Exploring the Paralympic Pipeline: The Pathway to Elite Performance

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DEDICATION

I would like to dedicate this dissertation to my spouse, Kylie Allyson Berry. Thank you for every 5 am morning, every cup of coffee, every note you put on my desk, every shared adventure, and the patience and love that carried me through. You are my everything. I love you!

"You get one wild and precious life, so go live it in a way that makes you proud."

- *Mel Robbins*

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ABSTRACT

The number of para-athletes competing internationally continues to grow; however, few studies have examined how para-athletes experience the developmental process that leads to the Paralympic Games. Recent studies have recognized the need to explore para-athlete development (Dehghansai et al., 2022; Patatas et al., 2021; Whaley, 2024), but empirical work examining lived experiences across the full Paralympic pathway remains limited. Therefore, the purpose of this narrative case study was to explore the lived experiences of retired para-athletes within the U.S. Paralympic pipeline. This study was guided by two research questions: (1) How did retired para-athletes experience the developmental pathway toward the Paralympic Games? and (2) In what ways do these experiences differ based on whether disabilities are congenital or acquired? Seventeen retired U.S. Paralympians (nine men and eight women) from 13 states who had competed in eight Summer Paralympic sports took part in the study. Five developmental stages of the U.S. Paralympic pipeline were identified: (a) grassroots programs, (b) high school sport involvement, (c) collegiate experience, (d) national team, and (e) Paralympic-level competition. The second component of the findings presents two overarching themes that shaped movement between these stages: (1) access to opportunity, which encompassed entry barriers, limited awareness, and accessibility challenges, and (2) capacity to advance, including limited coaching, isolation, and financial constraints. Findings reveal that progression was nonlinear and influenced by disability origin and timing, family resources, geographic location, and inconsistent organizational support. Congenital and acquired disability pathways diverged in notable

ways, particularly in relation to timing of sport entry. This study contributes empirical evidence toward understanding para-athlete development in the United States and highlights discrepancies between lived experience and formal development models. Findings offer practical implications for sport organizations, community programs, national governing bodies, and policymakers to expand equitable pathways into high-performance sport.

Keywords: Paralympic Games; athlete development, adaptive sports; disability; Paralympic pipeline.

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CHAPTER ONE

INTRODUCTION

Many countries aspire to establish themselves as global leaders in sport and invest in sport development (Patatas et al., 2021; Winand, 2010). The pursuit of international recognition has contributed to what scholars call a "global sporting arms race" (De Bosscher et al., 2008; Storm & Jakobsen, 2024; Winand, 2010). In response to this global trend, a significant body of research has emerged to investigate how to strategically develop elite athletes and support systems to gain a competitive advantage in able-bodied sports (Storm & Jakobsen, 2024). Athlete development is a complex, long-term process that requires the integration of multiple support structures and strategic planning (Schlawe et al., 2025). Several models have been developed to provide structure to athlete development and provide guidelines for coaches (Varghese et al., 2022). However, limited scholarship exists to understand athlete development in Paralympic sports (Dehghansai et al., 2017a; 2017b; Patatas et al., 2020). Patatas and colleagues (2021) noted that most models and strategies used for athlete development in able-bodied sport differ from those applied to athletes with disabilities as it includes disability-specific factors, a form of classification system, and may be impacted by nature and type of impairment. Thus, athlete development in parasport can be a crucial step in understanding how para-athletes experience and navigate their pathways toward elite performance.

The introductory section first explores the background of athlete development. It then discusses the limited but emerging body of research examining athlete development

in parasport and presents the rationale for exploring para-athletes' lived experiences and developmental pathways, followed by a review of the Paralympic pipeline in the United States. In addition, the section describes the theoretical framework that informs this dissertation, as well as problem statement, purpose statement, research questions, and the significance of the study. This section concludes with definitions of key terminology used throughout the dissertation.

Athlete Development Background

The pathway to competing at elite international sporting events is complex and varies significantly from country to country (Abbott et al., 2005). Globally, the two major elite-level competitions are the Olympic Games for able-bodied athletes and the Paralympic Games for athletes with disabilities. Schlawe and colleagues (2025) discussed the concept of athlete development and noted that "elite athletes do not reach the top on their own; to realize their dreams of international sporting success, athletes rely on a network of key support structures" (p. 1). Similarly, Sotiriadou (2013) noted that elite sport is "characterized by the effective amalgamation and synergy of elements including financial and managerial support, coaching, sport sciences and sport medicine support, talent identification and athlete pathways, training facilities and equipment, and competitions" (p. 1). From these definitions, it follows that athlete development requires structured models to guide progression.

Multiple athlete-development models have emerged over the past few decades to conceptualize athlete development toward elite performance (Till et al., 2022). Examples of such models include but not limited to the Foundations, Talent, Elite, Mastery (FTEM)

framework (Gulbin et al., 2013), the Athlete Recruitment, Retention, and Transition model (Green, 2005), and the Developmental Model of Sport Participation (Cote & Fraser-Thomas, 2007). The primary purpose of athlete-development models is to provide a structured framework for better transition as athletes progress to various stages of their athletic career (Lloyd et al., 2015). Moreover, a structured approach can guide coaches and sport administrators who are contributing to athletic support (Ford et al., 2011). When discussing athlete development, scholars use varying terminology such as "athlete pathways", "career trajectories", “developmental pathways”, “athlete development pathways”, or "sport pipeline" to describe this process (Dehghansai et al., 2022; Hutzler et al., 2016; Jurbala, 2023; Patatas et al., 2021; Peake et al., 2025; Sales & Misener, 2025). Although the terminology may differ, these terms generally refer to the same core concept: a process of guiding and supporting athletes through different phases of development. The process involves multiple stakeholders including coaches, sport administrators, parents, sport scientists, sport managers, and other support staff (Collins & MacNamara, 2017).

As Sales and Misener (2025) explained, athlete development is “focused on first understanding how athletes progress from initiation in sport to reaching their full potential and identifying what supports are needed to help athletes reach their full potential physically, mentally, psychologically, and emotionally” (p. 143). The authors elaborated that developing athletes is not a straightforward process and involves learning and strategic planning of various systems (Sales & Misener, 2025). Similarly, Jurbala (2023) explained developmental pathways as “lifetime periodization, a methodical

process of planning athlete development and responsively adapting it to evolving individual needs from early childhood through adulthood" (p. 2). Oakley et al. (2022) also emphasized the long-term nature of athlete development and highlighted the importance of learning processes and supportive relationships that help athletes transform their potential in sport. However, despite several models of athlete development, scholars noted that most of the existing models do not account for the needs of athletes with disabilities (Patatas et al., 2021). As Patatas and colleagues (2021) explained, athletes with disabilities follow a multi-dimensional developmental pathway that is shaped by disability-specific factors such as "classification system, different types of impairment (visual, intellectual, and physical), and nature of the impairment (acquired or congenital) that influence sport participation, athlete development, and sporting success in parasport" (p. 606). On the other hand, able-bodied athletes are generally supported by more structured development models that do not require consideration of classification systems or the nature and type of impairment (Patatas et al., 2022). As literature on athlete development continues to expand, there remains a significant gap in understanding how para-athletes transition through different phases of their athletic careers.

Although most existing models fail to account for the experiences of athletes with disabilities, some exceptions demonstrate emerging efforts toward inclusion. To date, the Long-Term Athlete Development Model (LTAD; Balyi et al., 2013) was named as one of the first few frameworks that have begun to address the unique developmental needs of athletes with disabilities (Patatas et al., 2021). Specifically, the LTAD Model discusses development stages of athletes' disabilities along with able-bodies athletes. More

recently, the American Development Model (ADM) has also gained attention for its inclusive approach, particularly the inclusion of athletes with disabilities, and the focus on long-term development in sport.

Emerging Research on Athlete Development in Parasport

Recent studies have recognized the need to explore the development of para-athletes (Dehghansai et al., 2022; Legg et al., 2023; Peake et al., 2025; Storli et al., 2022). However, the literature used variable terms when discussing athlete development in the context of parasport which reflects a lack of unified conceptualization. Scholars have referred to this process as "para sport athlete development," "athlete pathways in para sport," "elite pathways," "athletic career pathways', "developmental pathways", "elite development system", and "sport pipeline," which generally discussed an evolving understanding of how athletes with disabilities progress toward elite sport (Dehghansai et al., 2022; Fortin-Guichard et al., 2023; Legg et al., 2023; Pankowiak et al., 2023; Patatas et al., 2021; Peake et al., 2025; Storli et al., 2022; USOPC, 2021). The United States Olympic & Paralympic Committee uses the term "talent pipeline" to describe its approach to identifying and developing athletes from the entry level to elite international competition (USOPC, n.d.). There is limited theoretical and practical work on athlete development in parasport (Dehghansai et al., 2017a) and the variety in terminology also reflects the fact that athlete development in parasport is a relatively new area of academic research, with limited empirical studies to guide consistent language. For the purpose of this dissertation, the term Paralympic pipeline is used to reflect a development pathway that specifically emphasizes progression toward Paralympic-level competition.

Additionally, the term was chosen as it provides a more comprehensive approach to understanding transitions in athlete development in para sport.

Pinder and colleagues (2022) discussed Australian athlete development in parasport leading up to the 2020 Tokyo Paralympic Games, including progress and challenges. They emphasized the complexity and unpredictability of the development pathways. Specifically, the authors indicated that para-athletes had diverse experiences; some were attending their sixth Paralympic Games, while others were new to the sport entirely. A few had changed sports or even countries during the cycle. Some athletes retired due to the COVID-19 postponement of the Games, while others were "classed out" due to changes in classification eligibility, despite years of training. Pinder et al. (2022) linked their findings to broader research and noted that the inherent complexity of parasport often complicates long-term planning and athlete support.

Additionally, Patatas et al. (2021) pointed out that athlete development in Paralympic sport does not follow a standard or linear path as often does in able-bodied sport. Instead, the process is shaped by a range of factors including the type and timing of the impairment, access to resources, and the role of classification. The authors suggest the journey to becoming a Paralympic athlete involves multiple factors that can vary not only by sport but also by the nature of the athlete's impairment (congenital versus acquired). Although limited research has examined how athlete development differs between these two groups, existing studies suggest that athletes with congenital disabilities often enter sport earlier than those with acquired disabilities (Dehghansai et al., 2017; Patatas et al., 2021). However, this pattern is highly situational. Some individuals with congenital

disabilities may never encounter adaptive sport due to availability of adaptive sports programs in their communities, geographic isolation, or lack of supportive networks (Kean et al., 2018; Tabaie et al., 2022). Conversely, individuals with acquired disabilities may begin participating at a very young age if the disability occurs in childhood.

