraging and assisting coaches of able-bodied athletes in gaining experience and knowledge working with adaptive sport athletes would prove beneficial (Sawicki, 2008).

Consistent with our results, the research indicates peer mentorship is one of the primary modes of gaining knowledge and experience towards developing as a coach in adaptive sport (Cregan et al., 2007; Fairhurst, Bloom, & Harvey, 2016; McMaster et al., 2012). Coaches report utilizing knowledge gained from their own coaches from their competitive days, from professors, and from international coaching peers. One interviewed coach stated that he "looked forward to linking with coaches from other countries…I'm curious about what they are doing over there. So I go internationally for my own education" (Fairhurst et al., 2016, p. 4). Another coach reported that he reached out to a variety of individuals (e.g., coaches, teachers, parents) to seek their advice, saying, "I call different people for different things" (Fairhurst et al., 2016, p. 4). The coaches also suggested long-term mentoring placements, including extensive hands-on learning opportunities to aid in the development of future coaches. This example is

consistent with the internship experience of the occupational therapist-coach in this study. Fairhurst et al. (2016) also recommended recruiting disability specialists, such as physical therapists and occupational therapists, to provide education regarding disability specifics and contextual aspects and to provide "tools to know what to expect and how to deal with certain situations" (Fairhurst et al., 2016, p. 5).

In a qualitative study examining the career evolution and knowledge of elite adaptive swim coaches in Canada, the authors reported that the coaches they interviewed had varied athletic careers themselves and that all coaches, including one who had competed as an adaptive athlete, began coaching able-bodied athletes first, and none had intended to coach adaptive athletes (Cregan et al., 2007). Most of the coaches had not even seen coaching as a career, but due to an "extreme level of enjoyment and love for the sport" and the coaching profession, they continued to do it. This study's findings with the U.S. Paralympic Track and Field team coaching staff was similar, with the five interviewed coaches noting they competed in track and field at the Olympic level (n = 2) and Paralympic level (n = 1), and in sport at the collegiate level (n = 4) and the high school level (n = 1). Prior to coaching Paralympic athletes, three of the five interviewed coaches had coached able-bodied athletes at an elite level (National Collegiate Athletic Association Division 1 or Olympic level).

Within the United States, the entry point for many athletes into competitive sport is through the public school system. In surveys of American coaches, they were overall supportive of school-based sport opportunities for youth with disabilities, but the coaches did not feel their training was adequate to coach them (Flores, Beyer, & Vargas, 2012;

Kozub & Porretta, 1998). These findings were consistent with similar coaching studies in Hungary (Dorogi, Bognar, & Petrovics, 2008) and Canada (Davey, 2014). In Canada, the novice parasailing coaches were unsure of certain specifics (e.g., helping athletes transfer) and were concerned with the athletes' overall safety. The coaches were also concerned about offending the athletes with the use of inappropriate language (Davey, 2014). Over time, the coaches reported they learned these skills on the job and expressed positive feelings about their experiences coaching para-athletes. Coaches report that informal experiences (e.g., hands on clinics; talking to athletes, parents, and physical therapists; and mentoring relationships) are some of the most important coaching education experiences (McMaster et al., 2012).

Like the coaches in the McMaster et al. (2012) study, the coaches in this study expressed positive feelings about their adaptive sport coaching experiences. The coaches cited these experiences as the primary motivating factor for the continuation of coaching, despite long hours and frequent travel away from home. These experiences were also a motivating factor for the coaches as the athletes' goals became their own. The coaches, in part because of their coaching philosophies, searched for ways to help their athletes reach their life goals in addition to sport goals.

Some athletes feel that their coaches should have actual disability sport experience to be effective (Wynnyk & Spencer-Cavaliere, 2013), while others believe it was not critical to success as a coach (McMaster et al., 2012). In a study examining the characteristics of wheelchair basketball and stand up basketball coaches, very few differences existed between the coaches of the sports in terms of coaching philosophy,

expectations, and perspectives of the athletes These findings suggest disability sport playing experience may not be necessary to be successful as a coach (Robbins, Houston, & Dummer, 2010). The athletes in this study were not questioned directly about their perception of their team coaches, or their ability to coach based on their disability sport experience as a participant, the primary author did not observe any behaviors or comments that would indicate that the athletes felt their coaches were not effective because they had not participated in adaptive sport. Similarly, in a society where negative social media posts are common, no post criticized or questioned the level or quality of coaching even 6 weeks after the Paralympic Games in Rio, and some athletes failed to medal.

Other studies that have examined the strategies and the influence of Paralympic coaches have also revealed many similarities to traditional sport coaches, but some unique differences do exist. For example, athletes with a disability, their parents, and members of their support-staff (e.g., personal coaches, physical therapists) tend to be critical sources of knowledge for coaches, helping them to build the athlete's autonomy both in sport and in life (Cregan et al., 2007; Fairhurst et al., 2016). Because of this relationship, the coach may adopt more of a democratic, autonomy-supportive relationship with their athletes, which leads to a greater sense of autonomy and relatedness for the athlete (Banack, Sabiston, & Bloom, 2011; Tawse, Bloom, Sabiston, & Reid, 2012). One reason that a coach may tend to lean on the athlete and their support team for this knowledge is that the coach is likely to have little knowledge of the specific disability and factors related to it, and the athlete or their support team tends to be the

best source of that information. This knowledge could range from contextual factors related to transportation to more sport-related issues, such as how to adapt a drill given the athlete's impairments or assistive device. Coaches of adaptive athletes have reported that this autonomy supportive style of coaching aids athletes in individual sports, when they are training with others, to participate fully in training and in their everyday life, and that this coaching style empowers the athletes (Cregan et al., 2007). But, this coaching style requires the coach to be more creative in order to establish a more optimal learning environment. The coaches in this study appear to have adopted this coaching philosophy as they were often seen consulting their athletes regarding their training programs at home, how they were feeling on a given day, which training modality tends to work best for them, and how best to deal with impairment-specific situations such as transfers. The coaching style is consistent with self-determination theory, in which coaches strive to develop independence and autonomy through the development of competence (in sport and life) and relatedness (Ryan & Deci, 2000). The ultimate goal being the transfer of these attributes from sport throughout their entire life.

Certain challenges coaches may face are unique to adaptive sport. The most commonly cited challenges of working with adaptive sport populations are of a contextual nature. Coaches must always consider accessibility issues surrounding the sport venue (e.g., door widths for wheelchairs, restroom and shower facilities), ground transportation (e.g., wheelchair accessible buses and vans, number of wheelchair users per vehicle), air transportation (e.g., pressure sores from prolonged sitting, dehydration, restroom access on flight), hotel accessibility, and restaurant accessibility, especially in

situations where athletes have varying disabilities (McMaster et al., 2012). Coaches in adaptive sport also need to be able to adapt training programs for athletes with a variety of different impairments (e.g., spinal cord injury or limb amputation) (Falcão et al., 2015). These findings suggest there are context-specific factors within adaptive sport that may require courses and learning opportunities specific to the contextual domain (Fairhurst et al., 2016).

Beyond these contextual factors related to accessibility, formal learning opportunities may also be needed to address the physiological aspects of the classification system of Paralympic sport, as well as equipment and equipment modifications for their athletes (Fairhurst et al., 2016). Primeau et al. (2015) postulated that the main challenge for adaptive sport coaches is to understand the nuances of the various classifications and their implications. Then, the coaches may develop safe and effective training programs to maximize their athletes' potential. Implications associated with the different classifications include issues related to the biomechanics of the adaptive sport, potential movement dysfunctions and injury patterns associated with different disabilities, and potential medical issues that might hinder performance and affect safety. These issues include thermoregulation issues, boosting (voluntarily inducing autonomic dysreflexia for performance enhancement), pressure sores, and infections. The ability to be creative and to adapt programs based on individual needs will determine the adaptive sport coach's success.

While the challenging contextual and classification issues are obviously important, the ability to address the psychosocial factors found in adaptive sport is also

an important factor in developing successful programs. Formal coaching education courses may provide novice coaches with technical and tactical knowledge, but they often do not adequately prepare coaches for managing social and personal issues (Cassidy, Jones, & Potrac, 2004). Many coaches have been trained in some skills, such as mental imagery, emotional control, and attentional focus, which could be used with any athlete or high performance situation. However, most coaches have not been trained in building team cohesion, which has been linked to improvements in team satisfaction and success (Bloom, Stevens, & Wickwire, 2003), despite the fact that sport psychology practitioners within the U.S. Paralympic program have advocated for such training (Moffett, Dieffenbach, & Statler, 2009).

While team cohesion is important in any group effort, it may be even more important in the adaptive sport community because the disabled athletes are at greater risk for psychosocial and developmental challenges (Campbell & Jones, 2002). While human behavior could be described as an individual construct, most recognize the importance of groups in regards to behavior, and the group dynamic cannot be underestimated. In fact, some have argued that individuals have a need to belong to a group (Baumeister & Leary, 1995) and that cohesion is the most important group variable (Lott & Lott, 1965).

When looking at team cohesion within Paralympic sports in Canada, coaches discussed the importance of team members building a relationship outside of training and competition and that due to geographical constraints, technology (e.g., Skype, iMessenger) is often used to build and foster team cohesion (Falcão et al., 2015). The

coaches also stated that even when face-to-face at camps the focus should not be completely on training, but topics outside of sport, such as the athletes' outside of sport interests and endeavors (family, friends, recreational and educational activities, work situations) needed to be discussed to build trust and relationships. The coaches reported the use of social activities, such as team dinners and team activities, as a way to build relationships and cohesion. They also mentioned that due to varying disabilities and impairments these activities usually could not be completed on a whim but required advanced thought and preparation due to potential accessibility issues. While the idea of team cohesion seems obvious in a team sport, such as wheelchair basketball, individual sport coaches like those in swimming and track and field value this dynamic. Part of the team dynamic is the process of adding new team members. Paralympic swim coaches have reported the importance of a welcoming environment, for reasons related to continued participation and performance (Cregan et al., 2007).

Unique ethical concerns within adaptive sport that coaches must consider include issues surrounding classification and the potential of some athletes to attempt to cheat in an attempt to be classified at a lower level to have a competitive advantage (Bredahl, 2011). Coaches have an ethical responsibility to discourage such attempts and to report them if discovered or risk suspension by the IPC. Also, given the potential psychosocial impact of sport in the lives of those with disabilities coaches also need to morally consider whether they have a responsibility to help adaptive athletes transition out of sport once their competitive careers have ended (Martin & Whalen, 2014).

Conclusion

The coaches in this study often became emotional during their interviews when describing some of their athletes and the transformation of their athletes through adaptive sport experiences. These coaches acknowledged that every coaching position can have its challenges, and that some of the challenges within adaptive sport can be different from those in able-bodied sport, but that the athletes and their experiences working with this population were often their most rewarding ones.

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CHAPTER VIII

PARALYMPIC TRACK AND FIELD CLASSIFICATION: A QUALITATIVE STUDY OF EVENTS IN THE LEAD UP TO THE RIO PARALYMPIC GAMES

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Abstract

The purpose of this study was to examine the U.S. Track and Field team classification issues during the 2016 season, their effects on team members, including the perspective of some classifiers. U.S. Paralympic Track and Field hopefuls for the Rio Paralympics [athletes (n = 103), staff (n = 26), family (n = 4), and classifiers (n = 3)] were observed and select participants interviewed. Observation notes, transcribed semi-structured interviews, social media, and media coverage were analyzed using Morgan's practice community to theoretically frame this phenomenological study. Study rigor was established through a variety of methods, including triangulation of methods and sources. Classification is seen as a barrier to athlete recruitment and continued participation in elite adaptive sport. Classification issues involving ambulatory sprinters and wheelchair racers produced common themes related to psychosocial and potential ethical issues, and identification of potential opportunities for improvement. Lack of transparency and

inconsistency by Paralympic officials and classifiers led to mistrust of the classification system. Potential opportunities for improvement include increased athlete involvement; transparent communication of factors involved in policy decisions; and examination of specific impairments and performance enhancing technology. Intended to ensure fair competition, our results indicate the classification process is embroiled in controversies that detract from the validity of the system itself. Appearance of illegitimacy of the classification system threatens the Paralympic movement. Classifiers discussed the importance of the classifier in ensuring fair competition for all participants, including not disadvantaging the entire field for the benefit of one questionable case.