Furthermore, a major issue within this system is the lack of comprehensive, research-based guidance on how best to support athletes with disabilities throughout their careers. As Smith and Bundon (2017) note, disability in sport remains underexplored in academic literature which results in knowledge gaps that directly affect how athletes are developed and supported. Without sufficient empirical data, public policies often lack the evidence needed to inform effective, inclusive sport development strategies for the Paralympic pathway.

In several countries, Paralympic sport is governed through government-supported systems that provide consistent funding and coordination across all levels of athlete development. In the United Kingdom, organizations such as UK Sport and the British Paralympic Association work together to oversee both Olympic and Paralympic development (UK Sport, n.d). A similar model exists in Australia, where Paralympics Australia collaborates with the Australian Institute of Sport to deliver structured athlete development pathways supported by public resources and state-level sport institutes (Pankowiak et al., 2023; Paralympics Australia, 2025). National sport organizations (NSOs) receive funding for parasport initiatives and athlete development.

In contrast, the United States follows a nonprofit-driven governance model. The United States Olympic & Paralympic Committee oversees both Olympic and Paralympic

sport and does not receive ongoing federal funding for its operations (USOPC, 2021). Instead, it primarily relies on sponsorships, donations, grants, and other non-profit organizational support. However, limited federal funding is available through specific programs such as the Department of Veterans Affairs which supports adaptive sports participation among veterans and military personnel. Individual National Governing Bodies (NGBs) are responsible for running their sport-specific Paralympic programs, including athlete recruitment, development, and competition. Although the structure offers flexibility, it also results in unequal support and inconsistent program delivery across different sports.

Paralympic Pipeline in the United States

The United States has long been one of the dominant countries on the Paralympic podium across both Summer and Winter Games (Mauerberg-deCastro et al., 2016). The success can be attributed, in part, to a growing network of organizations, resources, and programs that form the foundation of the U.S. Paralympic development pipeline. In contrast to government-supported Paralympic programs in other countries, the U.S. approach has developed through the use of recreational opportunities, rehabilitation programs, community sport clubs, veteran-focused initiatives, and youth sport (USOPC, n.d.). Thus, individuals with disabilities are introduced to the possibility of Paralympic participation through these interconnected entry points. Existing scholarly research reflects this structure, as studies on the United States Paralympic athlete pipeline tend to focus on specific segments rather than the full developmental pathway. In particular, research has examined recreational and leisure opportunities for individuals with

disabilities (Braza et al., 2018; Burns & Graefe, 2007), veterans in adaptive sports (Lundberg et al., 2011), youth with disabilities (Aytur et al., 2018; Ryan et al., 2014), collegiate adaptive athletics (McCarty et al., 2023; Shapiro et al., 2020; Townsend et al., 2025), and Paralympic Games (Thompson & Vanlandewijck, 2021).

Sales and Misener (2025) explained that athlete development is "focused on first understanding how athletes progress from initiation in sport to reaching their full potential and identifying what supports are needed to reach that potential" (p. 143). Support systems can include a range of factors including physical, mental, emotional, and physiological (Sales & Misener, 2025). However, athlete development also depends on structured and accessible external resources such as qualified coaches, access to appropriate equipment and facilities, and effective sport management systems that are necessary to meet the needs of para-athletes (Martel, 2015). Lack of support systems can result in additional barriers for athletes that further limit their ability to progress through the development pathway.

Athlete development models are often used as theoretical frameworks to explain how athletes progress from their first experiences in sport to competing at the elite level. In the United States, the American Development Model (ADM) was first introduced by USA Hockey in 2009 and later adopted by the United States Olympic & Paralympic Committee in 2014 in collaboration with various National Governing Bodies (NGBs; Martel, 2015; USOPC, n.d.). The model is based on the Canadian system and follows Long-Term Athlete Development (LTAD) principles which include personal factors, organizational factors, and system factors (Sales & Misener, 2025).

While several international studies have explored full athlete development models in countries like Australia, the United Kingdom, and Canada (Dehghansai et al., 2021; Pankowiak et al., 2023; Sotiriadou et al., 2017), there is currently no comprehensive research that maps the entire Paralympic pipeline within the U.S. However, existing studies suggest that athletes typically enter the pipeline through a range of entry points, including community-based adaptive sport programs, rehabilitation and medical centers, and military-affiliated initiatives.

There are many organizations, some larger and others smaller, that offer resources for adaptive sports. One of largest contributors to the national framework is Move United, an official affiliate of the United States Olympic & Paralympic Committee, which means it operates in formal partnership with the USOPC to expand access to adaptive sport and support the development of future Paralympic athletes through a national network of over 230 adaptive sport organizations (Move United, n.d.). Move United provides an interactive map to help individuals locate local adaptive sport clubs and explore opportunities in more than 70 different sports (see Figure 1). Individuals can search for a club by entering a zip code or a location (state, city, town) as well as clicking directly on the map. The number of member organizations varies widely by geographic location. For instance, Colorado hosts 17 programs, while Idaho offers only four. Member organizations are commonly referred to as chapters, function as entry points and provide opportunities for both recreational and competitive athletes with disabilities. In addition to Move United's interactive map, USOPC offers a similar resource titled "Find a Club." This function enables users to search for adaptive sports clubs by state. The

"Find a Club" feature is part of the USOPC's Paralympic Sport Development initiative, which aims to expand access to adaptive sports across the country. Users can select their state to view a list of available clubs.

Many chapters of Move United also host sanctioned events and qualifiers for larger competitions, such as the Hartford Nationals. The Hartford Nationals, officially known as the Move United Junior Nationals presented by The Hartford, is the largest annual multi-sport event in the United States for youth athletes with physical, visual, and/or intellectual impairments. While the event is not directly a qualifier for international competitions, it may help athletes to get on the radar of national coaches and classifiers, which is an important step in the Paralympic pathway. Ryan and colleagues (2014) explored youth with disabilities and benefits of adaptive sports for this specific population. The authors noted that participation remains disproportionately low compared to their non-disabled peers, often due to limited access to inclusive programming and systemic barriers in education and recreation (Ryan et al., 2014). The findings support the need to establish the pipeline that supports long-term development of para-athletes, including youth with disabilities. In particular, the pipeline would provide clear entry points and guide athletes along progressive pathways from community-based programs to national and international competitions.

Paralympic Training Facilities

According to the United States Olympic & Paralympic Committee (USOPC, n.d.), there are currently two official training centers and nine designated training sites across the country that support athlete development and preparation for elite competition (See

Table 1). Although the training sites are independently owned and operated, the USOPC maintains formal partnerships with these venues to ensure consistent access to training facilities (USOPC, n.d.).

Pate (2012) investigated the Lakeshore Foundation, a designated USOPC Training Site, to understand why Paralympic athletes and teams consistently preferred it over other available training facilities. The study identified service quality, along with a welcoming and consistent environment, as key factors influencing that decision. Lakeshore was perceived not only as physically accessible but also socially inclusive, "removing barriers related to both access and acceptance for Paralympic athletes" (Pate, 2012, p. 184). Participants emphasized that while other sites could meet basic training needs, they often failed to fully support the broader personal and social needs of athletes with disabilities. This study is relevant to the present dissertation because it highlights how inclusive training environments support athletes' sustained engagement and progression within the Paralympic pipeline, beyond physical performance considerations. Moreover, Pate's (2012) emphasis on athlete perspectives reinforces the importance of examining lived experiences when exploring how para-athletes navigate developmental pathways toward Paralympic-level competition.

Coaches' Role in Athlete Development

Coaches are one of the key stakeholders in athlete development (Brouwers et al., 2015; Wylleman et al., 2017). Previous literature emphasized that coaches have multiple roles including instructors, mentors, leaders, role models, and advocates for their athletes (Cote, 2006; McLoughlin et al., 2017). As Anderson-Butcher et al. (2024) elaborated

coaches “identify as former athletes, community members, parents/caregivers of athletes, and/or educators who often are motivated to participate as coaches because of their love of teaching sport, desire to help develop young people in the community, and attraction to stay involved in sport” (p. 2). Many of the strategies and behaviors that characterize effective coaches in able-bodied sport are also applicable and beneficial in parasport (Alexander et al., 2024). However, several studies identified additional layers of complexity for coaches who work with para-athletes (Alexander et al., 2020; 2024; Cregan et al., 2007).

In particular, a coach’s role in parasport becomes even more complex due to the need for individualized adaptations and understanding different impairments (Alexander et al., 2024; Pomerleau-Fontaine et al., 2023). To effectively coach an athlete with a physical disability, it is essential for coaches to have in-depth knowledge of the sport and to be adaptable in terms of athlete’s abilities rather than their impairments during training (Burkett, 2013). Additionally, Hutzler and Bergman (2011) emphasized the role of coaches in promoting empowerment among para-athletes. The authors found that for retired Paralympic athletes, feelings of empowerment, elite group identification, and enjoyment of sport were critical retrospective elements of their engagement (Hutzler & Bergman, 2011). Scholars pointed out that parasport coaches frequently face challenges due to limited access to coaching resources and lack of educational and professional development opportunities (Alexander et al., 2020; McMaster et al., 2012; Taylor et al., 2015). This body of literature provides a contextual background on how coaching influences athlete experiences within the Paralympic pipeline.

Social Ecological Model

As DePauw (1997) emphasized, "it is important to understand our attitudes towards the body and our view of the body because this view will define how we view disability and people with disabilities" (p. 420). Indeed, disability can be conceptualized in different ways depending on the theoretical framework applied (Berghs et al., 2016). One such framework is the Social Ecological Model (SEM) which focuses on interaction between individual characteristics and the environments in which they are situated (Belsky, 1980; Bronfenbrenner, 1979; McLeroy et al., 1988; Terry, 2014). Walker et al. (2025) explain that from a social ecological lens disability can be understood “as a state of functioning characterized by a significant and chronic mismatch between a person’s competencies and the demands of settings and activities in contemporary society" (p. 7). From this perspective, disability is viewed as the result of environmental demands that exceed individual competencies. Similarly, Terry (2014) described the SEM “as a new way of examining human development, looking at the developing person, the environment, and the interaction between the two” (p. 2).

The SEM was originally developed in the field of psychology and human development (Kilanowski, 2017). Specifically, Urie Bronfenbrenner, a developmental psychologist, introduced the framework in the 1970s, and formalized it as a theory in the 1980s (Bronfenbrenner, 1994; Kilanowski, 2017; McLeroy et al., 1988). Further, McLeroy et al. (1988) adapted and expanded Bronfenbrenner’s framework to develop the SEM which follows a similar concept. In his work, Bronfenbrenner (1994) focused on

ecological systems and emphasized the importance of nested environmental influences on human development (Bronfenbrenner, 1979, 1994). He explained:

> Human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time (Bronfenbrenner, 1994, p. 38).

The SEM has since been widely adopted across disciplines to understand how complex layers of influence shape human outcomes, including disability and sports (Devereux et al., 2015; Sykes et al., 2024; Terry, 2014 Casey et al., 2009). Sallis and colleagues (2008) emphasized that the social ecological model is valuable because it combines elements from psychological, social, and organizational theories and also recognizes environmental settings and community-level policies.

For instance, Devereux and colleagues (2015) applied the social ecological model (Berkman & Glass, 2000) to investigate the factors influencing perceptions of interpersonal support among adults with physical disabilities. The study involved 331 participants who completed a survey that measured multiple domains, including emotional and social support, social integration, perceived disability impact in social contexts, environmental barriers, and relevant psychosocial variables. It was concluded that support is significantly influenced by broader environmental conditions and structural inclusion. Therefore, the authors stated that "improving environmental factors

will help improve social support" for people with disabilities (Devereux et al., 2015, p. 564).

In order to understand how para-athletes progress through various stages of development toward elite performance, it is necessary to examine not only individual characteristics but also the broader systems in which they are embedded. The social ecological model is typically organized into five interrelated levels (Langille & Rodgers, 2010; McLeroy et al., 1988; Salihu et al., 2015) that include: the individual level (personal characteristics), the interpersonal level (relationships with others), the organizational level (schools, clubs, sport federations), the community level (social networks, community resources), and the policy level (laws, institutional policies). See Table 2 for a description of each level of the SEM.

Individual Level

Individual level encompasses intrapersonal (individual) factors, which includes internal characteristics of the individual (Salihu et al., 2015). For example, knowledge, attitudes, behaviors, self-concept, motivation, physical and psychological skills (Iso Ahola, 1995). Factors at this level are shaped by the developmental history of the individual (McLeroy et al., 1988).

Interpersonal Level

Interpersonal level factors involve the social relationships and support networks surrounding the athlete (McLeroy et al., 1988; Salihu et al., 2015). For example, it includes relationships with family, peers, coaches, teammates, and mentors (Iso Ahola,

1995; Burns et al., 2019). It is important to note that these primary groups can either facilitate or hinder athlete development (Battaglia & Kerr, 2024).

Organizational Level

The organizational level refers to the rules, structures, and practices embedded within those organizations or institutions (Salihu et al., 2015). Factors at this level directly influence individual and group behavior. Regarding athlete development, organizational level factors may include formal structures, such as national governing bodies (e.g., USOPC), adaptive sport clubs, schools, rehabilitation centers, and athlete training programs.

Community Level

The community level refers to the networks and relationships among organizations, institutions, and other informal networks (Salihu et al., 2015). In athlete development, it can include organizational partnerships, such as collaborations between sport clubs, rehabilitation hospitals, schools, and disability advocacy groups (Blauwet & Willick, 2012; Misener & Doherty, 2012).

Policy Level

The policy level includes local, regional, national, and international laws, regulations, and public policies that influence opportunities for sport participation and development (Salihu et al., 2015). In parasport, policy level includes the Americans with Disabilities Act (ADA), which mandates equal access to sport facilities and public spaces; educational mandates such as the Individuals with Disabilities Education Act

(IDEA); and policies set by the IPC, which includes policies regarding classification systems and eligibility criteria for the Paralympic Games.

The application of the SEM to athlete development in adaptive sports can have multiple positive outcomes. At the individual level, education and mentorship programs can increase self-efficacy and knowledge of adaptive sport pathways (Culver et al., 2020). At the interpersonal level, training for coaches, parents, and peers can help to create an emotionally supportive environment (Moran et al., 2017). For instance, coach education programs in adaptive sport can empower practitioners to design inclusive practices that respect the varied needs of athletes with congenital and acquired disabilities (Fairhurst et al., 2017). At the organizational level, sports clubs, schools, and universities can develop adaptive teams and include adaptive sport as a part of their programming (McCarty et al., 2023). The community level can be achieved through awareness campaigns and partnerships with disability advocacy organizations that normalize participation in adaptive sports and recreation. Finally, at the policy level, legislative efforts such as increased funding for adaptive programs and inclusion mandates within national sport bodies can help institutionalize equity (Smith & Thomas, 2012).

Therefore, this study was informed by the social ecological model and used it to conceptualize data analysis and helped to identify patterns across individual, interpersonal, organizational, community, and policy levels that influence para-athlete development.

Bronfenbrenner's Framework (1979, 1994)

Bronfenbrenner's ecological theory has significantly influenced the development of the SEM (Kilanowski, 2017). Particularly, Bronfenbrenner (1994) conceptualized the environment as five interconnected systems such as microsystems, mesosystems, exosystems, macrosystems, and chronosystems. Each system is discussed in detail as well as its relation to para-athlete development.

Microsystems. The microsystem represents the most immediate environment in which individuals interact (Bronfenbrenner, 1994). It includes relationships with family, peers, coaches, and training environments. In para-athlete development, the microsystem may include daily interactions between the athlete and their coach, teammates, and family members (Devereux et al., 2015).

Mesosystems. The mesosystem refers to the interconnections between different microsystems. It also highlights how relationships across various settings influence the individual. For para-athletes, this may involve the coordination between school-based programs, community sport clubs, rehabilitation centers, and family environments.

Exosystems. The exosystem includes social systems that do not directly involve the individual but nonetheless exert influence through their effect on someone within the athlete's microsystem (Bronfenbrenner, 1994). For example, a parent's workplace flexibility may impact a para-athlete's ability to attend training sessions, or national sport policy decisions may influence funding for adaptive programs.

Macrosystems. The macrosystem refers to the overarching cultural and subcultural values, belief systems, and social norms that frame the broader societal context in which

development occurs (Bronfenbrenner, 1994). For para-athletes, the macrosystem may encompass national attitudes toward disability or the visibility of adaptive sports in mainstream media. Societies with inclusive sport policies and a strong emphasis on equity are more likely to foster environments where athletes with disabilities can thrive. Conversely, ableist attitudes in sport contribute to systemic barriers that hinder athlete development.

Chronosystems. Finally, the chronosystem introduces the dimension of time that captures "change or consistency over time not only in the characteristics of the person but also of the environment in which that person lives (e.g., changes over the life course in family structure, socioeconomic status, employment, place of residence, or the degree of hecticness and ability in everyday life)" (Bronfenbrenner, 1994, p. 40). In para-athlete development, it includes various transitions in sports or structural changes, for example, in coaching staff. It may also include broader socio-political changes such as changes in the Paralympic classification system.

Problem Statement

Athlete development research has traditionally focused on able-bodied sport, often overlooking the unique complexities of parasport. One important but underexamined complexity is the role of impairment origin that can shape para-athletes' developmental experiences (Dehghansai et al., 2017b; Patatas et al., 2020; 2021). The terms "nature" and "origin" of impairment are both discussed in scholarly literature and are commonly used to distinguish between congenital and acquired groups of impairments (Kons & Patatas, 2023; Severin et al., 2025). As Kons and Patatas (2023) explained, congenital

impairments refer to those present at birth, while acquired impairments result "later in life as a consequence, for example, of an injury or an accident" (p. 929). Lundberg et al. (2011) elaborated that “acquiring a physical disability can be considered a devastating and traumatic event resulting in significant life changes” (p. 106).

Scholars have indicated that athletes with congenital and acquired impairments may experience different pathways in athlete development (Dehghansai et al., 2017b; Patatas et al., 2021). Athletes with congenital impairments often grow up adapting to their physical disabilities from an early age (Dehghansai et al., 2017b). In contrast, athletes with acquired impairments frequently go through major life transitions, including psychological adjustment, redefinition of self-concept, and the re-learning of movement or sport-related skills (Bogart, 2014). For example, Patatas and colleagues (2021) found that athletes with acquired impairments typically move through developmental stages more quickly with "approximately 4.5 years" (p. 619) from initial engagement in sport to reaching elite-level competition. In contrast, athletes with congenital impairments tend to progress over a longer period and take approximately six years to reach the same level. Interestingly, although they require more time to develop, athletes with congenital impairments usually begin participating in parasport at a much younger age, approximately 8.6 years earlier than their counterparts with acquired impairments (Patatas et al., 2021).

The unpredictable nature and timing of acquired impairments make talent identification and athlete development in the Paralympics even more complex. Specifically, unlike athletes with congenital impairments, athletes with acquired

conditions may enter sport later in life and at varying levels of physical and psychological readiness (Dehghansai et al., 2022). Therefore, their developmental pathways are often less linear and require more flexible, individualized approaches to support long-term progression and elite performance (Dehghansai et al., 2022).

The most recent study examined how the origin and type of an athlete's impairment influence the likelihood of winning a medal at the Paralympic Games (Severin et al., 2025). The authors analyzed data from Paralympic athletes competing in individual sports between 1960 and 2022, across both Summer and Winter Games. The results showed that in certain sports such as para-athletics, para-alpine skiing, and para-biathlon athletes with congenital impairments had a significantly higher probability of winning a medal compared to those with acquired impairments (Severin et al., 2025). The study also highlighted variation in the representation of impairment origin across sports. For instance, "67% of participants in para-swimming had a congenital impairment, while 82% of athletes in para-shooting had an acquired impairment" (Severin et al., 2025, p. 188). Therefore, exploring the differences between congenital and acquired disabilities is particularly relevant for understanding athlete development.