Keywords: adaptive sport; Morgan's practice community; barrier

Introduction

At the 2016 Rio de Janeiro Paralympic Games, Greek runner Michail Seitis ran a 49.66 second 400m, setting the world record for the T44 class as an athlete with a unilateral transtibial amputation. However, in that event he finished sixth behind five T43 athletes, those having bilateral transtibial amputations (International Paralympic Committee [IPC], 2016c). The competition rules had put these two classes together off and on for many years, but the validity and fairness of doing so has been questioned.

A variety of barriers to participation in adaptive sport has been documented and some involved in the Paralympic movement now see classification as a barrier. In Paralympic sport, classification is the process through which athletes are systematically put into groups for sport participation based on physical ability in an attempt to provide a level playing field for competition. In 2002, Tweedy described and proposed a

taxonomy-based classification system to replace the system that was currently being used by the International Paralympic Committee (IPC). At that point, the IPC served as the international federation for seven of the 24 Paralympic sports (Tweedy & Vanlandewijck, 2009), track and field included, but the organization used a variety of classification systems. Four different classification systems were used within track and field alone: the Cerebral Palsy – International Sport and Recreation Association (CPISRA), International Stoke Mandeville Wheelchair Sports Federation (ISMWSF), and the International Sports Organization for the Disabled (a system for athletes with amputations and one for *les autres* [others] (Tweedy, 2002).

In 2007, the IPC adopted its *Classification Code* that detailed its policies and procedures regarding classification, at the same time mandating the development of evidence-based classification systems (IPC, 2016a). In 2009, the IPC endorsed Tweedy's taxonomy-based classification system (Tweedy, 2002; Tweedy & Vanlandewijck, 2009). Tweedy and others recognized the need for continual research in order to improve the classification process (Reid & Prupas, 1998) to ensure fair and competitive sport.

The current IPC classification system uses language from the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) framework that was lauded for its standardized language and international use (World Health Organization, 2018). Of interest to IPC Athletics (i.e., track and field) classification, it codes health-related functioning based on body systems and structures, as well as activities and participation. The current IPC classification system advocated for the development of functional, sport-specific systems. For example, a bilateral

below-elbow amputation may have little effect on the performance of a distance runner; however, for a swimmer, the same condition would greatly impact his or her performance (Tweedy & Vanlandewijck, 2009).

Tweedy acknowledges two challenges to functional classification: measurement weighting and measurement aggregation. How does a classifier weigh the different sport-specific deficits to properly class the impairment if an athlete has an incomplete spinal cord injury (SCI) or atypical presentation? For aggregation, some classes recognize multiple impairment types, and therefore classifiers must know how to sum the different impairment types. The need for evidence-based systems stems from these challenges.

Track and field provides events for people with ten impairment types including visual, cognitive, and physical impairments (IPC, 2017a). Eight are physical impairments (see Table 8.1). Visual impairments and cognitive impairments have different classification processes. Therefore, the focus of this paper is classification as it relates to the eight physical impairments.

For track and field classification for any of the eight physical impairments, an athlete submits an application for classification, along with supporting medical documentation, and is evaluated by a panel. The panel is comprised of a minimum of two classifiers (IPC, 2016a). One is a medical classifier with relevant professional qualifications, such as a medical doctor, physical therapist, or occupational therapist. The other is a technical classifier, someone with expertise in the sport and its related biomechanics. Both types of classifiers must be certified as a classifier. During this

panel, the athlete goes through a physical and technical assessment. Within the physical assessment, the classifier determines if the athlete has an eligible impairment type and if that impairment is severe enough to cause an activity limitation. This physical assessment usually entails a variety of testing including anthropometric measurements, manual muscle testing, goniometry, the Ashworth scale, and tests for balance and coordination. The athlete may also be subjected to a technical assessment, where the classifier examines the athlete's function related to an event in a non-competitive environment. Based on these assessment findings, the athlete is allocated a class (see Tables 8.1 and 8.2) (U.S. Paralympics, 2017). The panel also observes the athlete during training sessions and during the competition itself to ensure the panel assessment and classification was appropriate. During this process, the athlete's class can be confirmed (no longer requiring the athlete to go through the classification process) or placed under review (the athlete must go through the process again). There are also two separate procedures in which an athlete may protest or appeal their class allocation under the *IPC Classification Code* (IPC, 2016a).

Proper class allocation is imperative as the consequences and rewards for participation at the elite level are great. At risk is the ability to be competitive within the allotted class, which in turn affects monetary winnings, sponsorship, exposure, and media coverage. However, class allocation is not the only factor involved. In 2001, the IPC formed an agreement with the International Olympic Committee (Howe & Jones, 2006). Among other things, the agreement placed restrictions on the size of the Paralympic Games, limiting both the number of events and the number of athletes. Under these

standards, an event needed a minimum of six eligible athletes from at least four different countries in order to be viable (Howe & Jones, 2006). Also, there had to be at least ten athletes on the IPC World rankings for the event.

The IPC's agreement with the IOC, the drive for commercialization of the sport, and the subsequent modification of the classification system are seen by some as a shift of power and purpose within the movement that serves to "disempower" the very group it seeks to empower, athletes with a disability (Howe & Jones, 2006). With this shift, the groups most likely to feel a negative impact are those with the most severe impairments and women, as they are the athletes most likely to be "classed out" of sport (Howe & Jones, 2006). These groups are also the least likely to obtain major sponsorships as there is a hierarchy of what is considered an "acceptable" impairment within the athletic community (Sherrill & Williams, 1996), and society as a whole (Schell & Rodriguez, 2001).

Table 8.1

Eligible Physical Impairment Types and Descriptions

Impairment Type	Description
Hypertonia	Abnormal increase in muscle tension with reduced ability of muscles to stretch, joint stiffness, slowness of movement, and poor postural adaptation and balance, due to problems in the central nervous system, typical of conditions such as cerebral palsy, acquired brain injury, multiple sclerosis and stroke.
Ataxia	Lack of muscle co-ordination due to problems with the parts of the central nervous system that control movement and balance, typical of conditions such as brain injury, cerebral palsy, multiple sclerosis, Friedreich's ataxia, and spinocerebellar ataxia.
Athetosis	Repetitive and more or less continual involuntary movements caused by fluctuating muscle tone arising from problems in the central nervous system, typical of conditions such as cerebral palsy, stroke, and traumatic brain injury.
Limb deficiency	A total or partial absence of bones or joints of the shoulder region, upper extremities, pelvic region or lower extremities, resulting as a consequence of trauma (e.g. traumatic amputation) or illness (e.g. amputation due to cancer) or congenital limb deficiency (dysmelia).
Impaired passive range of motion	Range of movement in one or more joints is permanently reduced due to trauma, illness, or congenital deficiency (e.g. conditions such as arthrogryposis, ankyloses, or joint contracture resulting from trauma).
Impaired muscle power	The muscles in the limbs or trunk are completely or partially paralyzed as a consequence of conditions, such as SCI, muscular dystrophy, brachial plexus injury, polio, spina bifida, or Guillain-Barré syndrome.
Leg length difference	Minimum of 7cm leg length difference in one leg due to trauma, illness, or congenital conditions.
Short stature	Standing height and limb length are reduced due to conditions such as achondroplasia, osteogenesis imperfecta, or growth dysfunction.

Table 8.2

Paralympic Track and Field Classifications

Class Number	General Description
11-13	Track and field athletes who are visually impaired. Blind athletes compete in class 11, wear compulsory blindfolds and run with a guide runner. Athletes in class 12 are visually impaired, but running with a guide is optional. Athletes in class 13 do not run with a guide.
20	Track and field athletes who are intellectually impaired. Athletes in this class have difficulty with reaction time and memory recognition during an event. In the Rio Paralympics there are three events for men and women - 1,500m, long jump and shot put.
31-38	Track and field athletes with cerebral palsy or other neurological conditions that affect muscle co-ordination and control. Athletes in classes 31-34 compete in a seated position (using a racing or throwing chair), while athletes in classes 35-38 compete standing.
40-41	Track and field athletes with short stature (also known medically as dwarfism).
42-47	Track and field athletes with an amputation. In classes 42-44, the legs are affected, and in class 45-47, the arms are affected. Athletes in these classes compete standing and do not use a wheelchair.
T51-54	Wheelchair track athletes. Athletes in class 51-52 are affected in both lower and upper limbs. T53 athletes have fully functioning arms but have no trunk function, while T54 athletes have partial trunk and leg functions.
F51-58	Field athletes who compete sitting. Athletes in F51-53 classes have limited shoulder, arm, and hand functions and no trunk or leg function. F54 athletes have normal function in their arms and hands but have no trunk or leg function. In the F55-58 classes, the trunk and leg function increases.

Since the 1988 Paralympic games in Seoul, there has been a noticeable decrease in the number of severely impaired athletes participating in track and field (Howe, 2008). While some may argue that this decline legitimizes elite sport for the disabled, it is at odds with the stated mission of the IPC. Winning is not central to the Paralympic movement, but it is an important consideration for National Paralympic Committees (NPCs) during team selection, as they receive more publicity and increased funding based on their winnings. As such, they may not be as concerned if an event is removed from the schedule unless one of their athletes was an expected medalist (Howe & Jones, 2006). As events are removed from the schedule, the removal is often reported to be due to a perceived disinterest by athletes, but this disinterest may also stem from a perceived lack of opportunity for advancement on the part of the athlete. This dichotomy creates a tension between inclusive sport, which many equate to "everyone gets a trophy," and elite sport, which has not been fully defined by the Paralympic community.

The reasons for these size restrictions are related to event management considerations (time and space limits) and attempts to attract media and sponsors. In 2012, for the 100-m sprints alone, there were 15 men's finals and 11 for the women (Connick, Beckman, Ibusuki, Malone, & Tweedy, 2016). The 2012 Paralympic track and field event was one of the world's largest sporting events to date in terms of the number of events and number of tickets sold. An event of that size requires financial support to be sustainable. When that financial support is in the form of sponsorships and advertising agreements across different forms of media, those entities want events that are going to be both entertaining to watch and easy to understand.

Given this background, there are some within the Paralympic movement that feel the IPC has disempowered the athletes, the very group they purportedly seek to empower. Framed using Morgan's practice community (Morgan, 1994), the IPC is an institution and a secondary agent that exerts influence on the Paralympic movement. The goal of the practice community, the people intimately involved in the activity, is to empower the primary agents, the athletes. Howe and Jones (2006) posited that the IPC has removed power from the athletes that should be returned to them in a manner advocated by Morgan. Regarding classification, the IPC should consider the implications of athlete encounters with a sport classification system that has the power to influence their inclusion in the sport and their ability to make sport a financially viable option.

Understanding what barriers exist to adaptive sport participation would help in getting and keeping people involved in sport. Currently, many studies have looked at individual aspects of adaptive sport, but none have yet to examine the entire culture nor the impact of the classification system in that culture. The current study relies on a sub-set of data collected from observations and interviews of the U.S. Paralympic Track and Field team from the time of World Championships in Doha, Qatar (October 13 to November 2, 2015) to the Paralympic Games in Rio de Janeiro, Brazil (August 28 to September 20, 2016) using ethnographic methods. While no direct questions initially pertained to classification issues, it was a pervasive theme across data sources and therefore merited focused data analysis.

This particular study aims to understand the Paralympic classification process, including the perspective of some classifiers, and to examine some of the effects of

classification issues on team members. From the initial observations collected, it was determined that there existed certain controversies that detract from the validity of the classification system. Addressing these concerns is important, since the appearance of illegitimacy threatens the whole Paralympic movement.

Methods

The methods for this study, including the participants and data collection, evolved from the previously described feasibility study (Chapter IV). After gaining Institutional Review Board approval through Texas Woman's University, the study was expanded to include all athletes and staff that were identified as Rio 2016 Paralympic hopefuls, through their involvement at one of the U.S. Paralympic Track and Field sponsored events. A total of 136 people, including athletes (n = 103), coaches and staff (n = 26), family members (n = 4), and classifiers (n = 3) consented to participate and were thus observed and/or interviewed, social media accounts (Facebook, Twitter, and Instagram) followed, and relevant Internet-accessed news articles and televised stories gathered. Details of the ethnographic methods have been published in Chapter IV with the exception of a broader timeframe (from the 2015 International Paralympic Committee World Championships in Doha, Qatar, through six weeks after the 2016 Paralympic Games in Rio de Janeiro) and longer observation period including four team training camps/training facilities and six competitions (events ranged between 4 and 23 days).