The process of adapting to an acquired disability often involves a profound disruption to one's established sense of self (Guerrero & Martin, 2018; Levins et al., 2004). After a traumatic event that resulted in permanent impairment individuals experience a re-negotiation of identity and body perception. Levins et al. (2004) explained the complexity of this experience and emphasized the emotional and psychological adjustment involved in recovery:

> Rebuilding the embodied self after such a disruption is an extremely difficult task; A person's self-image has been developed over a lifetime in relation to particular social ideas and in terms of a body with certain skills, abilities and appearances. To confront, and to gradually let go of, those aspects of self-identity that now can never be consummated is the most difficult task of rehabilitation (p. 506).

Furthermore, individuals with acquired disabilities, in particular, spinal cord injuries (SCI) often face both the immediate physical and psychosocial difficulties surrounding the traumatic event and may continue to experience additional psychological distress as they begin to recognize the long-term implications of their injury throughout the rehabilitation process (Bonanno et al., 2012; Crawford et al., 2014). The ongoing psychological adjustment process has led researchers to explore not only the negative consequences but also the potential for positive psychological change following trauma such as post traumatic growth (Jayawickreme et al., 2021; Hammer et al., 2019).

Purpose Statement and Research Questions

The purpose of this narrative case study was to explore the lived experiences of retired para-athletes within the U.S. Paralympic pipeline. The study was guided by the following research questions:

1. How did retired para-athletes experience the developmental pathway toward the Paralympic Games?
2. In what ways do these experiences differ based on whether disabilities are congenital or acquired?

Study Significance

The Centers for Disease Control and Prevention (CDC, 2024) reported that approximately 28.7% of U.S. adults live with some form of disability which is equivalent to more than one in four individuals. Among this population, military service members and veterans with acquired disabilities have increasingly engaged in adaptive sports as part of their rehabilitation process. Notably, some of these individuals have progressed to elite competition and represented Team USA at the Paralympic Games. The United States Olympic and Paralympic Committee (USOPC, n.d.) has published data that documented the number of military-affiliated para-athletes competing in each Summer and Winter Paralympic Games between 2008 and 2024 (see Table 3). The report demonstrated a significant representation of Paralympic athletes on the national team. For example, during the 2018 Winter Paralympics, military-affiliated para-athletes comprised 24.3% of the total U.S. delegation (USOPC, n.d.).

Congenital disabilities (present at birth) encompass a wide range of physical and intellectual conditions that can significantly influence an individual's development (Stallings et al., 2024). According to the Centers for Disease Control and Prevention (CDC, 2024), approximately one in every 33 babies in the United States is born with a birth defect. Furthermore, congenital conditions may affect various regions of the body such as the heart, brain, spine, bone, muscles, as well as genetic anomalies (CDC, 2024). While the severity and type of impairment vary widely, these types of disabilities often require early intervention, support, and disability-specific adaptations.

To date, there is no official data available that outlines the percentage of athletes with congenital versus acquired disabilities that are represented at the Paralympic Games. However, the most recent study by Severin and colleagues (2025) offered some insights into this distribution and analyzed trends across individual sports at the Paralympics (Summer and Winter). The authors reported that different Paralympic sports may be more commonly represented by one group over the other. For example, approximately 67% of para-athletes in swimming had congenital disabilities, while 82% of athletes competing in shooting para sport had acquired impairments (Severin et al., 2025). Interestingly, in para-athletics (also known as para track and field), the largest sport in the Paralympic program, para-athletes with congenital and acquired disabilities were represented in relatively similar proportions.

This study contributed to a comprehensive understanding of the developmental pathways and experiences of para-athletes with both congenital and acquired disabilities within the U.S. Paralympic pipeline. A thorough understanding of para-athletes' experiences is essential for several reasons. First, it helps identify gaps in the current Paralympic pipeline. Second, it supports coaches and sport professionals in better understanding the needs, challenges, and trajectories of para-athletes. Lastly, this understanding can contribute to stronger long-term athlete development and improved performance outcomes at the national and international levels, including the Paralympic Games. Finally, the findings from this research can inform evidence-based strategies to strengthen athlete development pathways in parasport and expand adaptive sport

opportunities to ensure that future generations of para-athletes are fully supported in realizing their potential and achieving success on the international stage.

Definition of Terms

The following definitions clarify how key terms are used throughout this study:

Adaptive Sports: an "overarching term for any sport tailored for persons with a disability" (USOPC, n.d., para 1).

Acquired Disability: a person who was not born with an impairment but developed one later in life due to injury, illness, or other circumstances (Pate, 2012).

Athlete Development: a complex, long-term process that requires the integration of multiple support structures and strategic planning (Schlawe et al., 2025). Athlete development is "focused on first understanding how athletes progress from initiation in sport to reaching their full potential and identifying what supports are needed to reach that potential" (Sales & Misener, 2025, p. 143). For the purpose of this study, athlete development was approached from a sport management perspective.

Classification System: a system that groups athletes with impairments into sport classes to ensure fair and equitable competition (Connick et al., 2018).

Congenital Disability: a person who was born with an impairment (Pate, 2012).

Disability: socially constructed constraints placed upon individuals with impairments which restricts full participation of individuals with impairments in society (Brittain, 2004; Hogan, 2019).

Impairment: a "physical, sensory, or intellectual condition that potentially limits full participation in social and/or physical environments" (Coakley, 2009, p. 50).

Para-Athlete: an athlete with eligible impairment who competes in Paralympic sports.

Paralympic Pipeline: a structured system of athlete development in Paralympic sports where individuals with disabilities transition from initial involvement in sport toward elite-level competition, particularly the Paralympic Games.

Parasport: a subcategory of adaptive sports that specifically refers to sports and disability categories recognized at the Paralympic Games (USOPC, n.d.).

Retired Paralympic Athlete: an athlete with an eligible impairment who has previously competed at the Paralympic Games and has since ended their career as an elite-level athlete.

Study Overview

Chapter One introduced the background of this doctoral dissertation, beginning with an exploration of athlete development and the limited but emerging body of research examining developmental pathways in parasport. It made the case for a deeper investigation into para-athletes' lived experiences within the U.S. Paralympic pipeline. I concluded the chapter with the theoretical framework, problem statement, purpose statement, research questions, significance of the study, and definition of key terms.

Chapter Two presents a comprehensive review of the history and legal foundations of the Paralympic movement in the United States. It also discusses aspects that influence athlete development such as athlete eligibility, classification system, and evolution of athlete development frameworks as well as their adaptations for athletes with disabilities. It further explores the psychosocial dimensions of athlete development,

including identity formation and post-traumatic growth, and the structural challenges that hinder progression through the Paralympic pipeline.

Chapter Three outlines the methodology and methods used in this narrative case study. Specifically, it examines the characteristics of qualitative research, epistemological and ontological assumptions, and the rationale for employing a narrative case study design. The chapter further details the data collection and analysis procedures and explains the strategies used to ensure trustworthiness.

Chapter Four presents the findings of this research study. Specifically, the chapter begins with narratives introductions of each participant to provide context for their athletic backgrounds and origin of disability. It then presents the five stages of the U.S. Paralympic pipeline, constructed through data analysis. The chapter then shifts to thematic interpretation and identifies gaps and transitions between stages through two primary themes: access to opportunity (entry barriers, accessibility, and awareness) and capacity to advance (limited coaching support, isolation, and financial constraints). Finally, the chapter concludes with a detailed summary.

Chapter Five discusses the findings of this study. The chapter addresses the two research questions and situates the results within existing literature. Finally, the chapter identifies practical implications for strengthening the U.S. Paralympic pipeline and concludes with limitations and recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

History of Paralympic Development in the United States

The foundations of disability advocacy in the United States were established well before the emergence of the Paralympic movement. Several national organizations formed in the early 20th century laid important groundwork for disability rights and community-based support. For instance, the National Association of the Deaf (NAD), founded in 1880 to address the needs of Deaf community, is one of the oldest disability organizations in the U.S. (National Association of the Deaf, n.d.). Decades later, the National Federation of the Blind (NFB) was founded on November 16, 1940, in Pennsylvania, which became the first national membership organization led by blind individuals to advocate for equality and full societal participation (National Federation of the Blind, n.d.). The above-mentioned early organizations focused primarily on community support and public representation rather than sport, but they contributed significantly to the broader disability rights landscape in which the Paralympic movement would later emerge.

Early Beginnings

The development of the Paralympic movement in the United States began in the mid-20th century and is closely tied to the emergence of rehabilitation-focused programs for war veterans. One of the earliest organizations in this movement was the Paralyzed Veterans of America (PVA), founded in 1946 by a group of World War II veterans who had sustained spinal cord injuries (Cooper & Nowak, 2011; Labanowich, 1975; Paralyzed

Veterans of America, n.d.). The organization was created not only to advocate for veterans' medical and civil rights, but also to promote opportunities for physical activity and recreation as part of long-term rehabilitation and quality of life.

Among the first sports to take root during this period was wheelchair basketball (Cooper & Nowak, 2011). A key figure in its development was Stan Labanowich, who not only helped formalize its structure through the National Wheelchair Basketball Association (NWBA) but also served as its second commissioner from 1974 to 1995 (Move United, n.d.). Labanowich also was a head coach in the University of Illinois adaptive track and field team. Between 1964 and 1976, his athletes competed in multiple Paralympic Games (National Wheelchair Basketball Association, 2015).

Another key figure in the early development of wheelchair basketball in the United States was Dr. Timothy Nugent (National Wheelchair Basketball Association, n.d., Pate, 2012). In 1948, he established the Gizz Kids, one of the first wheelchair basketball teams at the University of Illinois (National Wheelchair Basketball Association, n.d.). Nugent's vision went beyond recreation as he advocated for equal access to higher education and organized sport for individuals with disabilities. A year later, in 1949, the first organized wheelchair basketball tournament was held in Illinois, with six teams participating (International Wheelchair Basketball Federation, n.d.; Labanowich, 1975). A year later, Nugent founded the NWBA which has since grown into a national governing body for sport (Illinois Distributed Museum, n.d.). Today, the NWBA includes 225 teams with divisions for youth, intercollegiate programs, adult leagues, and both men's and women's teams (National Wheelchair Basketball

Association, n.d.). The International Wheelchair Basketball Federation (IWBF) recognizes the NWBA as the official national organization for wheelchair basketball in the United States.

The National Wheelchair Athletic Association (NWAA) was established in 1956, alongside the organization of the first National Wheelchair Games held at Adelphi College in New York (Fleming, 1984; Labanowich, 1975). The organization was established to support the rehabilitation of service members returning from the Korean War. Over the following decades, the organization operated under several names including Wheelchair Sports USA and Wheelchair & Ambulatory Sports USA (Move United, 2020). Later, the organization evolved into Adaptive Sports USA and partnered with local and regional organizations to develop sanctioned competitions for youth and adults with physical disabilities to expand its programming beyond wheelchair basketball. Its mission was focused on engaging, evolving, and empowering individuals through adaptive sport by promoting education, coaching, and advocacy. One of the organization's most notable contributions was the Adaptive Sports USA Junior Nationals (formerly the National Junior Disability Championships), the longest continually run national competition for youth with physical disabilities in the United States (Wheelchair & Ambulatory Sports USA, n.d.).

For several years, wheelchair basketball was the only wheelchair sport with a national organization in the United States. That changed in 1957, when Benjamin Lipton organized the first National Wheelchair Games in partnership with Paralyzed Veterans of

America (PVA) and Adelphi University (Labanowich, 1975). The Games marked an important step in expanding competitive opportunities beyond just a single sport.

Disability Rights Movement in the 1960s

The 1960s were a turning point for the disability rights movement in the United States, especially as people with disabilities began organizing to demand access to public spaces, education, transportation, and employment (Fleischer et al., 2011; Patterson, 2018; Scotch, 1989; Whaley et al., 2024). Much of their focus was on removing physical barriers that excluded them from full participation in society (Patterson, 2018). Speaking from personal experience, World War II veteran Charles Caniff described wheelchair users as "back door citizens" to emphasize the exclusion caused by inaccessible environments. He explained, "to fulfill our responsibilities as citizens we often must circumvent these barriers by entering through the rear door, where freight is hauled in and garbage hauled out, and make our way through coal bins, storerooms, and boiler rooms to reach a freight elevator which can accommodate our wheelchairs." (Patterson, 2018, p. 444). His words show how inaccessible environments were limited not only to mobility but also rights for basic citizenship. In response to these challenges, the American Standards for Barrier-Free Design were introduced in 1961 and became a guide for creating more accessible buildings (Patterson, 2018). However, many early efforts were limited and ineffective (Whaley et al., 2024). Most laws only applied to federally funded buildings and were based on vague accessibility standards, which made enforcement difficult (Patterson, 2018).

As part of the broader disability rights movement, the initial steps contributed to greater recognition of the rights of people with disabilities to fully participate in public life (Patterson, 2018; Whaley et al., 2024; Williams, 2022). As a result, sport and recreation slowly became integrated into inclusion efforts. Discussions surrounding physical accessibility were part of the extended social and infrastructural changes which helped create conditions where international competitive opportunities could emerge, eventually leading to the establishment of the Paralympic Games (Ferez et al., 2020).

In 1960, the first official Paralympic Games (formerly known as the Stoke Mandeville Games) were held in Rome, Italy (Gold & Gold, 2007). The United States was among the 23 participating countries and competed in eight events including archery, para-athletics, dartchery, snooker, para swimming, table tennis, wheelchair fencing and wheelchair basketball.

In 1967, a group of veterans with disabilities founded the National Amputee Skiers Association (NASA) and focused primarily on providing skiing as a tool for rehabilitation. The association started with three chapters, and then quickly expanded its reach and programming. As its mission grew to include a broader range of sports and individuals with different types of physical disabilities, it was renamed the National Handicapped Sports and Recreation Association (NHSRA; Move United, 2020). With continued growth in scope and national impact, it was renamed in 1994 and became Disabled Sports USA to better reflect its inclusive and multi-sport focus.

Growth of Adaptive Sports in the 1970s-1980s

To help increase public awareness of wheelchair sports and recreation, Cliff and Nancy Crase launched *Sports 'N Spokes* magazine in 1975 (Sports 'N Spokes, n.d.). Cliff Crase became involved in wheelchair sports in 1964 while attending the University of Illinois. In 1968, he won the gold medal at the Paralympic Games in Tel Aviv. Crase continued to compete internationally through the early 1970s and joined the National Wheelchair Athletic Committee in 1971 and contributed to the early structure of national adaptive sport governance.

Over the years, adaptive sport opportunities in the U.S. gradually expanded to include a variety of team-based options. For instance, National Wheelchair Softball Association (NWSA) was established in 1976 and has served as the sport's governing body in the United States (National Wheelchair Softball Association, n.d.; Fjerstad, 2021). The 1970s also marked a notable period of growth for recreation-level adaptive sports programs offered by the rehabilitation centers. For example, in 1970, the National Sports Center for the Disabled (NSCD) was established in Winter Park, CO. Initially, the NSCD offered therapeutic ski programs for children with amputations (National Sports Center for the Disabled, n.d). Over time, it grew into one of the most comprehensive recreational adaptive sport providers in the state. The organization is currently offering year-round programming in more than 20 sports, including water sports, mountain biking, horseback riding, archery, and more (National Sports Center for the Disabled, n.d).

The first Winter Paralympic Games were held in 1976 in Sweden, which marked the expansion of the Paralympic movement globally. Unlike previous Paralympics, the

1976 Winter Games were the first to include athletes with disabilities beyond wheelchair users. The United States was represented by a single athlete, Bill Hovanic, who became the first U.S. Winter Paralympian. He carried the American flag during the Opening Ceremony and competed in four events across two sports: alpine skiing and cross-country skiing. Although he did not win a medal, Hovanic's participation was the beginning of U.S. involvement in the Winter Paralympic Games.

Beyond the Paralympic Games, adaptive sport in the United States continued to develop through regional events that expanded participation of athletes with disabilities. In 1977, the Boston Marathon officially included a wheelchair division for the first time and allowed seven athletes to compete (Huber, 1996). It was made possible by Bob Hall, who had unofficially completed the race two years earlier and demonstrated that wheelchair athletes could meet the physical demands of the course (McCann, 1996). The effort was organized by a committee under the National Spinal Cord Injury Association.

The Department of Veterans Affairs (VA) organized the National Veterans Wheelchair Games in 1981 which took place in Richmond, VA, and featured seven events and 77 athletes (Department of Veterans Affairs & Paralyzed Veterans of America, n.d). Since that time, the Games have been held annually without interruption in various states across the country.

In 1984, the United States hosted the Summer Olympic Games in Los Angeles, which was a significant moment for Paralympic sport as athletes with disabilities were invited to participate in demonstration events, specifically in wheelchair athletics (Legg & Steadward, 2011). In the same year, the United States also co-hosted the Summer

Paralympic Games. The Paralympics were split between two host nations in the following locations: New York, USA, and Stoke Mandeville, England. The separation occurred because the University of Illinois, originally selected to host the Games, announced it could only accommodate wheelchair events. In response, disability sport leaders Ben Lipton and Jack Weinstein stepped in to organize competitions in New York for athletes with cerebral palsy, amputations, and visual impairments. Therefore, different Paralympic events were split between two host counties. The United States ultimately finished first in the medal rankings, with the United Kingdom placing second (Legg & Steadward, 2011).

Major Developments from 1996 to Present

The 1996 Summer Paralympic Games were unique to the nation as it was the first time the U.S. fully hosted the Paralympics. The 1996 Games were held in Atlanta, GA, and featured 315 athletes from the U.S. alone (more than any other nation; the second largest was Great Britain with 248 athletes). Most of the Team USA athletes who competed at the Games were affiliated with organizations that focused on specific impairment groups. Hums and Fay (1995) elaborated that the majority of Team USA athletes were a part of the following organizations included the Dwarf Athletic Association of America (established since 1984), the United States Cerebral Palsy Athletic Association (formed in 1987), National Handicapped Sports, Wheelchair Sports USA, and the U.S. Association for Blind Athletes (founded in 1976).

Additionally, the International Paralympic Committee reported that the 1996 Games "were the first to attract worldwide corporate sponsorship" (IPC, n.d., para. 1) and

received national television coverage (IPC, n.d.). The CBS network aired four hours of weekend coverage, and additional programming was shown through a one-hour highlight show on Sports South and the Prime Network. However, viewership remained limited, and many Americans were unaware the Games had even taken place. Despite the significance, the 1996 Games are cited as an example of the challenges that arise from a non-unified approach to hosting the Games (Legg & Steadward, 2011). Three days after the Olympic Games concluded, Lois Appleby, the CEO of the 2000 Sydney Paralympic Games, visited Atlanta alongside members of the Sydney Olympic Organizing Committee. She described walking through the athlete village and venues and witnessing, in her words, "total chaos." She said:

> Television cables to scoreboards required for the Paralympics had been cut; the garbage in the main stadium and other venues had been left for the Paralympic organizing committee to clean, the village needed to be refigured because the Georgia Tech University did not have an agreement for the Paralympic athletes, and keys from most of the rooms in the Athletes' Village had been thrown into a box unlabeled thus requiring all of the locks to be changed (Legg & Steadward, 2011, p. 1109).

Lois Appleby recalled that the Olympic organizers in Atlanta had completely disengaged from the Paralympic Games, showing no responsibility or concern (Legg & Steadward, 2011). After the issues seen at the 1996 Atlanta Paralympic Games, there was a growing push to improve the organization and recognition of the Paralympics. On the other hand, according to athletes and organizers affiliated with the Shepherd Center in

Atlanta, the 1996 Games increased public visibility for Paralympic athletes (Shepherd Center, 2015). James Shepherd, board chairman of the Shepherd Center, noted that the Paralympics "accelerated the city's efforts to be accessible," which demonstrates positive social and infrastructural changes in Atlanta (Shepherd Center, 2015). The United States then submitted a formal proposal (bid) to host the Winter Paralympic Games in 2002.