Purposeful snowball sampling was used to select representative participants for the interviews based on predetermined criteria. Initially classifiers were not considered part to the team so they were not interviewed. However, as classification issues became a

prevailing theme, three International Paralympic Committee (IPC) classifiers were interviewed along with the 24 athletes, 11 coaches or staff, and 4 family members. Of the 42 interviews, 28.6% were conducted via telephone or videoconference, including all three classifiers, due to scheduling conflicts during the camps, or events, prohibiting completion of them in person. Transcripts were transcribed verbatim.

For the purposes of this study, social media posts that illustrated themes common in the literature to classification were collected for coding and analysis. Online articles, interviews, and op-eds that were published in relation to classification were also considered.

Paralympic classification is a specific circumstance that is a pervasive experience and discussion point within the Paralympic culture making ethnographic data collection methods appropriate. The primary investigator (PI) served as a member of the volunteer medical staff as a physical therapist and athletic trainer and thus an "insider" of this cultural group. This data collection method allowed a holistic approach focused on discovery and yielding rich data from a variety of sources of which all was entered into NVivo 11 software (Qualitative Solutions and Researching International, 2015) for data management, preliminary analysis, and to assist with triangulation of sources. A thematic map was drawn to visually determine the patterns and relationships between initial themes (see Figure 8.1). Furthermore, the meaning of classification in the lives of the individuals in this study (in all roles) makes phenomenological data analysis methods pertinent through the lens of previous research and Morgan's practice community. We used this theory to frame the data analysis because of our belief in the power of sport to

empower individuals and foster autonomy in sport, and in life. It is our belief that a secondary agent, such as the IPC, may impede the ability of sport to empower athletes if left unchecked. This multi-method approach (Collier & Elman, 2008) allowed us to examine the participant's experiences and perspectives related to classification with an eye towards the cultural group's ability to regain some control, or more input into the classification process.

Results

Several themes were identified from the interviews and social media posts specific to classification (see Figure 8.1). For the U.S. team, the classification and event management issues and controversies involved the classes of ambulatory track athletes with lower extremity impairments (T43 and T44) and the wheelchair racing classes (T52-54). For the T43 and T44 classes, the issues were related to the combining of the classes of athletes with unilateral and bilateral lower extremity involvement and the inclusion of *les autres*. Leading up to the 2016 Rio Paralympic Games, a rule clarification regarding the classification of wheelchair racers based on their trunk function also raised concerns. From these specific issues, broader themes of the potential impact of these changes on current and future athletes were examined and suggested avenues through which to improve the classification system and IPC communication were identified.

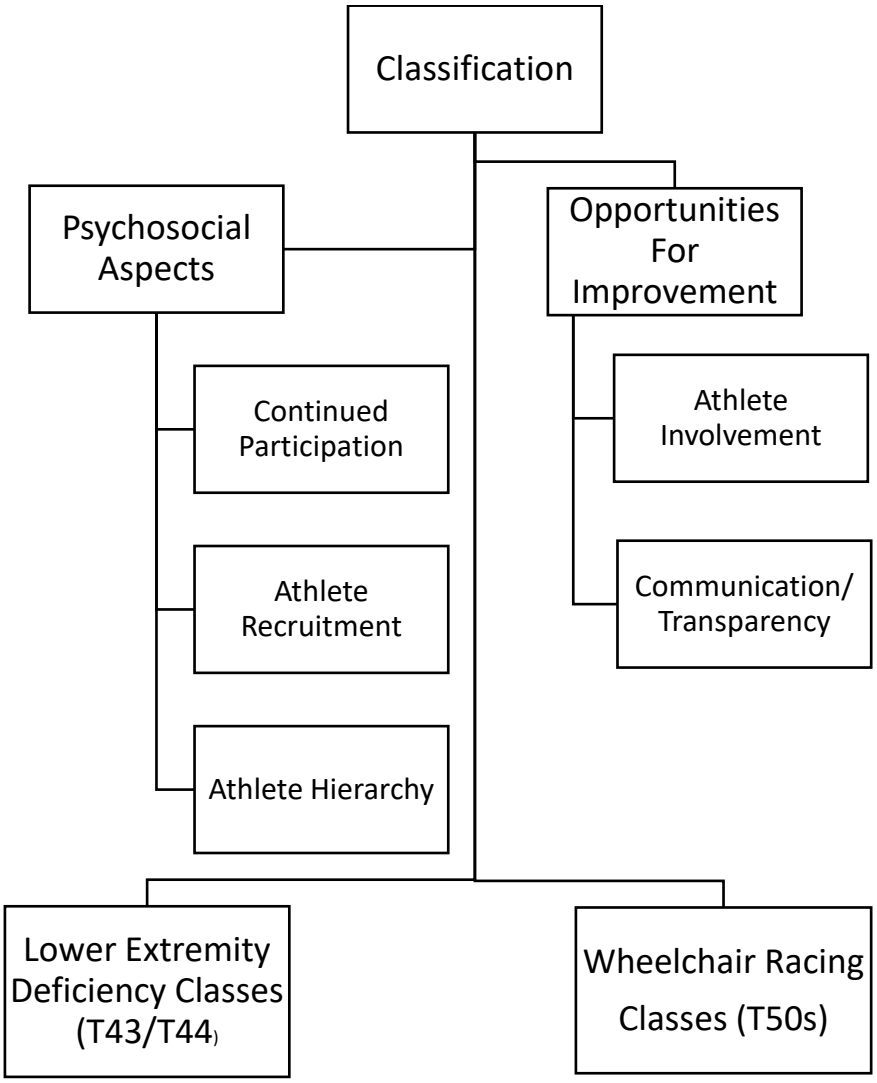

Figure 8.1. *Thematic Map of Classification Results*

Bilateral, Unilateral, and *Les Autres* Running Classes

Discussion around the classification and event management of the T43-T44 classes were important topics. Athletes with lower limb deficiencies, especially those that run with running-specific prostheses (RSPs), characterize these classes. However, these classes also include athletes with other lower limb deficiencies. Based on interviews and social media posts, important themes were the overall validity of combining the T43 and T44 classes, frustration with the combining of the T43 and T44 classes at the Rio Paralympics, and the validity of including *les autres* athletes in the T44 class. The role of technology was also observed as it relates to impairment and the capability of both runners with amputations and runners without amputations to enhance performance through technical advancements. As such, technical doping was discussed.

Athletes with unilateral transtibial amputations expressed frustration with the inclusion of other athletes in the T44 races, as seen through social media postings. On one side was the inclusion of the T43 class, which consisted of athletes with bilateral transtibial amputations. On the other side was the classification of *les autres* athletes, such as those with joint fusions within the T44 class. One athlete with a unilateral amputation implied on a social media post that athletes with bilateral amputations had a performance advantage, and that they could more easily commit technical doping. Technical doping is the use of sports equipment to gain a competitive advantage against the spirit of sport. One example the athlete provided was the ability for an athlete with a bilateral amputation to change the alignment or change the height of their prostheses for different races, where the changes would be advantageous. One coach's opinion was that

athletes with a bilateral amputation had an advantage due to a more symmetrical gait. On social media, one unilateral sprinter mentioned an article in a popular science magazine highlighting the Pistorius case, disparaging the lack of attention given to the disadvantage of athletes with a unilateral amputation in Paralympic competitions. The interviewed classifiers agreed that the two groups were biomechanically different. The coach and the classifiers also commonly expressed the need for more research on the topic, especially regarding whether either group was at an advantage compared to another. In contrast to the athletes, one classifier believed that what evidence exists supported that athletes with unilateral amputations had an advantage in shorter races (100m and 200m). However, this advantage may not hold true for longer races (400m) where athletes with bilateral amputations potentially having the advantage. As the classifiers pointed out though, this issue is not a classification issue but, instead, an event management issue. The classes are combined to limit the number of events and, perhaps, to ensure that there is quality competition in the events.

With regards to runners without an amputation in the T44 class, there was cynicism and frustration when athletes without a perceivable impairment would pass the threshold for minimal impairment. An interviewed coach described a young athlete who reported feeling nervous that he, a *les autres* athlete with clubfoot, was highly competitive against amputees. The young athlete felt like he might not belong in the group. The same coach expressed concern that the sensory feedback from a non-amputated limb, such as an athlete with an ankle fusion, provided an advantage.

Sentiments varied between classifiers in regards to the *les autres* athletes and whether or not they were at an advantage. One classifier thought the complexity of an ankle fusion and similar impairments was too great to accurately delineate any advantage. Furthermore, she reiterated a common problem: that creating another class for these athletes leads to an overabundance of classes and no "true competition" (Classifier 2). Another classifier thought that athletes with amputations often had the advantage; however, she stated that improvements in bracing, such as dynamic ankle foot orthosis (AFOs), are complicating the picture by improving the function of fused joints (Classifier 3).

Social media posts from some athletes expressed belief that the rules and event schedule (and lack of enforcement of RSP height requirements) were an attempt to maximize the competitiveness of the host country for the Rio Paralympic Games, as one of Brazil's marquee athletes was a bilateral amputee known for having RSPs longer than what would be allowed under the maximum allowable standing height (MASH) rules. Furthermore, there was also a focus on technical doping in the bilateral class and other areas of intentional misrepresentation. In this context, technical doping referred to athletes with a bilateral amputation who would make their prostheses artificially longer with the goal of increasing stride length and providing an advantage. Intentional misrepresentation in other classes or impairment types involves misrepresenting oneself as more severely impaired than one actually is. The role of intentional misrepresentation is discussed later.

Review of one athlete's social media accounts showed a viewpoint that the Paralympic MASH height was too generous and that athletes with a bilateral amputation changed their prostheses' heights in violation of the rules. That athlete felt that the IPC was turning a blind eye to these infractions because of the public attention these athletes, and their times, brought to the Paralympics. Similarly, a wheelchair racing athlete, felt that the IPC was not enforcing the [MASH] rule until after the Rio Paralympics because the narrative they want is there (regarding a specific athlete's involvement in the upcoming Games). I just think that it's wrong that other athletes are being negatively impacted or will lose a chance at medaling or making a final, or even going to the Games for that matter, as a direct result of their failure to enforce a rule that they know is wrong (Athlete 2).

Perhaps the wheelchair racing athlete felt so strongly about an issue that ultimately did not affect him because of statements that he heard from a fellow U.S. athlete during the U.S. team trials. Both athletes were waiting for races in the call room when an athlete with a bilateral amputation, preparing to run the 400-m final,

> was bragging about how a few months ago he wasn't running sub 59's for his 400, and increased his leg length, and all of the sudden was running 50's, he was bragging about this and I'm just sitting here listening to this and thinking how can you compete as an athlete knowing that what you are doing is wrong….it reflects poorly on the entire Paralympic track movement (Athlete 2).

It is also important to note that not all athletes with a unilateral transtibial amputation feel that they are at a performance disadvantage compared to athletes with a bilateral transtibial amputation or to the *les autres*. When a former T44 world record holder was questioned in a social setting regarding the controversy of athletes with

bilateral and unilateral amputations competing against each other, despite the perceived advantage of increased leg length and symmetry in the bilateral class, he stated, “The only ones complaining are those not winning.” However, it should be mentioned that his primary events were the shorter sprints (100-m, 200-m) in which it is believed that athletes with bilateral amputations are not at a distinct advantage over athletes with a unilateral amputation (or similar impairment), unlike the 400-m where it is perceived that those with bilateral amputations are at an advantage.

Wheelchair Racing

The T43-T44 classes were not the only ones with classification controversy. Shortly before the 2016 Rio Games (May 2016), the IPC issued a rule “clarification” to classifiers. This clarification was meant to address inconsistencies in how trunk strength was assessed and used to determine the correct class for athletes that used a wheelchair in the T/F50 classes. Under the clarification, if a muscle contraction could be felt when the athlete coughed, then they would be placed in the respective higher class. As defined, these classes contain athletes who range from no to moderate to full range of trunk control. Based on interviews, issues with the rule clarification were based on whether the assessment method was valid, and whether the rule clarification process and timing were appropriate.

One interviewed athlete that had been reclassified from a T52 to a T53 due to a palpable contraction with a cough thought the system had misclassified him in part by disregarding his additional impairments. He and his coach appeared to understand the complex role of the trunk in wheelchair sports, including its function in other aspects of

racing besides the acceleration seen at the start, including the role of the trunk in the turns. Additionally, he thought that his additional upper extremity impairments and spinal fusion should mitigate any palpable trunk function, and would "balance [him] back down" to a T52. Because of the reclassification, he could not be sure of his level of competitiveness. As a T52, he was highly competitive, but as a T53, he was unable to qualify for the Rio Paralympic Games (the athlete was reclassified as T52 in 2017). His coach reported that after he was classed up, knowing that his best times would not be competitive as a T53, that the athlete lost his motivation in practice and competition for both wheelchair racing and wheelchair basketball. His coach mirrored this sentiment when recruiting younger athletes; it was difficult to get people engaged in adaptive sport when they could not trust in an inconsistent and disappointing system.