In 2002, the United States won the bid and hosted the Winter Paralympic Games in Salt Lake City, UT. It was the first time the Winter Paralympics were held on the American continent. The Games featured athletes from 36 countries, who were competing in four sports: alpine skiing, biathlon, cross-country skiing, and ice sledge hockey (IPC, n.d.). A total of 57 athletes represented Team USA. As a result, the United States finished second in the gold medal standings but ranked first in the total medal count. The Games were also significant for their increased integration with the Olympic organizing structure with the 2002 Winter Olympic Games as both events shared infrastructure and operational resources. Most importantly, the 2002 Paralympics were the first Games to be executed under the International Olympic Committee (IOC) and International Paralympic Committee (IPC) cooperation agreement (Legg & Steadward, 2011). While the 1988 Seoul Games were the first to feature integrated Olympic and Paralympic events in the same city, the 2002 Games were the first to do so under a binding agreement. In other words, the IOC and IPC officially signed an agreement in 2000 that formally recognized and committed to supporting sport for athletes with disabilities. As a result of the 2000 IOC-IPC Cooperation Agreement, any city awarded

to host the Olympic Games is now required to also host the Paralympic Games (IPC, n.d.).

Following the Salt Lake City Games, the United States Olympic Committee (USOC) began putting more effort into developing adaptive sports in the country. In 2001, the U.S. Paralympics division was established within the USOC to support and manage athletes' recruitment and military sports (Batts & Andrews, 2011; USA Triathlon, n.d.). Additionally, the division strengthened partnerships with Veterans Affairs (VA) hospitals and military rehabilitation centers, particularly through initiatives like the Paralympic Military Program, launched in the mid-2000s to help injured service members transition into sport. As a result, many U.S. Paralympians have entered the pipeline through veteran-focused programs (Batts & Andrews, 2011). Furthermore, the role of sport in rehabilitation has expanded significantly, now serving not only as a tool for physical recovery but also as a pathway for veterans to pursue athletic goals. As Batts and Andrews (2011) explain, “the role of sport has come to occupy an important place in the rehabilitation of the injured physical body and the reclamation of a wounded American nation” (p. 555), which highlights its growing importance in promoting recovery and long-term well-being for service members.

In addition to government-funded initiatives, nonprofit and community-based organizations also emerged as catalysts for expanding adaptive sport opportunities. For example, BlazeSports America was established as the legacy organization of the 1996 Atlanta Paralympic Games (BlazeSports America, n.d). In 2002, it launched a national program in partnership with the National Recreation and Park Association. In 2003, the

Lakeshore Foundation located in Birmingham, AL, was designated as an official U.S. Olympic & Paralympic Training Site by the United States Olympic & Paralympic Committee (Lakeshore Foundation, n.d).

In the following years, the U.S. Paralympics began collaborating with local non-profit organizations, rehabilitation hospitals, community centers, and adaptive sport programs to develop a nationwide Paralympic Sport Clubs (PSC) Network. The primary goal was to expand access to adaptive sport and create a transition between community-level participation and elite Paralympic pathways. Furthermore, the U.S. Paralympic Sport Club Excellence Program was established by the U.S. National Paralympic Committee (Hutzler et al., 2016; USPC, 2016). Specifically, the Sport Club Excellence is a three-tiered recognition program designed to guide and evaluate the quality of Paralympic sport programming offered by community organizations across the country. The program is structured around three levels: bronze, silver, and gold. Each level represents progressively higher achievements in areas such as athlete development, coaching, program delivery, and community impact (Hutzler et al., 2016).

For instance, Ability360 in Phoenix, AZ, was recognized as a Gold Level Paralympic Sport Club in 2016 for its comprehensive programming and commitment to athlete development (Carter, 2016). Similarly, Disabled Athlete Sport Association was recognized as a Silver Paralympic Sport Club (DASA, n.d.). Other organizations such as National Ability Center (NAC) in Park City, UT, have also been recognized as an official Paralympic Sport Club. The NAC offers inclusive recreation programs that support athletes from the community level to the international stage. Another example is

Fayetteville Paralympic Sports Club which was developed within North Carolina's Parks and Recreation Department and offers accessible programming in various adaptive sports designed for youth and adults with disabilities (Fayetteville-Cumberland Parks and Recreation, n.d.).

In 2017, the United States was awarded the bid to host the 2028 Olympic and Paralympic Games in Los Angeles, CA (Lauermann, 2022). Hosting mega-sporting events carries considerable significance for the Paralympic movement in the United States, as previous research suggests that nations often experience a measurable performance benefit as the host country. Wilson and Ramchandani (2018) investigated this "host nation effect" and analyzed data from 16 Olympic and Paralympic Games between 1988 and 2018 (eight Summer and eight Winter Games). The results confirmed a statistically significant home advantage in the Paralympic Games, particularly in athletics, table tennis, and alpine skiing. The authors further identified contributing factors such as crowd support, venue familiarity, travel fatigue, and increased funding investment (Wilson & Ramchandani, 2018).

As Paralympic sports became more visible and recognized, the need for equal representation grew stronger. In 2019, the United States Olympic Committee officially changed its name and became the United States Olympic & Paralympic Committee (Gaston & Higson, 2023). The rebranding marked the first time a National Olympic Committee in the world formally included the word "Paralympic" in its title. This critical decision reflected nearly two decades of structural integration and growing institutional commitment to equity, following the USOC's designation as the official National

Paralympic Committee (NPC) in 2001. Oksana Masters, a U.S. Paralympian, commented on the rebranding saying: "this change is about more than an organizational name. To me this means that Paralympic athletes are fully included, embraced and celebrated by the USOPC" which shows positive attitudes toward the change (IPC, 2019, para. 4). She further elaborated: "I have personally felt the growing support for Paralympic athletes and the Paralympic Movement by this organization. I am so proud to represent the U.S. in the competition - and this allows me to take similar pride as a member of Team USA" (IPC, 2019, para. 4).

The United States Olympic and Paralympic Committee's (USOPC) name change along with the positive feedback from the Paralympic community highlights the organization's broader efforts toward inclusion. Gaston and Higson (2023) conducted a longitudinal study to evaluate the United States Olympic & Paralympic Committee's (USOPC) efforts to promote equity, diversity, and inclusion (EDI) in its leadership structure. The authors focused specifically on gender and racial representation from 2013 to 2017. The findings revealed that female representation reached critical mass across (30% or more of representation) in the Board of Directors and senior management levels which suggests progress in gender inclusion. In contrast, racial and ethnic inclusion were named as "lagged behind", with people of color consistently underrepresented. The authors attribute this disparity to homo-social reproduction which means the tendency to appoint similar individuals. As a recommendation, the authors suggested raising inclusion goals and using gender inclusion progress as a model for racial equity. Although Gaston and Higson (2023) focused on gender and racial aspects, the USOPC's decision to

incorporate “Paralympic” into its name reflects a parallel commitment to increasing the visibility and inclusion of another historically underrepresented group, athletes with disabilities.

In 2020, Move United was established through the strategic merger of two of the most influential nationwide adaptive sports organizations in the country: Disabled Sports USA and Adaptive Sports USA (Move United, 2020). Move United is an official affiliate of the USOPC and established its headquarters in Rockville, MD (USOPC, n.d.; Move United, n.d.). As of 2025, Move United has established over 230 community-based member organizations across 45 states in its network (Move United, n.d.). Moreover, Move United is embedded into the Paralympic pipeline in the United States. At the 2024 Paralympic Games in Paris, 141 athletes from Team USA, out of a total delegation of 225 athletes and guides, had previously engaged in a Move United program, event, or local member organization which highlights the organization’s broad reach in athlete development and participation. It is evident that community-based efforts are essential for introducing individuals to adaptive sport; however, limited opportunities remain at the collegiate level (Fultz et al., 2024; Townsend et al., 2024). For example, Fultz et al. (2023) conducted a document analysis to examine adaptive sport opportunities at 358 NCAA Division I universities in the United States. The authors stated that only 20.4% (73 institutions) reported adaptive sport opportunities, and just 3.9% (11 institutions) mentioned intercollegiate adaptive sport programs. Among those, public institutions (28.3%) were more likely than private ones (5%) to provide such opportunities.

Following the U.S. Department of Education's 2013 Dear Colleague Letter, which outlined schools' obligations (under Section 504 of the Rehabilitation Act) to provide equal athletic opportunities for students with disabilities, institutions have faced increased expectations to expand inclusive sport programming. To support the national shift toward inclusivity, in 2022, the National Collegiate Athletic Association (NCAA) launched a collaborative pilot program with the United States Olympic & Paralympic Committee (National Collegiate Athletic Association, 2022). The project is aimed at increasing awareness and opportunities for adaptive sports at the collegiate level. Research further indicates the influence of the 2013 Letter, as Kozub (2025) examined interscholastic athletic participation for students with disabilities over a 15-year period. The author found that opportunities expanded most significantly in the years following the Letter, particularly in sports such as track and field and wheelchair basketball. The study concluded that the Letter had a measurable positive impact, but growth remains uneven across states.

As Los Angeles 2028 Chairperson, Casey Wasserman stated: "the Paralympics represent endless possibilities to celebrate the human spirit. We are proud to host the Games in 2028 and create new opportunities the Movement has yet to see" (IPC, 2019, para. 8). Furthermore, it was announced that the United States will also host the 2034 Winter Paralympic Games in Salt Lake City, UT. This marks Salt Lake City's second time hosting the Winter Paralympics, after the success of the 2002 Games.

Special Olympics

To further understand the development of the Paralympic movement in the United States, it is essential to recognize the role of the Special Olympics (Brittain, 2016). The Special Olympics originated in Chicago, IL, and were founded by Eunice Kennedy Shriver (Matsunaga, 2019; Special Olympics, n.d). The movement is focused on providing sports opportunities for individuals with intellectual disabilities (Eidelman, 2011). The First Special Olympic World Games took place in 1968 at Soldier Field in Chicago and welcomed over 1,000 athletes from the United States and Canada (LA2015 Organizing Committee, 2015). At a time when people with disabilities were often excluded from community life, the Special Olympics were established as a foundational model of inclusion and empowerment (Matsunaga, 2019).