In another case, a female athlete who had been classified as a T53 since 1999 was moved from the T53 class to the T54 class in 2016. Her classification had been confirmed and, therefore, she should not have had to go through the classification process again. However, in 2016 she was contacted by the IPC and was told that she needed to go through the classification process again because the paperwork had been changed and anyone classified before 2007 needed to go back through the process. Her first IPC event in 2016 was the Swiss Invitational. She went to her scheduled classification session and was classed up to T54 due to a palpable contraction with a cough. That decision was protested and in the months leading up to the Rio Paralympic Games she would go through the classification process a total of six times at three different events. During the process, when the new classification was questioned, she was told by a variety of

classifiers that: (a) her Harrington rods were a performance enhancer, (b) being classed up did not matter because she would still be competitive (her performances and times should not be factored into the decision), (c) given her diagnosis of transverse myelitis, a functional model should not be used for classification but a medical one should be used instead, and (d) based on her level of transverse myelitis, she should have some abdominal activation and therefore should be classified as a T54, not a T53.

Based on the *IPC Classification Code*, classifiers should only use a functional model for classification. From the perspective of this athlete and her coaches, if she was to be reclassified months before the Paralympic Games, the entire T53 class should be reviewed since there are athletes in the T53 class that have as much or more function than her, including some that are ambulatory. In her case, the athlete had to choose to continue to fight the new classification, in which case her status would have remained under review and she would be ineligible to compete in Rio, or she had to have her new class confirmed as a T54 and thus be deemed eligible to compete in the Rio Paralympic Games. By deciding to compete, and being confirmed, she is not eligible to go through classification again unless something new occurs medically that would affect her function and thus her classification.

This athlete has always competed in the 50s classes, which normally is represented by those with spinal cord injuries and congenital conditions such as spina bifida. This might be what led one classifier to attempt to use the American Spinal Injury Association (ASIA) Impairment Scale to assist in classifying her despite the fact that the ASIA is only appropriate for use in patients with spinal cord injuries, not those with

inflammatory neurological conditions such as transverse myelitis. Its use is not typical for IPC Athletics classification.

In filing a letter in support of her appeal, a leading physician involved in IPC sport wrote,

> From my perspective it can be assumed that with spinal fusion (congenital or acquired) - the issue is not that the abs are denervated, but rather that they can't do their job from a functional standpoint because even with firing, they are firing on a fixed segment. Imagine if you fired your biceps, but your elbow was fused…. in this case, even though your biceps is 'normal,' it's not doing much good.

Another physician specializing in transverse myelitis stated in his letter,

> I think the critical issue is that TM [transverse myelitis] is not the same as traumatic spinal cord injury. And scales that were developed to define the severity of traumatic spinal cord injury cannot be used to define the severity of TM. The disease processes are different: traumatic spinal cord injury results in direct compression and death of axons and secondary excitotoxic and ischemic injury of neurons; TM is an inflammatory disorder with immune-mediated injury. The only commonality is that the target organ is the spinal cord.

Classification Process

When discussing the wheelchair rule clarification, the broad topic of inconsistency in the classification process was discussed. Aside from the validity of the clarification, a wheelchair athlete and his coach thought that testing was inconsistent from previous assessments and did not follow the protocol for classification. The female wheelchair racer, who was reclassified after 16 years of competing, also described inconsistencies during her six classifications sessions in the lead up to the Rio Paralympics. Additionally, the coach brought up inconsistencies in how T30 athletes – those typically defined by cerebral palsy (CP) – were, in short succession, combined with and then separated from the T52 classes. Additionally, she described situations where

classifiers made individual judgements on requiring athletes to race standing versus using a wheelchair, claiming no written policy existed for those scenarios.

The classifiers admitted some inconsistency within the classification process. One classifier noticed the discrepancies when working with international classifiers. Most of the classifiers attributed the inconsistency with poorly worded manuals, too frequent changes in rules or rules that apply differently to different competitions, and inconsistent circulation of policy changes or clarifications. One interviewed classifier was involved in the early development of the *IPC Classification Code* and was familiar with the structure of classification from the national to international level, and among different sports. While admitting that problems still existed, she emphasized that the *Classification Code* itself was developed to improve the consistency of classification and to create the structure for the sharing of policy changes.

Perception of Classification and Psychosocial Aspects

The athletes' perception of the classification process has generally been a negative one. When asked how his reclassification ruling affected him personally, a male wheelchair racer stated,

> It took my chance to go to Rio away…which was kind of a bummer but it's pretty much the big deal…It was very irritating and annoying because…we even told them it says in the rule book you're supposed to do this and that. They're like, "No that's not how," and everything like that. So it was kind of like, you guys are messing me up here…they said the policy had changed and that they were looking at things differently now. And I asked to see the documentation that showed that it's changed and they couldn't produce anything (Athlete 24).

Likewise, a female athlete remained professional in her social media posts (Figure 8.2a) but her teammates and other supporters likely expressed what she was feeling (Figure 8.2b).

A high-level classifier grasped the "consequences of those sorts of decisions [determining class]," but that "people do this because they're passionate about what Para-sport does for… people they may have treated" (Classifier 1). She describes the assessment process from a classifiers viewpoint: classifiers are "an advocate for every athlete and not just the one in the room with you at that moment" (Classifier 1). Also, from her experience with the IPC directly, she emphasized that for Paralympics to operate and for elite athletes to stay competitive, money is necessary. Because of the need for revenue, events must be manageable and competitive. When conveying a view of openness to athletes, another classifier talked about her own method of explaining the classification process and policies to athletes she would classify. She also pointed out that most of the time athletes notice the good things: "When we make a positive change, the thing that's funny is they go, 'Oh well they finally got it right'" (Classifier 3). However, for the male wheelchair racer, even though he was re-classed as a T52 in 2017 (a positive change for him), it was too late for him for Rio. Additional statements from the classifiers seemed to describe a system that had its problems, but that is significantly better than it used to be, and that there were inherent "gray areas" in classification (Classifier 2).

Figure 8.2a and 8.2b. *Instagram Posts in Response to Re-Classification Decision.* (a) Athlete's post expressing frustration at spending her time protesting the classification procedures instead of preparing for her upcoming races. (b) Athlete's supporter expressing his frustration with her situation.

Inclusive versus Elite – Role of Event Management

Many of the issues the athletes cite as "classification" controversies are in actuality event management issues. To ensure a manageable number of events, to allow for competitive events that will draw commercial interest, and to avoid the perception that "everyone gets a medal," many athletes and staff believe that classes need to be combined and simplified.

While recognizing that even he would likely be "classed out" of competition one wheelchair racer stated,

> You can't be inclusive and be elite…I think that you have the VI's [visual impairment], you have the 400 champion that way, you have the amputees, you have the quads, you have the CP's, and then have the wheelchair everyone else. And I think that is easy enough way to market these things. And I think that makes the sport more elite and I think it makes it more competitive, and the sport would grow I think, that way. As opposed to now, the IPC, by being more inclusive, they have had to add more events to be more inclusive, but have taken out events in order to be inclusive, so now there is no wheelchair 200-m race anymore, because they had to remove all those [other] events for every single wheelchair class to make room for those events (Athlete 2).

A different wheelchair racer had similar thoughts regarding inclusion versus elite sport,

> they're [the IPC] in a constant struggle, between trying to decide whether they are elite sport or inclusive sport and you can't be both. Like you get to a point where you can't be both inclusive and elite and I feel like they run into this roadblock and they're constantly sacrificing one for the other, and it's not always the same, it's not always, but recently it's been sacrificing elite for inclusive which you know, it all depends on what you believe the IPC is there for. I believe that the growth of adaptive athletics has to be pushed forward by the elite group, but I might be wrong in that…(Athlete 10).

Elite status conjures ideas of professional sports, and with that, the issue of money. An international classifier that has been involved with the Paralympic movement for decades stated,

> If money is the big driver, that's what's going to happen. I always think if it goes that route, we're going to lose people. We're going to lose events, and sports, and groups of athletes…I think we have to protect our athletes with severe impairment or they'll be gone. That's just my personal opinion. But the IPC has a standing committee for what they call athletes with high support needs. And they're restructuring that, they've got a group of athletes that are involved in asking these exact sorts of questions (Classifier 1).

A physician that has participated in the Paralympic movement as both an athlete and a board member stated that the Paralympics,

> provides an equal platform of opportunity for those who wish to truly excel and to truly dedicate their life to excellence in sports and, …it's all at the end of the day about autonomy and self-determination so not everybody has the physical potential or the inherent skill to be an Olympic athlete, but if you do and if you want to work hard enough at it there should be a platform for you at least to try…so it offers that quality of opportunity at that elite level and then I think both for Olympic and Paralympic sport, they both drive just our sort of cultural concepts around exercise and sport. You know for every Olympian out there, there are probably 10,000 kids who dream of being an Olympian and who work really hard to potentially someday be one and so although not everybody will be one it still creates this important sort of pyramid of opportunity where you have, a, you know broad spectrum of grass roots, entry points where you sort of work up the pyramid dependent on sort of your skill level and your dedication. So I think that the same, the same potential exists in Paralympic sport. I think the pyramid is less developed, but the fact that the elite opportunity exists has the potential to, and I think in some ways already does drive that pyramid of, of broad based grass roots options and participation for people and we need to continue to build on that part of it (Healthcare Provider 1).

Opportunities for Improvement

Many athletes have requested a greater voice in the classification process as seen through social media posts. A particular athlete on social media proposed a whole athlete council to liaison with the IPC. The rationale is that since the athletes are affected by any classification decisions, their voice is the most important. Additionally, athletes believe there is a lack of transparency from the IPC that could be improved through better involvement of the athletes.

Both interviewed team members and classifiers agreed with these opinions to an extent. One high-level classifier pointed out that technical classifiers are those with sport-specific knowledge and are often former athletes. Some sports, such as wheelchair rugby, were developed from the ground up by athletes and so athletes remain heavily involved. Additionally, she reiterated that the Classification Committee often involves former athletes. Interestingly, one classifier and a coach pointed out that often times active athletes may have their own, or their country's, interest in mind rather than the sport or Paralympic movement as a whole. The potential for a conflict of interest is an important point given that some competition rules, such as the combining the amputee classes for Rio, were perceived to be put in place for events where the host country had competitive athletes. Thus, some athletes perceived that IPC rule changes and policies were only to benefit certain athletes, classes, or events for promotional opportunities.

Team members and classifiers gave feedback on how the classification process and system could be improved. While critique was a part of the themes identified above, these individuals emphasized specific areas. Across both groups, there was an emphasis on the need for research to improve and validate the classification process and improved transparency and communication of any changes. It was also noted that the overall perception of the classification system differed greatly between team members and classifiers.

The wheelchair racer and his coach interviewed following his classification issues thought research could better explain the aggregate effect of multiple physical impairments. Classifiers brought up the need for research to justify how trunk function is

used to determine class. Notably, one classifier discussed the need for research to understand the role of assistive technology in adaptive sport. Some examples given were the role of dynamic AFOs for athletes with joint fusions, the role of the prosthetic leg in long jump, and how valid the MASH requirements are for athletes with a bilateral amputation.

All involved in the wheelchair cases and the interviewed classifiers agreed that in the cases involving the "rule clarification" if a few athletes were to be called in for re-classification and/or review, then the entire class should be reviewed to allow for consistent application of the rule clarification across the board.

Discussion

Given the complexity of the classification system, the number of impairments included in track and field, and the total number of events, the potential for controversy was high. The *IPC Classification Code* was developed to provide a framework to minimize issues. As previous researchers and participants in this study reported, additional research is needed to ensure a fair system. In this study, we found results similar to previous studies and new findings that should be considered moving forward.