Some people unfamiliar with disability sports often confuse the Special Olympics and the Paralympics (Brittain, 2016). Although the two movements served different populations and had distinct goals, the Special Olympics helped raise awareness of the capabilities of all people with disabilities through sport. The Special Olympics helped build the community infrastructure for disability sports in the United States. Long before the U.S. Olympic Committee formally included Paralympic athletes within its structure, the Special Olympics had already established community-based programs in all 50 states. In many communities, the Special Olympics provided the first experience of sport and recreation for youth and adults with disabilities. While the Special Olympics movement has played a key role in promoting participation in sport and recreation for individuals with intellectual disabilities, some scholars have questioned whether it truly advances

broader social inclusion. Giese et al. (2022) argue that there is limited research critically examining the extent to which the Special Olympics promote inclusion. The authors identified a scholarly gap that challenges the assumption that participation alone equates to social integration (Giese et al., 2022).

The Special Olympics has also led the way in promoting inclusive participation and competition through its Unified Sports program, which pairs up athletes with and without intellectual disabilities on the same team (Eidelman, 2011; Matsunaga, 2019). Unified Sports teams exist in a wide range of sports, including team and individual sports. The programs are implemented at local, national, and international levels. For example, the Unified Cup, also known as the Unified Soccer World Cup, was held for the first time in Chicago in 2018 and for the second time in Detroit in 2022 (Special Olympics, n.d.). More than 300 soccer players from over 20 countries competed on teams that included athletes with and without intellectual disabilities playing together (Special Olympics, n.d.).

School-based Unified programs have also expanded across the United States. In particular, the Special Olympics Unified Champion Schools program focuses on promoting social inclusion in K-12 schools and on college campuses through inclusive sports and inclusive youth leadership. According to the Special Olympics official website (n.d.), the program has been adopted in an increasing number of U.S. states and is currently implemented in over 10,800 schools across all 50 states, the District of Columbia, and Puerto Rico. Collectively, the program reaches approximately 19.5 million young individuals who help to reduce stigma and bullying directed at individuals

with intellectual disabilities. Although Unified Sports is not part of the Paralympic system, it has contributed to shifting public perspectives on disability and sport by normalizing inclusive participation and fostering positive interactions between athletes with and without disabilities (Matsunaga, 2019). Such changes in social perceptions are relevant to the present study, as attitudes toward disability influence access to sport opportunities and developmental pathways toward Paralympic-level competition.

Sydney 2000

Athletes with intellectual impairments were first included to compete at the 1996 Atlanta Paralympic Games (Athletes Without Limits, n.d.). However, the next Games in Sydney 2000 became highly controversial. After Spain won the gold medal in men's basketball for athletes with intellectual impairments, it was revealed that 10 out of the 12 players on the team did not meet the eligibility criteria and did not actually have an intellectual disability (Brittain, 2016). Therefore, the 2000 Games became notorious for cheating, and the scandal exposed serious flaws in the classification process. In response, the International Paralympic Committee (IPC) suspended all events for athletes with intellectual impairments until a more reliable classification system could be developed. The suspension lasted for over a decade and limited opportunities for athletes with intellectual disabilities to compete at the elite level. After years of research and collaboration with organizations such as International Sports Federation for Persons with Intellectual Disability (INASFID, now known as Virtus), the IPC reintroduced events for athletes with intellectual impairments at the London 2012 Paralympic Games (Athletes Without Limits, n.d.). Since then, athletes in this classification have been eligible to

compete in a limited number of events across three sports: athletics, swimming, and table tennis (Athletes Without Limits, n.d.).

Legal Foundations

The legal system in the United States includes several policies that aimed at protecting the rights of people with disabilities and preventing discrimination against them (Moorman, 2025). One of the most impactful legal developments in disability rights was the passage of the Rehabilitation Act of 1973, particularly Section 504, which prohibited discrimination against individuals with disabilities in any program receiving federal funding (Aytur et al., 2018; Friedman & Norman, 2009).

Internationally, key legal and policy developments also supported the growing recognition of sport as a right for all individuals, including individuals with disabilities. For example, in 1978, the United Nations Educational, Scientific and Cultural Organization (UNESCO) adopted the International Charter of Physical Education and Sport, declaring that participation in sport is a fundamental human right. The charter stated that access to physical education and sport should be guaranteed for everyone, regardless of physical ability.

By the late 1980s, disability rights activists in the United States were advocating to increase accessibility and legal protections. Particularly, one example was a protest, the Capitol Crawl, that took place in March of 1990 (Beasley, 2020). Around 60 activists with physical disabilities left their mobility devices and crawled up the steps of the U.S. Capitol to demonstrate the inaccessibility of public spaces. The protest was organized by

one of the disability rights groups, American Disabled for Attendant Programs today (ADAPT) that still exists (Davis, 2016).

A few months later, on July 26, 1990, President George H. W. Bush signed the Americans with Disabilities Act (ADA) into law. This federal legislation is considered one of the most powerful laws ever passed regarding the rights of individuals with disabilities (Cottingham et al., 2016). Specifically, the ADA emphasizes that individuals with disabilities have the right to be fully included in all areas of society (Friedman & Norman, 2009; Ryan et al., 2014). It also acknowledges that people with disabilities have been and often continue to be excluded due to various barriers such as discriminatory architecture and the lack of necessary modifications to existing facilities (Whaley et al., 2024).

Another significant change introduced by federal legislation was the 1998 Paralympic Amendment to the Amateur Sports Act (Gaston & Higson, 2023; Hart, 2020). Originally passed in 1978 and later renamed the Ted Stevens Olympic and Amateur Sports Act, the law recognized the U.S. Olympic Committee as the main body responsible for organizing Olympic-related activity in the United States. Moreover, with the 1998 revision, the Paralympic Movement was formally included under the USOC's structure by the Congressional mandate (Hart, 2020).

Hums et al. (2003) analyzed the impact of the 1998 Stevens Amendment to the Amateur Sports Act. Specifically, with this amendment, the Act was renamed the Ted Stevens Olympic and Amateur Sports Act, and for the first time, the word "Paralympic" was inserted alongside "Olympic" and "Pan-American" throughout the law. The authors

stated that, despite this mandate, Congress provided no specific implementation guidelines, leaving the USOC, National Governing Bodies (NGBs), and Disabled Sports Organizations (DSOs) to interpret and act upon the law independently. While the law authorizes the USOC to integrate athletes with disabilities into mainstream sport governance structures, it also imposes three conditions that limit that authority: "integration must be (1) feasible, (2) in the best interest of the sport, and (3) approved by the relevant NGB" (Hums et al., 2003, p. 265). These conditions effectively grant NGBs veto power. In other words, it means that if even one of these conditions is not met then the integration cannot move forward. In practice, this gives each NGB the ability to block efforts to include Paralympic athletes within their programs, even if the USOC believes integration would be beneficial and appropriate.

In 2004, the federal government updated the Individuals with Disabilities Education Act which was initially passed in 1975 (Aytur et al., 2018; Individuals with Disabilities Education Act, 2004). Under the IDEA, public schools are required to meet the needs of children and youth with disabilities at a public expense (National Center for Learning Disabilities, n.d.). In addition, federal guidance in the United States has emphasized the need for schools to create additional opportunities that expand access to sport and recreational activities for students with disabilities (Townsend et al., 2025). Specifically, this recommendation was outlined in a 2013 Dear Colleague Letter issued by the U.S. Department of Education, following a report from the Government Accountability Office (GAO). The report revealed that students with disabilities were

participating in extracurricular athletics at significantly lower rates than their non-disabled peers (Ashby, 2010).

In addition to federal policies, court decisions have also contributed to the development of the Paralympic movement in the United States. In particular, the McFadden v. Grasmick (2005) case, in which para-athlete (and future Paralympian) Tatyana McFadden sued the Maryland school district for denying her the opportunity to compete alongside her able-bodied peers. The court ruled in her favor which later led to the passage of the Fitness and Athletic Equity for Students with Disabilities Act in 2008. The act required schools in Maryland to provide equal athletic opportunities for students with disabilities. In her interview with NBC sports, McFadden mentioned:

> I came home with a silver and bronze medal, and all I wanted to do was be on that high school track team. Being denied as the only female wheelchair racer was very difficult. I was denied a uniform, access and the right to race alongside others at the high school track meets. I even had to take a separate bus, which I absolutely hated (Longman, 2023, para. 9).

McFadden's efforts contributed to a broader push to recognize and support adaptive athletes across all levels of competition in the United States. Furthermore, McFadden’s story became a standing reminder that legal recognition alone does not guarantee equity or inclusion. Legal advancements like the Stevens Amendment have formally embedded Paralympic sport into the national framework, but implementation gaps and barriers remain.

Eligibility and Paralympic Classification

To be eligible to compete at the Paralympic Games, athletes must first demonstrate that they have an eligible impairment (EI) as defined by the International Paralympic Committee for the specific sport in which they intend to compete (IPC Classification Code, 2025). Eligible impairments are grouped into three broad categories: physical impairments, vision impairment, and intellectual impairment (IPC, n.d.). Furthermore, the impairments include a range of conditions that result in biomechanical limitations to movement. For example, impaired muscle power, limb deficiency, and coordination impairments (IPC Classification Code, 2025). In 2019, the International Paralympic Committee (IPC) recognized 10 eligible impairments for Paralympic competition. See Table 4 for the full list of eligible impairments and brief descriptions.

In 2025, the IPC revised its classification system and consolidated the eligible impairments into seven categories (IPC Classification Code, 2025). The updated list comprises five physical impairments: impaired muscle power, impaired passive range of movement, limb deficiency and/or limb length difference, short stature, coordination impairments (which includes conditions like hypertonia, ataxia, and athetosis); visual and intellectual impairments remained as separate categories. Each Paralympic sport determines which types of impairments are eligible within its own classification rules (Lawson, 2020). Some sports such as para-athletics and para swimming are open to athletes from all seven types of impairment, while others are more selective. For instance, goalball is a sport exclusively for athletes with visual impairments (Brittain, 2016).

Once an athlete's impairment is deemed eligible, they must then meet the minimum impairment criteria (MIC) established for that sport (Tweedy & Vanlandewijck, 2011). The MIC ensures that the impairment significantly impacts sport performance. Determining both the presence and the impact of eligible impairment is the responsibility of the international sport federation that governs each Paralympic sport (Tweedy & Vanlandewijck, 2011). In other words, the MIC ensures that impairment has a measurable and meaningful impact on sport-specific performance, thereby maintaining fair competition. Athletes who do not meet the MIC are considered ineligible for that sport, even if they have recognized impairment, as the classification system is designed to group athletes whose impairments result in similar levels of competitive impact. However, since each Paralympic sport involves different physical demands, the MIC varies by sport which means that an athlete may qualify for one sport but not meet the criteria for another.