Bilateral, Unilateral, and *Les Autres* Running Classes

The idea that athletes with a bilateral amputation have an unfair advantage was first proposed when South African sprinter Oscar Pistorius, an athlete with bilateral transtibial amputations, wanted to compete in the 2012 Olympic Games. Pistorius was not being compared against other amputees, but rather able-bodied athletes (Weyand et. al, 2009). Although the data reflected a single subject, the subsequent study was the most

direct analysis of sprinting mechanics in an athlete with a bilateral amputation. The mechanics were shown to be different than able-bodied sprinting mechanics, and even from athletes with a unilateral amputation. Weyand et al. (2009) reported that Pistorius was able to obtain aerial times (time between alternating ground contact) that were unnaturally short. Among able-bodied sprinters, even between different athletes with different top speeds, aerial times were constant, whereas Pistorius's times were significantly shorter (on the order of 4 standard deviations). These aerial times are important for sprinting: they represent the time necessary to reposition the limb to apply force to the ground for propulsion. This differed from able-bodied mechanics, where ground contact forces were viewed as a more important determinant of performance (Weyand et. al., 2009; Weyand, Sternlight, Bellizzi, & Wright, 2000). Weyand and others concluded that Pistorius could reposition his legs quicker due to his ultralight prostheses, and, therefore, the prostheses gave him an unfair advantage. Grabowski, who offered a counterpoint perspective to Weyand's work, believed that Pistorius's mechanics reflected a compensation for the inability to provide the necessary ground reaction force (Weyand, Bundle, Kram, Grabowski, McGowan, Brown, & Herr, 2010). Therefore, while these studies came to different conclusions, they agreed that athletes with a bilateral amputation may use different mechanics when running and sprinting compared to those with one or two sound legs.

Symmetry of gait is also important in sprint performance (Exell, Gittoes, Irwin, & Kerwin, 2012; Aslani, Noroozi, Yee, Chao, & Maggs, 2016). While an athlete with a unilateral amputation and a lightweight running prosthesis may be able to reposition that

limb quickly, the athlete's performance may be limited to matching the swing rate of their sound limb. Likewise, athletes with bilateral amputations may be at an advantage because of their ability to extend their leg length symmetrically, and thus increase stride length, which could also improve their performance. Extending the height of one leg, in athletes with unilateral amputations, would likely be disadvantageous, as gait asymmetry would increase. A leg length difference (a minimum of 7 cm) is itself a recognized impairment.

With regard to runners without an amputation in the T44 class, there is not enough research to determine if the athletes with an amputation, or those without, are at the greatest advantage physically. However, there may be a certain psychosocial effect in play. Howe (2008) reported a social hierarchy of impairments within the Paralympic movement. In Mastro's hierarchy, *les autres* athletes tended to be considered less favorable by the entire Paralympic movement than those having an amputation (Mastro, Burton, Rosendahl, & Sherrill, 1996). One of the coaches interviewed reported that she had a youth athlete that was hesitant to compete in the T44 class as a *les autres* because he was uncomfortable with his self-perceived advantage.

Combining the T43 and T44 classes falls under an event management policy rather than a classification rule but was broadly considered a classification issue by athletes. The classes were combined because of limitations on the number of medal events, and the relatively small number of athletes with a bilateral amputation in the past. The Paralympic committee had decided during the 2016 Paralympic cycle to separate the classes for World Championships, only to recombine them for the Paralympic Games,

adding to some athletes' frustration (IPC, 2017a). While the IPC published the rules at the beginning of the cycle, the back-and-forth reversal of the rules for competitions in regards to the combined classes and the lack of a limitation on RSP height was a source of frustration for runners with lower extremity amputations even though they entered the Paralympic cycle knowing the event format (the format was available online in 2013).

Athletes with a bilateral amputation also have direct control over the length of their prostheses and, as such, can control their maximum standing height (Connick et al., 2016). In athletics, control of standing height is related to performance. Recent studies have documented the correlation between leg length and sprint performances in athletes with a unilateral amputation (Hobara, Hashizume, Kobayashi, & Machmaru, 2016; Hobara, Sano, Kobayashi, Heldoorn, & Mochimaru, 2016). Unilateral amputee sprint performance in 100-m races was positively correlated with stride length; similar results were observed for 200-m races. Although standing height is not directly causal of top stride length, it has been shown that lower limb length is a main indicator of optimal stride length (Weyand, Smith, Puyau, & Butte, 2010; Cavagna, Saibene, & Margaria, 1964).

The IPC classification now has a maximum allowable standing height (MASH) for athletes with a bilateral amputation (Connick et al., 2016) and this implies some acknowledgment that using unnaturally tall RSPs can confer an unfair advantage. In 2014, the IPC published a formula to estimate pre-amputation stature using ulna length and demispan (distance from the sternal notch to the tip of the middle finger). However, a recent study showed that this method can overestimate pre-amputation stature (Connick

et al., 2016). Additionally, Connick et al. validates and offers alternative formulas for determining maximal allowable standing height; these generally relied on additional measurements to refine stature estimations.

Under a fair and just system, each athlete should receive their just reward if they abide by the rules of the contest (i.e. the victory should go to the most deserving) (Jones & Howe, 2005). Fairness, as an obligation, comes when one voluntarily engages in rule-governed practices (Loland, 2002). By participating, one is consenting to the rules that govern the contest. By participating, the athletes with the unilateral amputations that complained on social media about competing against athletes with bilateral amputations and *les autres* consented to the rules when they voluntarily engaged in the events. However, their only alternative was to not compete. Due to these legitimacy and participation concerns, the IPC has stated it is committed to a transparent and defensible system of classification (IPC, 2016a). Like Morgan's (2002) critique of Western sport in general, the athlete that bragged about improved sprint times with the lengthened prosthetics allowed his own self-gain to win over any moral regard for others. On some level, the IPC is responsible for policing these incidences.

Wheelchair Racing

The abdominal strength rule clarification appears to base the classification solely on the palpable muscle contraction. Several studies have investigated trunk position and trunk range of motion parameters in wheelchair racing (Goosey & Campbell, 1998; Wang, Deutsch, Morse, Hedrick, & Millikan, 1995). However, trunk strength itself was not evaluated until 2011 (Vanlandewijck, Verellen, Beckman, Connick, & Tweedy,

2011). In this study, 13 international wheelchair racers were evaluated for trunk strength, and over-ground and ergonomic wheelchair acceleration. Vanlandewijck et al. concluded that trunk strength had no effect on wheelchair acceleration. However, Vanlandewijck et al. pointed out that the athlete that performed the lowest was a T53 athlete, compared to the others being T54 racers but stopped short of proposing that athletes with no trunk control should compete with those with full trunk control. Lastly, the specific result, that trunk strength and track acceleration only accounted for 7% to 10% of performance variation, while not statistically significant, could be relevant in the competitive environment. Vanlandewijck et al.'s (2011) study did not address classification developments by Tweedy that emphasize the need for consideration and aggregation of multiple impairments (Tweedy & Vanlandewijck, 2009). Muscle activation may indicate innervation; however, individuals within the T50 classes may also have spinal fusions that prevent manifestation of any trunk range of motion. Additionally, athletes within this class have varied medical diagnoses that can present with mixed impairments, such as having trunk control, but having significant upper extremity impairment such as transverse myelitis and arthrogryposis. Therefore, there is little to guide classifiers on how to consider these multiple impairments.

A classification system that is perceived to not be valid is a threat to the entire Paralympic movement. At the elite level, if an individual is perceived to be in the wrong class, their peers and the media question their legitimacy within the sport. If an athlete must compete against, and subsequently loses to, someone who has not been classified appropriately, the athlete may potentially miss award money and sponsorship

opportunities. This loss of funding may make participation no longer financially sustainable and the athlete may feel cheated (Loland & McNamee, 2000). If the system is perceived to be unfair at the grassroots level, participation will be discouraged, which is the opposite of the stated mission of the IPC.

While these cases do highlight the importance of continued research and refinement of the sport classes, the management of these cases also highlights the importance of consistency and proper communication within the classification process. Those with knowledge of these cases believed the situations would have been fairer if the IPC would have required all athletes in these classes to undergo reclassification under the rule "clarification" to allow for consistent application of the rule across the board.

Perception of Classification and Psychosocial Aspects

Currently, Paralympic sport classifiers are typically able-bodied, and athletes may perceive that sport is "'policed' by the 'able' (Howe, 2008) and see the classifiers as 'agents of social control'" (Wu, Williams, & Sherrill, 2000). The classification process, the actual athlete's experience, was perhaps best explained in an auto-ethnographic study by a former wheelchair basketball national team player in which she describes the "interrogation" of the classification process and her Paralympic story (Peers, 2011).

According to Wu et al. (2000), within the sport of Paralympic swimming:

> Misclassification is an interesting and perennial problem in disability sport. As with many others, it is the root cause of much frustration and anger (a) among swimmers who feel they have been disadvantaged by losing to a competitor who should be in a higher class and (b) among coaches and swimmers who may believe that they have been disadvantaged by being place in a higher class than their impairment warrants (p.262).

These frustrations and anger may manifest themselves through a lack of interest in continued participation. Athletes may also become frustrated and disenchanted when classes are combined due to streamlining or a lack of numbers to make an event viable. Retirement after such incidences have been reported by Howe (2008).

Within Paralympic track and field, Howe (2008) completed a qualitative study of classification. In his ethnographic study, Howe examined data collected while he competed as an athlete and served as a journalist within the Paralympic movement. Howe describes his classification process at the 1988 Seoul Paralympic Games, including the waiting, alienation, and uncertainty associated with the process; the "pigeonholed" body type and the allocation of a roommate based solely on that assessment; the poking and prodding of the assessment itself; and the subjectification of being told to 'do as they (the classifiers) ask' and not to bother them with 'trivial' questions. Howe wrote, "My body has been processed – classified – as an object of medical science where my disembodied identity does not seem to matter" (p. 503). Howe frames the Paralympic classification as a "habituation…that bodies must go through in order to be involved in Paralympic sport" (p. 503). Howe wrote these sentiments after going through the classification process once at the Games. Imagine his sentiments if he had been classed out of the Games (as the male wheelchair racer felt he was) or after having gone through the process six times and still believing he was in the wrong class (as the female wheelchair racer believed).

There appears to be a mismatch between how athletes and classifiers described the severity of the problems. A wheelchair racer and his coach both thought a lack of

transparency and inconsistency led to a significant mistrust of the classification system by athletes. In recent media highlights, accusations of intentional misrepresentation were a frequent cause for athletes to believe the classification system was broken (Taylor, 2017). Intentional misrepresentation led to beliefs that the system was either poorly constructed to begin with, or that the IPC was doing little to enforce its own rules.

These discrepancies in the perception of the classification system and process between team members and classifiers may indicate several things: (a) athletes may be misinterpreting decisions that impact them unfavorably, (b) classifiers, while well-intentioned, may not appreciate the consequences of policy changes to the extent that is satisfactory to the athletes, and/or (c) classifiers may not have the ability to change rules and policies they deem unfair, they just enforce the ones they have been given in the manner in which they have been told to do so.

Elite versus Inclusive

As the physician remarked, there is a pyramid of opportunity with the Paralympics representing the grassroots through the elite. Ultimately what is at issue is how big of a base should the elite portion of the pyramid have, what should be considered grass roots, and what level of performance should truly be considered elite. There is a belief, and some evidence to indicate that some Paralympic athletes are marginalized because they do not produce the elite, aesthetically pleasing performances desired by audiences (Purdue & Howe, 2013). Howe (2008) stated that an increase in the severity of the impairment is linked to the marginality felt by individuals within the sport, indicating that greater impairment equates to decreased

acceptance by the media, society as a whole and by others in the Paralympic movement. This marginalization is likely the byproduct of the attempt to garner greater media attention and, thus, commercial success for the Paralympic Games by attracting a viewership who can easily understand the performances of less impaired athletes and compare their results to Olympic and professional athletes (Purdue & Howe, 2013). For athletes with more severe impairments and higher support needs, such as an on-field attendant in some throwing events, their performances may be deemed inferior and their successes perceived as less valuable (Purdue & Howe, 2013). However, this marginalization runs contrary to the stated vision and mission goals of the IPC and likely has a negative psychosocial and financial impact on those marginalized.

Opportunities for Improvement

Many athletes have requested a greater voice in the classification process. Since the athletes are the primary agents and are the most affected by any classification decisions, their voice should be the most important. This sentiment aligns with previous research of Howe and Jones (2006) with regard to Morgan's practice community. In essence, the practice community, primarily the athletes, should be driving policy and practice. Morgan is suggesting that scholars should assist athletes (Morgan, 1994) in resisting their "subjectification" (Foucault, 1980) by exploring "where the power lies when social practices and institutional concerns are separated from each other" (Howe & Jones, 2006, p. 32). Howe and Jones contended that the current classification system creates tension between the IPC and the practice community and that recently the IPC has

wrestled away control of the classification system from the practice community. Ten years later, it appears this view is supported in this study. Utilizing Morgan's theoretical framework, Howe and Jones contend that the practice community, and primarily the athletes within the community, should strive to regain control of the classification system with any change in the system "occurring within an environment of consultation and consent among the practice community as a whole" (p. 43). Likewise, this would alleviate concerns of a lack of transparency and poor communication from the IPC through greater involvement of the athletes. Clearly, there were those in our study who express very similar views.

The interviewed athletes, coaches, and classifiers agreed and discussed the need for research to improve the classification system. As already discussed, the need for evidence-based policies were highlighted from the early development of the *IPC Classification Code* and the utilization of the ICF model within the classification system (Tweedy, 2002). In this vein, the IPC has supported research efforts examining different aspects of classification.

Conclusion

Classification remains an important issue for many parties involved in Paralympic track and field, and the policies are always changing. Since this study, separate classes have been given to those with a lower extremity amputation (T61-64) and those with a lower limb impairment but who have two anatomical limbs (T42-T44) (IPC, 2017b). Although these groups have been separated into new classes, they may still have to race against each other in collapsed events. The IPC revised its MASH height calculation due

to a study showing previous overestimation and began implementing the rule in 2018 (Etchells, 2017b). The IPC has made additional changes in the classification system and process, including reviewing all T/F30 classes and several changes to the T42-44 classes. The IPC scientific and medical director emphasized the need for athlete input into the classification system (Etchells, 2017a). The IPC has stated that all classifiers will go through extensive training in 2018 to ensure consistency (IPC, 2017b). All athletes with a T31-T38 classification will be required to go through re-classification (IPC, 2017b). Likewise, in an effort to make universal changes in its classification system, swimming is reviewing every athlete's classification for the new Paralympic cycle. While these classification reviews are tedious, it allows for the fairest application of the rules across the competitive field.

Despite the call for increased athlete input, rules have been enacted for the 2020 Games cycle that was put into place without transparent athlete input. For example, in previous Games, athletes with unilateral and bilateral transfemoral amputations competed together in the 100 and 200-m sprints. Due to the perception of a potential "safety issue" from circumduction across lane lines (no reported incidences of contact have ever been made), athletes with unilateral amputations will now run the 100-m and athletes with bilateral amputations will now run the 200-m. Not all athletes welcome these changes and the motives behind them are questioned. Athletes will remain skeptical of the IPC and their decisions on classification until they feel that the athletes themselves are adequately represented, and the IPC is open about what leads to their decisions.

If concerns of transparency remain unaddressed, the legitimacy of the whole Paralympic movement is threatened. When the 2000 Spanish basketball team was caught intentionally misrepresenting their impairments, the validity of the classification process was threatened and the event was removed from Paralympic programming for those with intellectual impairments. Early in 2018, a British T30's athlete returned her medal because of misrepresentation concerns with her own teammates with the help of their coaches (Grant, 2017). Solutions are not necessarily straightforward. An outspoken athlete with a unilateral amputation, who participated in this study, has proposed on social media that the IPC turn over classification to an independent third party, but paying for such an organization would be difficult, and there would eventually be sponsorship money flowing through the IPC to that organization, so monetary freedom is not guaranteed.

Future research into the classification of Paralympic athletes is warranted. Using ethnographic methods, it may be useful to observe Paralympic sports with fewer eligible impairments and simpler classification policies, or to study sporting governing bodies that may use different criteria for classification. Studies examining the face validity of the classification system, via qualitative methods, across all stakeholders would be useful in gauging primary and secondary agent perception of the legitimacy of the system. With the continued growth of the Paralympic movement and subsequent monetary awards that come with participation and winning, the IPC must consider the implications of a potentially poorly implemented and structured classification system. It is hoped this

study and others provide insight to developing a classification system and transparent processes that meet the demands of the Paralympic movement.

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CHAPTER IX

DISCUSSION AND CONCLUSIONS

The purpose of this chapter is to discuss the findings relative to the research questions that frame this study, connect our findings to the existing literature, and to discuss the implications of this study for theory, research, and practice within medical and clinical practice, in schools, by coaches, and within the Paralympic movement as a whole. This chapter includes an examination of limitations and strengths of this study. Finally, this chapter offers recommendations for further research on the culture of Paralympic sport teams, including issues related to the transition into elite sport and through elite sport, healthcare of team members, coaching, and the classification process.

Analysis of findings found five global themes that were discussed in separate articles, with their own sub-themes:

1. Barriers and facilitators to participation in sport, including the power of sport in the lives of participants and some of the negative aspects of sport participation,

2. Athlete socialization into and through adaptive sport, including the transition into and through elite sport,

3. Athlete perspective of their healthcare providers and the perspective of team healthcare providers on their adaptive sport coverage experiences, both personal and professional,

4. Athlete perspective of their coaches and the perspective of team coaches on their adaptive sport experiences, both personal and professional, and

5. Athlete, coach, and classifier perspective on the Paralympic track and field classification system and process, including the impact of the process on the athletes.

Discussion of Findings

Beyond Incredible: The Power of Paralympic Sport – An Ethnographic Feasibility Study

In addressing the feasibility study's purpose of examining the culture of the U.S. Paralympic Track and Field team, the power of sport in team members lives, and the barriers and facilitators to participation, four major themes grounded in the literature were derived from the data analysis to describe the experience of belonging to the team. Consistent with the published literature from the United Kingdom (Deans et al., 2012), the Netherlands (Bragaru et al., 2013; Jaarsma, Geertzen, de Jong, Dijkstra, & Dekker, 2014), and Lithuania (Skucas, 2013), the barriers and facilitators to adaptive and Paralympic sport participation in the United States appears to be similar to those countries. Likewise, many physical and psychosocial benefits of sport participation were observed in this study. Some negative aspects were described with participation, including injuries and illnesses. These negative aspects require staff to educate athletes of the potential risk to minimize it, to assist in the management of adverse events, and to allow athletes the autonomy to make their own well-informed decisions regarding participation and the potential risk versus the reward. The right to direct their life choices autonomously, including the acceptance of consequences related to those choices, is a

critical element of self-actualization, which is tied to autonomy in the self-determination theory (Ryan & Deci, 2000).

The Socialization Process of Paralympic Track and Field Athletes and the Role of Humor: An Ethnographic Study

While analyzing the data, certain common themes emerged related to the socialization into and through Paralympic sport participation. Many of our findings were consistent with previous research examining elite sport socialization. These themes included aspects related to shared training environments; shared experiences (e.g., traveling and humor); and integration into able-bodied training environments and events.

While many of the themes described in this study were similar to previous studies examining socialization into and via elite sport, the context and content were different based on the disability culture as a whole. As previously discussed, traditional track and field athletes usually progress through the ranks from youth athlete to elite, or professional, through a university-based system that is largely not available to adaptive sport athletes. Without question more athletes would find success, and thus be socialized into elite sport, if more university-based opportunities existed. Likewise, integrating adaptive athletes and events into existing competitions, such as marathons and track and field meets, would further the Paralympic movement by bringing more athletes into the fold and building awareness in society. These findings are consistent with or build on other findings within Paralympic track and field (Patrick & Bignall, 1984; Galli, Reel, Henderson, & Detling, 2016).

In general, relationships and bonds are established that build a culture over time through a variety of shared experiences (e.g., travel, housing, meals) and shared humor. For this team, the shared humor serves a variety of functions from initiating a new member into the group to dealing with stressful situations related to discrimination in society. These experiences tend to be a factor in tying an individual to the group for continued enjoyment and participation over time.

Exploring Perceptions and Roles of Healthcare Providers in Adaptive Sport: A Qualitative Study from the Road to Rio

Common themes emerged related to the role and influence of the healthcare provider in regards to Paralympic sport participation. Many of this study's findings were consistent with previous research examining adaptive sport and healthcare providers. These themes included aspects related to the role of healthcare providers in introducing patients into adaptive sport, the perceptions of athletes with impairments of their healthcare providers, and the role of a provider within a team setting.

While this study is unique in that we sought to examine the implications of healthcare provider involvement in the Paralympic movement, our findings were often consistent with themes found in previous research in the field and other fields. The findings of the negative attitudes and behaviors of healthcare providers towards team members were consistent with the reports in the literature (Carter & Markham, 2001; Byron & Dieppe, 2000). Athletes provided examples of situations when healthcare providers did not mention sport opportunities to them or treat them as athletes once involved in sport, or even as people with high potential.

Besides building patient awareness, healthcare providers can become involved in the adaptive sport movement through a variety of avenues, including serving as team medical staff, becoming a classifier, or through research efforts. Those who do become involved in adaptive sport note that the experiences are rewarding both personally and professionally.

Coaching Adaptive Sport: Coaching Philosophy, Influence on the Coach, and Coach Development – A Phenomenological Analysis

Common themes were found through the analysis of the data related to the influence of coaching adaptive sport on the coach, coaching development, and coaching philosophy. The coaches often became emotional during their interviews when describing some of their athletes and the transformation of their athletes through adaptive sport experiences. Coaches acknowledged that the profession comes with a variety of challenges, and that some challenges within adaptive sport are unique, but that the adaptive sport athletes and their experiences working with this population were often their most rewarding ones.

Paralympic Track and Field Classification: A Qualitative Study of Events in the Lead Up to the Rio Paralympic Games

For the U.S. team, the classification and event management issues in the lead up to the Rio Paralympic Games involved the classes of ambulatory track athletes with lower extremity impairments (T43 and T44) and the wheelchair racing classes (T52-54). For the T43 and T44 classes, the issues were related to the combining of the classes of athletes with unilateral and bilateral lower extremity involvement and the inclusion of *les*

autres. Also, a rule clarification regarding abdominal function and the classification of wheelchair racers raised concerns. From these specific issues, broader themes of the potential impact of these changes on current and future athletes were examined and suggested avenues through which to improve the classification system and IPC communication were identified.

Classification remains an important issue for many parties involved in Paralympic track and field, and the policies are always changing. Since this study's data collection, several policies and procedures have been updated (International Paralympic Committee, 2017b; Etchells, 2017a; Etchells, 2017b). As described previously, the legitimacy of the whole Paralympic movement is threatened by an unfair classification system and event management policies. Solutions are not necessarily straightforward and there is a need for additional research of the sport, and its events, along with a more transparent communication from policy makers. The involvement of more primary agents (i.e., the athletes) may also help to provide a better perspective of the impact of policy on those who the Paralympic movement seeks to empower through participation.

Holistic Implications

The findings in this study have implications for research and practice by sociologists, healthcare providers, coaches, and the IPC. This study described, in part, the culture of the U.S. Paralympic Track and Field team in the lead up to and through the Rio Paralympic Games. This research adds to the knowledge of the impact that participation in adaptive sport has on participants, along with the barriers and facilitators

to participation. The study also provides insight into the role of healthcare providers and coaches in the Paralympic movement, along with the impact of the classification process.

Implications for the Potential and Current Athlete

The participants in our study reported that sport provided a powerful influence in their lives, including improved health, function, and independence. While many barriers to the initiation and continuation of adaptive sport participation exist, many facilitators have also been described. Anyone hoping to get and stay involved in sport should look to family, friends, peer mentors, and foundations/sponsors, to help them. While there are negative aspects related to adaptive sport participation, many of these can be minimized through a variety of prevention efforts.

Once involved in adaptive sport, many people continue their participation because of the relationships that they build during shared team experiences, including travel and humor. These relationships and experiences often lead to a sense of empowerment and community engagement, including volunteering as a peer mentor with youth athletes, which helps to recruit and develop new athletes. To achieve elite sporting status in any venue, it takes athletic ability, talent, hard work, dedication, quality coaching, experience, and mental skills. It also takes funding and an appropriate training environment. All of these intrinsic and extrinsic factors can be fed by a sense of empowerment and community gained through sport participation.

Elite adaptive sport athletes should also look to engage their community by helping to educate healthcare providers and able-bodied sport coaches about adaptive sports and their benefits. For example, athletes can educate their own healthcare

providers about their elite sport status on the U.S. National Team, including team travel and sponsorships. This could lead to a discussion of the influence of sport in their lives and the potential power of sport in the lives of the provider's other patients.

Athletes should also seek to advocate for themselves, their teammates, and others through a variety of leadership roles. Athletes can serve as informal peer mentors or as formal team captains. They can also seek to serve on the USOC Athlete Advisory Council or Paralympic Advisory Council, the World Para Athletics Athlete Advisory Group, or the IPC Athlete's Commission.

Implications for Healthcare Providers

Physical therapists, and other healthcare providers, can be a significant facilitator to adaptive sport participation (Wu & Williams, 2001) or a significant barrier (Levins, Redenbach, & Dyck, 2004; Longmuir & Bar-Or, 2000). The healthcare provider's role as a barrier to this successful intervention maybe related to a depreciation of the abilities of a person with a disability. Given the reports provided by participants in this study, similar to those by Levins et al. (2004), it may be important for rehabilitation professionals to re-examine their own attitudes regarding the abilities and potential of those with disabilities to have a more positive influence on their rehabilitation and long-term outcomes.

One function of physical and occupational therapists is to enable patients' participation in activities for which they report high levels of interest yet have low levels of satisfaction, and one way to assist patients with a disability in pursuing valued and personally meaningful activities is to inform them of the resources available to them.

Unfortunately, there is a perception among those with disabilities that rehabilitation professionals need greater awareness of non-traditional rehabilitation activities (Taylor & McGruder, 1996). Additional educational opportunities, such as hands-on experiences with adaptive sport in medical schools and allied health professional programs would likely improve attitudes of students and healthcare providers and improve awareness of sporting opportunities available to those with disabilities.

Besides educating patients on potential sporting opportunities, healthcare professionals could play a variety of roles within the adaptive sport movement, including a role in coaching and coach development. Given the level of knowledge and expertise of medical professionals related to medical diagnosis, functional impairments, co-morbities and their implications, potential modifications, injury prevention, acute injury and illness management, and transfer skills, healthcare providers could make excellent coaches or could facilitate the education of others who wish to become adaptive sport coaches. This knowledge and practical experience in the medical field, combined with a participatory history in sport would provide the foundation for a coaching role at a variety of sport levels.

Another role for the healthcare provider includes working directly with adaptive sport athletes, potentially as a team medical provider. For the sports medicine practitioner working with athletes with disabilities, it is imperative that the practitioner not only have a knowledge of sport-related musculoskeletal injuries and neurorehabilitation principles but also a working knowledge of the common systemic and general health conditions seen in this population. The findings regarding this role of the

healthcare provider within the Paralympic movement was consistent with the reports of one physical therapist who documented some of his experiences with Paralympic Archery and Judo (Nyland, 2009). With this population, special attention must be paid to medications that the athlete may be taking for their medical condition because of the potential of it being a substance banned by World Anti-Doping Agency (WADA). It is also important that clinicians be aware of what effect specific medications may have on the athlete's ability to maximize performance within their chosen sport. The potential performance detriments must be recognized and discussed with the athlete, along with potential alternatives. Ultimately, the athlete needs to have a full understanding of how any medication, or treatment, may influence their career.

Given the controversies related to classification prior to the Rio Paralympics, and as noted by all interviewed groups in this study, healthcare providers could also help fulfill the need for classifiers and for additional research in adaptive sport. Betteridge (2010), a London based physiotherapist, detailed her role as a classifier and described the value and need for physical therapist involvement in classification. Similarly, in 1985, the Committee on Sports for the Disabled, a standing U.S. Olympic Committee (USOC), recognized a need within the Paralympic movement. This need was for increased research in adaptive sport and recommended seven research areas. The seven areas were (a) training and/or competition effects; (b) selection and training of coaches, volunteers, officials; (c) technological advances; (d) sociological and psychological aspects; (e) similarities and differences among athletes with and without disabilities; (f) demographics; and (g) legal, philosophical, and historical bases of sports (Reid & Prupas,

1998). This list did not include classification which is now an area that has been identified as one of high importance by the IPC and many involved in the movement, including participants of this study.

While many roles were identified for the healthcare provider, including team medical staff and sport classifier, the professional and personal rewards are similar for all involved in the movement regardless of the avenue through which providers opted to participate. Participants in this study reported that their experiences as volunteers within the Paralympic movement were fun and personally rewarding. They also stated that the experiences were professionally rewarding, as well, in that working with this population presented challenges that they would not normally see in their jobs that forced them to find solutions in different ways. They believed these challenges and problem solving situations made them better practitioners. Some also reported that working with healthcare providers from across the nation in the team setting and exposure to other providers and healthcare systems across the world during team travels enriched their own practices. Nyland (2009) also described these findings of personal and professional rewards.

Implications for Coaches and Coaching Development

For youth participants of organized sports, the coach may be the most influential adult in a child's life after their parents (Petitpas, Cornelius, Van Raalte, & Jones, 2005). This influence held true for athletes in this study. However, within adaptive sport, it is not uncommon to find athletes competing that have no coach or very limited access to coaching, which negatively impacts the performance and experience of the athletes.

While U.S. Track and Field National Team athletes often had coaches in their hometowns and the benefit of team coaches, these national team coaches indicated that they still learned from their athletes and their coaching mentors in informal settings. The interviewed coaches perceived a lack of formal educational experiences related to adaptive sport in the U.S.

One solution for the lack of qualified adaptive sport coaches is to integrate athletes with disabilities into able-bodied training groups, taking advantage of quality coaching (Primeau, Akinsanya, & Apostolopoulos, 2015). This arrangement was described by several of the ambulatory U.S. team members training at the Olympic Training Center in Chula Vista or with private high performance training facilities that specialize in training professional track and field athletes. The benefits of such an arrangement include pushing the coach out of their comfort zone to improve their coaching skills. Most of the team coaches had experience coaching able-bodied athletes first and then transitioned to working with adaptive sport athletes.

Many adaptive sport coaches only have experience with able-bodied athletes and a common complaint amongst them is that it is difficult to find quality adaptive sport coaching references and education (Martin & Whalen, 2014). Consistent with our results, the research indicates peer mentorship is one of the primary modes of gaining knowledge and experience towards developing as a coach in adaptive sport (Cregan, Bloom, & Reid, 2007; Fairhurst, Bloom, & Harvey, 2016; McMaster et al., 2012). Coaches have suggested long-term mentoring placements, including extensive hands-on learning opportunities to aid in the development of future coaches (Fairhurst et al., 2016).

This example is consistent with the internship experience of the occupational therapist and coach in our study. Fairhurst et al. (2016) also recommended recruiting disability specialists, such as physical therapists and occupational therapists, to provide education regarding disability specifics and contextual aspects. Those hoping to become adaptive sport coaches should seek out a peer mentor either locally or virtually.

Like the coaches in the McMaster et al. (2012) study, the coaches in our study expressed positive feelings about their adaptive sport coaching experiences. The coaches cited these experiences as the primary motivating factor for the continuation of coaching, despite long hours and frequent travel away from home. These experiences were also a motivating factor for the coaches as the athletes' goals became their own. The coaches, in part because of their coaching philosophies, searched for ways to help their athletes reach their goals.

Adaptive sport coaches tend to lean on an athlete and their support team for specific knowledge related to the athlete's medical diagnosis, physical impairments, and necessary modifications. Because of this relationship, the coach may adopt more of a democratic, autonomy-supportive relationship with their athletes, which leads to a greater sense of autonomy and relatedness for the athlete (Banack, Sabiston, & Bloom, 2011; Tawse, Bloom, Sabiston, & Reid, 2012). Coaches of adaptive athletes have reported that this autonomy supportive style of coaching aids athletes in individual sports, when they are training with others, to participate fully in training and in their everyday life, and that this coaching style empowers the athletes (Cregan et al., 2007). However, the coaching style requires the coach to be more creative in order to create a more optimal learning

environment. The coaches in this study appear to have adopted an autonomy supportive style of coaching as they were often seen consulting their athletes regarding their training programs at home, how they were feeling on a given day, which training modality tends to work best for them, and how best to deal with impairment specific situations such as transfers.

Certain challenges coaches may face are unique to adaptive sport. The most commonly cited challenges of working with adaptive sport populations are of a contextual nature. Coaches must always consider accessibility issues surrounding the sport venue (e.g., door widths for wheelchairs, restroom and shower facilities), ground transportation (e.g., wheelchair accessible buses and vans, number of wheelchair users per vehicle), air transportation (e.g., pressure sores from prolonged sitting, dehydration, restroom access on flight), hotel accessibility, and restaurant accessibility, especially in situations where athletes have varying disabilities (McMaster et al., 2012). Coaches in adaptive sport also need to be able to adapt programs for athletes with a variety of different impairments (e.g., SCI or limb amputation) (Falcão, Bloom, & Loughead, 2015). The ability to be creative and to adapt programs based on individual needs will determine the adaptive sport coach's success.

While the contextual and classification issues are obviously important, the ability to address the psychosocial factors found in adaptive sport is also an important factor in developing successful programs. Many coaches have been trained in some skills, such as mental imagery, emotional control, and attentional focus, which could be used with any athlete or high performance situation. However, most coaches have not been trained in

building team cohesion, which has been linked to improvements in team satisfaction and success (Bloom, Stevens, & Wickwire, 2003). While team cohesion is important in any group effort, it may be even more important in the adaptive sport community because the disabled athletes are at greater risk for psychosocial and developmental challenges (Campbell & Jones, 2002). When looking at team cohesion within Paralympic sports in Canada, coaches mentioned the importance of team members building a relationship outside of training and competition and that due to geographical constraints, technology (e.g., Skype, iMessenger) is often used to build and foster team cohesion (Falcão et al., 2015). The coaches also stated that even when face-to-face at camps the focus should not be completely on training, but topics outside of sport, such as the athletes' outside of sport interests and endeavors (family, friends, recreational and educational activities, work situations) needed to be discussed to build trust and relationships. Social activities, such as team dinners and team activities, were used by coaches to assist in building relationships and cohesion. Due to varying disabilities and impairments, these activities usually could not be completed on a whim, but required advanced thought and preparation due to potential accessibility issues. While the idea of team cohesion seems obvious in a team sport, such as wheelchair basketball, this dynamic was also important for individual sport coaches like those in swimming and track and field. Part of the team dynamic is the process of adding new team members. Paralympic swim coaches have reported the importance of a welcoming environment, for reasons related to continued participation and performance (Cregan et al., 2007).

Given the influential nature of coaches and the lack of adaptive sport coaches, the lack of quality coaches is a barrier to adaptive sport participation and eventual progression through the sporting ranks. Identifying those who have the prerequisite knowledge and skills to serve as quality coaches, such as healthcare providers with sport experience and able-bodied sport coaches, may help in the recruitment of new adaptive sport coaches. Developing educational resources, through relationships with coaching mentors, adaptive sport organizations, and healthcare providers, may help to improve the quality of existing coaches or facilitate the transition of existing able-bodied coaches into adaptive sport.

Implications for the International Paralympic Committee

A classification system that is perceived to not be valid is a threat to the entire Paralympic movement. At the elite level, if an individual is perceived to be in the wrong class, peers and the media question their legitimacy within the sport. If an athlete must compete against, and subsequently loses to, someone who has been classified inappropriately, the athlete may potentially lose out on award money and sponsorship opportunities. This loss of funding may make participation no longer financially sustainable. The athlete may feel cheated (Loland & McNamee, 2000). At the grassroots level, if the system is perceived to be unfair, participation will be discouraged, which is the opposite of the stated mission of the IPC. In this study, a coach reported difficulties in recruiting new athletes to her program because of the perceived injustice one of her athletes experienced in the classification process prior to the Rio Games.

Athletes may also become frustrated and disenchanted when classes are combined due to streamlining or a lack of numbers to make an event viable. These frustrations and anger may manifest themselves through a lack of interest in continued participation. Howe (2008) has described reports of retirement after such incidences.

While these cases do highlight the importance of continued research and refinement of the sport classes, the management of these cases also highlights the importance of consistency and proper communication within the classification process. Those with knowledge of the cases reported in this study, including the classifiers, believed the situations would have been fairer if the IPC would have been more transparent in their communication of the event management policies and the rule "clarification."

Within Paralympic track and field, there is some competition amongst the athletes for event slots. Due to the agreement between the IPC and the IOC, the number of events in the Paralympic Games is limited. This has led, in part, to the combining of the unilateral and bilateral below knee impairment classes (typically characterized by those who use prosthetics) into one event. Some athletes in this study would like to have these events separated by class. Likewise, the wheelchair racers recently lost the 200-m race due to space limitations and they would like to have that race back as an option. However, under the IPC/IOC agreement, it would likely mean the elimination of events for groups that are often already marginalized, including those with more severe impairments and higher support needs. Their performances may be deemed by some as inferior and their successes perceived as less valuable (Purdue & Howe, 2013).

However, this marginalization runs contrary to the stated vision and mission goals of the IPC. Despite this, some athletes who participated in this study believe that for Paralympic sport to attract viewers and to be successful moving forward the IPC needs to move towards more elite, and less inclusive, sport by combining classes so potential viewers might more easily understand events. This belief was even provided by those who knew that such a move would effectively exclude them from participation at an elite level due their impairments.

Many athletes have requested a greater voice in the classification process. Since the athletes are the primary agents and are the most affected by any classification decisions, their voice should be the most important and the IPC should search for avenues through which more athletes might have their voices heard. The interviewed athletes, staff, and classifiers were all in agreement and discussed the need for research to improve the classification system. The IPC has supported research efforts examining different aspects of classification. These research efforts should include qualitative studies examining athletes' perceptions of the classification system and process, their thoughts on event management, and the issue of elite versus inclusive sport.

Limitations of the Study

In designing this study, three potential limitations were recognized. The first was that participants were limited to Rio 2016 Paralympic Games track and field hopefuls (and eventual team members), their families, team staff, and classifiers. Observational and social media data were collected and analyzed for all hopefuls and eventual Paralympic team members. However, for the interviews, participants were selected via

purposeful, snowball sampling to ensure that a representative collection of athletes were selected (e.g. gender, age, sport classification, sport event). Given the representative, sampling for the interviews and the massive amount of triangulated data that were collected and analyzed, these participants are likely representative of the elite Paralympic track and field community in the U.S. and the results can be generalized to the entire adaptive track and field population. Since track and field is a coacting sport, not a team sport, the findings may be limited to this population and may not hold true for the adaptive sport community as a whole. However, since many of our findings were similar to findings found in wheelchair basketball, Paralympic Archery, and other populations such as the adaptive sport coaching community and the healthcare community the results can be tentatively generalized to the entire adaptive sport community with an eye to future research.

The second and third identified potential limitations are similar. All observational field notes were captured and all interviews were conducted by the PI. These two potential limitations could result in data and its analysis being tinted by the lenses through which the primary investigator views it, including her life experiences and professional medical background. Also, given the researcher's position with the team as a medical provider, the researcher's position may have changed how the participants responded in the interviews. The research used several techniques in an attempt to minimize these limitations and to establish study rigor. One such element to establish trustworthiness was triangulation through the use of multiple data sources (e.g., observations, interviews, media, and social media). The researcher also consulted with

team coaches and one co-researcher who was a team member to help ensure that the voices of the participants would be heard. Participants who were interviewed were also given the opportunity to review their interview transcripts and to make changes as they deemed appropriate.

Strengths of the Study

While the position of the primary investigator with the team may have presented as a potential limitation in the study, it may have also served as a strength. Given her position with the team, the primary investigator was an insider, already a known entity to the participants, and came with a certain level of rapport, that may have resulted in participants being more willing to share personal information with a researcher.

This study gave team members, including staff, and some family members the opportunity to reflect on their adaptive sport experiences and the impact of those experiences in their lives. Participants shared how important Paralympic sport has been for them and the global influence of sport in their lives. They were given the opportunity to discuss what barriers and facilitators they experienced in the initiation of sport and eventually to becoming an elite athlete, including their frustrations with the medical community as a whole and the classification process. However, for a full perspective of these issues, the PI also interviewed secondary agents such as family members, coaches, medical professionals, and classifiers to assist in understanding the entire dynamic.

An additional strength to this ethnographic study was the data were collected over a year period from multiple sources providing a larger snapshot in time of the Paralympic experience. This allowed for a greater depth and description of the experience for these

team members, including some of the natural highs and lows of an athletic season and life in general.

Recommendations for Future Research

Based on the findings and limitations of this study, the researcher recommends the following areas to be studied:

1. Future studies should continue to use ethnographic methods to investigate adaptive sport teams to assist in the awareness and growth of adaptive sport and the improvement of the sporting experience, to identify factors that would ease the transition into elite adaptive sport, and to identify additional factors in the socialization through sport.

2. Studies should further examine in a qualitative and quantitative manner the knowledge and qualifications of coaches in the following areas: coaching, knowledge of techniques for each sport, disabilities, and the functional abilities of people with different disabilities who participate in adaptive sport. Additionally, researchers should examine through a phenomenological study what draws an individual to be an adaptive sport coach in an effort to identify strategies for recruiting future coaches.

3. Studies should further examine the classification system and process. These studies should include the biomechanical and physiological aspects of each sport but also the politics and the psychosocial effect of the classification process on athletes with different functional impairments and those who are impacted negatively by recent rule changes.

4. Universities with programs such as medical schools, occupational therapy, physical therapy, education, kinesiology, and other programs that will work with individuals with a disability need to educate their students about individuals with disabilities, about adaptive sport, and the abilities of individuals with disabilities. While providing these educational opportunities, educators should study, in a quantitative and qualitative manner, the influence of these opportunities on student attitudes and behaviors towards people with a disability to assist in determining best educational practices.

5. Future qualitative research needs to further investigate the perspective of family members who have someone in their lives that participates at an elite level in adaptive sport. In what ways does the participation in elite sport affect the entire family dynamic?

Conclusions

The primary purpose of the global ethnographic study was to understand, in a qualitative manner, the culture of the U.S. Paralympic Track and Field team from the 2015 World Championships through the completion of the 2016 Paralympic Games. Secondary purposes included examination of the influence of sport in the lives of those involved in elite adaptive sport, greater examination of the barriers and facilitators to participation for those involved in elite sport, issues related to and relevant to healthcare providers and coaches, and the psychosocial effects of the IPC Classification System within Paralympic track and field. The overarching purposes of this ethnographic study were to:

1. Give a voice to the team and family members of the Rio 2016 hopefuls

2. Assess the sport socialization histories of current U.S. Paralympic Track and Field team members, including the barriers and facilitators of participation, so that the participant experiences could provide insight into the sport socialization process for persons with disabilities, including the transition into elite sport.

3. Help inform health care professionals of opportunities available to people with disabilities for sport participation and avenues through which professionals may assist elite athletes in achieving their sporting goals.

4. Help inform sport coaches of opportunities available to people with disabilities for sport participation, of avenues through which they can learn and grow as coaches of people with disabilities, and avenues through which they may assist athletes in achieving their sporting goals.

5. Inform the relevant "players" within the IPC of the impact of the IPC Classification system and process on team members, for their consideration in the rules development process.

This qualitative study of the culture of the U.S. Paralympic Track and Field team in the lead up to and through the Rio Paralympic Games, gave a voice to a population that previously had been rarely heard. In giving these participants the opportunity to tell their story, the participants likely felt empowered in being heard, and we learned what factors were associated with these athletes getting and staying involved with Paralympic sport, including some of the challenges and catalysts to achieving and maintaining elite sport status. We also gained insight into the perspective of the team's coaches, the team's healthcare providers, of some of the national and international classifiers.

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APPENDIX A

Athlete Interview Guide

Athlete Sample Question List

1. Tell me about yourself.
    a. Pre/post diagnosis
        i. Activities
    b. Diagnosis/functional limitations
        i. Para Track and Field classification
2. How many medical professionals have you had contact with since diagnosis/birth?
    a. How many spoke to you about Para sport?
    b. How many conversations since starting sport have you had with providers?
        i. Regarding injury/illness and effect on sport versus educating the professional
3. How did you find out about Para sport?
    a. How'd you get involved?
4. How independent were you prior to starting sport?
    a. Functional limitations
    b. Who was helping you?/With what?
5. How independent are you now?
    a. What do you need help with now?
    b. Who helps you?/With what?
6. How has Para sport changed your life?
7. What was the significance of being around other Para athletes?
8. Once involved in sport, could you see a difference in the way people treated you?
9. What barriers have you encountered to getting involved in Para sport?
    a. How could we best minimize these barriers?
10. What facilitators have you encountered to getting involved in Para sport?
    a. How could we best enhance these?
11. How could the medical community help you more?

As per the semi-structured style, there was great latitude and variation as to the order and exact phrasing of the questions. However, all the areas were covered if they pertained to the athlete and their specific situation. For example, questions about pre- and post-diagnosis were eliminated if the medical condition was congenital. Also, questions related to independence were eliminated if the athlete's impairments never limited independence.

APPENDIX B

Staff Interview Guide

Staff Sample Question List

1. Tell me about yourself?
    a. Occupation? Degrees/certifications/clinical education/internships?
    b. How'd you get into the profession?
    c. How'd you get involved in Para sport?
    d. What's your role in Para sport now?/How long involved?
    e. What education surrounding disability/sport do you have?
    f. How many Para athletes do you work with at home?

2. Why do you think Para sport/competition is important?

3. What barriers do you see for people to getting involved in Para sport?
    a. Awareness
    b. Cost
    c. Culture
    d. Acquired versus congenital
    e. Motivation/mental readiness
    f. Family

4. How could these barriers best be minimized or eliminated?

5. What facilitators have you seen that best facilitates getting involved in Para sport?
    a. How could these facilitators be enhanced?

6. How would it be best to educate healthcare professionals and/or peers about the benefits of Para sport?

As per the semi-structured style, there was great latitude and variation as to the order and exact phrasing of the questions; however, all the area were covered.

Appendix C

Family Interview Guide

Family Sample Question List

1. Tell me about yourself.

2. What is your relationship to the athlete?
    a. How long have you known the athlete?

3. How independent was the athlete prior to starting sport?
    a. Functional limitations
    b. Who was helping the athlete?/With what?

4. How independent is the athlete now?
    a. What does the athlete need help with now?
    b. Who helps the athlete?/With what?

5. How has Para sport changed the athlete's life?
    a. Your life?

6. Why is ParaSport important?

7. What was the significance of the athlete being around other Para athletes?
    a. What was the significance for you?

8. Once involved in sport, could you see a difference in the way people treated the athlete?
    a. How people interacted with you?

9. What barriers has the athlete encountered to getting involved in Para sport?
    a. How could we best minimize these barriers?

10. What facilitators has the athlete encountered to getting involved in Para sport?
    a. How could we best enhance these?

11. How could the medical community help more?

As per the semi-structured style, there was great latitude and variation as to the order and exact phrasing of the questions; however, all the area were covered.

Appendix D

Classifier Interview Guide

Classifier Sample Question List

1. Tell me about yourself, profession, educational background, etc?

2. How long have you been involved with adaptive sports? In what roles?

3. How long have you served as an adaptive sport classifier? How long have you been an IPC International Classifier? Any leadership roles associated with classification?

-How many athletes would you say you have classified? What sports?

4. You mentioned when I met you that you were working with Dr. Howe and Dr. Wu to draft a paper/letter to the IPC regarding classification. What was the reason for the letter and your purpose in writing it?

5. Based on your experience as a classifier, what works well?

6. Based on your experience as classifier, what needs to be improved?

7. What classification rulings, or rule changes, or "clarifications" have you seen that you questioned?

8. Familiar with the T53-T54 "clarification" in 2016? Thoughts? How could it have been handled better? How was it articulated to the classifiers?

9. Thoughts on bilateral and unilateral amputees running together? What's the solution?

10. Thoughts on amputees running with the "stiffies" – joint fusions?

11. How transparent do you think the IPC has been with some of these decisions? How could communication regarding these decisions be improved?

12. How has these incidences affected you personally? Your thoughts regarding the classification system?

13. Should athletes have more of a say in the classification process?

14. Anything I missed?

As per the semi-structured style, there was great latitude and variation as to the order and exact phrasing of the questions; however, all the area were covered.

APPENDIX E

IRB Approval Letter

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON

Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3378
email: IRB@twu.edu
http://www.twu.edu/irb.html

DATE: February 5, 2016

TO: Ms. Sheri Walters
Physical Therapy - Dallas

FROM: Institutional Review Board (IRB) - Dallas

Re: Approval for Beyond Incredible - The Paralympic Road to Rio: An Ethnographic Study (Protocol #: 18818)

The above referenced study was reviewed at a fully convened meeting of the Dallas IRB (operating under FWA00000178). The study was approved on 2/4/2016. This approval is valid for one year and expires on 2/3/2017. The IRB will send an email notification 45 days prior to the expiration date with instructions to extend or close the study. It is your responsibility to request an extension for the study if it is not yet complete, to close the protocol file when the study is complete, and to make certain that the study is not conducted beyond the expiration date.

If applicable, agency approval letters must be submitted to the IRB upon receipt prior to any data collection at that agency. A copy of the approved consent form with the IRB approval stamp is enclosed. Please use the consent form with the most recent approval date stamp when obtaining consent from your participants. A copy of the signed consent forms must be submitted with the request to close the study file at the completion of the study.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any adverse events or unanticipated problems. All forms are located on the IRB website. If you have any questions, please contact the TWU IRB.

cc. Dr. Ann Medley, Physical Therapy - Dallas
Dr. Mary Thompson, Physical Therapy - Dallas