Classification Process

Once an athlete meets the minimum impairment criteria, the next step in the classification process involves assigning the athlete to a sport class. Sport classes are designed to group athletes with similar activity limitations caused by their impairments to ensure fair competition (Howe & Jones, 2006). As mentioned earlier, each sport places different physical and functional demands on the body; therefore, assignment to a class is also a sport-specific step. For example, an athlete with a lower limb deficiency may be placed in a different sport class in para swimming than in para-athletics due to the different movement patterns and biomechanical requirements of each sport. The class-

assignment process involves a combination of physical and technical assessment conducted by trained and certified classifiers before the competition (Tweedy et al., 2014).

Classification system is "a constantly evolving process as more is learned about the impact of various impairments upon sport performance" (Brittain, 2025, p. 54). As part of this evolution, classification addresses two key questions: (1) which impairment groups are eligible to compete in a specific sport? and (2) which athletes, with what type and level of impairment, may fairly compete against one another in a particular event? (Brittain, 2025). The evolution of Paralympic classification has shifted from a medical model to a functional, sports-specific approach (Jaeken, 2020). Initially, classification was solely based on medical diagnoses, but since 1992, it has aimed to capture the impact of disability on sport performance (Jaeken, 2020). The International Paralympic Committee now uses the International Classification of Functioning, Disability and Health language to describe eligibility in terms of impairment and activity limitation (Reina, 2014). The goal became to classify athletes not just by diagnosis, but by how their impairment impacts their ability to perform key movements or tasks in a specific sport. However, researchers pointed out that there is a need for more evidence-based classification research to establish the relationship between specific impairments and sport performance (Jaeken, 2020).

Challenges in the Classification System

Several researchers and organizations have raised concerns about the fairness and inclusiveness of the Paralympic classification system (Burns et al., 2021; Mann &

Ravensbergen, 2018). For example, the Ehlers-Danlos Society expressed their opinion regarding the International Paralympic Committee's (IPC) classification rules, specifically the exclusion of athletes with Ehlers-Danlos Syndrome (EDS) based solely on their diagnosis (The Ehlers-Danlos Society, 2020). EDS encompasses a group of connective tissue disorders characterized by joint hypermobility, instability, and, in some cases, hypotonia. While joint hypermobility can be measured objectively, the IPC's current classification system may face limitations due to the lack of widely established data across diverse populations. In other words, athletes with neurological or musculoskeletal conditions such as Ehlers-Danlos Syndrome or other disorders characterized by joint instability or fatigue may be excluded from Paralympic competition. Importantly, this exclusion is not due to an absence of functional limitation, but rather because their impairments do not meet the specific eligibility thresholds outlined in current classification criteria.

Various criticisms have led to ongoing discussion within the adaptive sport community about whether the system unintentionally excludes athletes whose impairments are genuine but do not conform to the current categories or measurement standards. As a result, some individuals are deemed "not impaired enough" for Paralympic eligibility. For example, Canadian goalball player Amy Burk shared in an interview to CBC Sports that she was set to compete at the Para Pan American Games in 2015 when a classification panel informed her, she was no longer eligible (Dichter, 2024). Burk was previously classified as B3 class, which is the least impaired category, she was told she "Saw too well" (Dichter, 2024, para 5). Burk elaborated that it was in a

congenital condition and there could not be any improvement over time. She mentioned: "The visual impairment that I have, it's very stable. It's a genetic condition. I was born with it. And so, to go my whole life, [and then] at 25 to be told you see too good, it's like, well, my vision has never changed" (Dichter, 2024, para 6). Subsequently, Burk pursued legal action with the support of the Canadian Paralympic Committee, which resulted in the successful restoration of her Paralympic eligibility (Dichter, 2024).

Reclassification Concerns

Another concern is the reclassification of athletes before major competitions. Such reclassification may result in athletes being placed in a different class or deemed ineligible to compete. For example, at the London 2012 Paralympic Games, American swimmer Mallory Weggemann was reclassified (from S7 class to S8) just days before competition. In the interview to BBC Sport (2012), she explained, “I was always borderline of the S6 and the S7 category, so for me to be moved up to an S8 was very hard" (para 6). Weggemann emphasized that "it [reclassification] changes my events, it changes a lot of things, and just like every other athlete here I’ve spent the last four years training for this moment” (BBC Sport, 2012, para 7). She stressed that receiving news of her reclassification fewer than 24 hours before competition significantly impacted on her motivation and belief in fair competition (BBC Sport, 2012). Weggemann highlighted the inequity of the reclassification and stated: "I'm a T10 complete paraplegic, I have no feeling or movement from my belly button down and I'm competing against people who are bi-lateral double amputees below the knee, who have, from below the knee up, full function" (para 11), describing the situation as “it is like competing against seven athletes

who are doping" (BBC Sport, 2012, para. 12). Despite the disagreements between the athlete and IPC, Mallory Weggemann remained in S8 classification for 2012 London Paralympic Games. Several other athletes from Team USA were reclassified within a short window before 2012 Paralympics (Keith, 2012).

After multiple incidents of reclassification in the days leading to the Games, the International Paralympic Committee developed a "zero classification policy" which was first introduced in 2014 and implemented in 2016 Rio Paralympic Games (IPC, 2021). The policy sought to ensure that athletes complete the classification process well in advance of competition, which in turn would eliminate last-minute classifications (IPC, 2021). However, exceptional circumstances emerged during the Tokyo 2020 Paralympic Games. Due to the COVID-19 pandemic, events and preparations were significantly postponed. In March 2021, the IPC Governing Board temporarily suspended the zero-classification policy for eight sports, including athletics, boccia, canoe, cycling, rowing, sitting volleyball, wheelchair rugby, and wheelchair tennis (IPC, 2021). Therefore, para-athletes in these sports were still required to complete the classification process during the Tokyo 2020 Paralympic Games, often just days before their events.

Intentional Misrepresentation

Although certain reclassification outcomes clearly disadvantage affected athletes, it is important to recognize that the classification system also faces challenges from the opposite direction. Scholars reported that some Paralympic athletes have intentionally misrepresented the extent of their impairments to classification panels, a practice commonly referred to as "intentional misrepresentation" (IPC, 2024; Makitov et al.,

2024). Intentional misrepresentation involves an attempt to deliberately mislead classifiers either by exaggerating functional limitations or concealing abilities to obtain placement in a lower-functioning competition class. Thereby, athletes can gain an unfair advantage over athletes with more severe impairments. The Classification Code prescribes specific sanctions for such violations and clearly identifies the individuals to whom they apply (IPC, 2024); however, despite these regulations and penalties, the issue persists at both national and international levels. As Powis and Macbeth (2020) note, controversies arise when athletes with markedly lesser impairments compete in the same class as those with substantially greater impairments while appearing to adhere to the IPC policy. Such practices undermine the integrity of competition and expose a fundamental vulnerability in the classification system (Makitov et al., 2024). Thus, classification remains a controversial and complex topic that highlights the tension between ensuring fair competition and maintaining inclusivity within the classification system (Burns et al., 2021; Tweedy et al., 2014).

Implications for Athlete Development

Paralympic classification impacts athlete preparation and competition at the Paralympic Games (Tweedy et al., 2014). As para-athletes dedicate years to training with the goal of competing at elite level, they build their preparation around performing within a specific sport class. If that class changes, whether through reclassification or updates to the classification system, it can disrupt years of training and planning, which in turn, directly influences performance outcomes (Tweedy et al., 2014). Therefore, classification is integral to athlete development in parasport.

Conceptual Foundations

Impairment and Disability

To further explore the terminology used of parasport, it is important to recognize and distinguish the terms “impairment” and “disability”. The term “disability” can be understood differently depending on the perspective or framework applied (Goodley, 2011; Haegele & Hodge, 2016). Scholars in disability studies emphasize that the power to define disability is shaped by cognitive authority (Brittain, 2004; Haegele & Hodge, 2016; Haegele & McKay, 2025). Haegele and McKay (2025) explained that “a cognitive authority is a professional organization or collection of people who have the social capital to establish definitions and are key gatekeepers in particular fields” (p. 2). This concept is not new as Wendell (1996) also discussed the societal power held by medical professionals in shaping how disability is defined and perceived. He mentioned:

> Their authority operates far beyond medical institutions, inside and in relation to government bureaucracies, insurance companies, courts, schools, charities, rehabilitative organizations, and institutes for long-term care. Medical professionals also exercise considerable authority with all types of employers, certifying people medically capable or incapable of working (Wendell, 1996, p. 117).

Understanding disability through this lens has been common for many decades (Joshi & Pappageorge, 2023). However, alternative perspectives have also emerged in the discourse on disability and impairment (Haegele & Hodge, 2016). Scholars frequently refer to two predominant models: the medical model and the social model (Fitzgerald

(2012; Haegele & McKay, 2025). Models of disability can provide different lenses to understand and view disability. In particular, Sibanda (2015) explained that models "reveal the ways in which society perceives people with disabilities and provides or limits provisions and entitlements in form of goods and services, economic influence, political power and equality of opportunities for people with disabilities (p. 219).

Medical Model of Disability

The origins of the medical model of disability can be traced to the mid-19th century, a period when disability began to be framed primarily through a biomedical lens. During this time, a person with a disability was often viewed as a deviation from societal norms (Joshi & Pappageorge, 2023; Letsosa & Retief, 2018). Over the past six decades, the medical model has received considerable criticism from scholars and activists (Brittain, 2004; Smith & Bundon, 2017; Thomas, 2007). Critics argue that focusing primarily on impairment and pathology, the model overlooks the broader societal and structural factors that contribute to disability (Hogan, 2019). For example, Sauermilch and colleagues (2025) explained that "a major limitation of the medical model of disability is that it minimizes the lived experiences of individuals with disabilities, giving rise to and perpetuating discriminatory and ableist ideologies within society" (p. 526). One of the core beliefs of the medical model is that disability must be treated or cured (Brittain, 2004; Darcy & Buhalis, 2010; Joshi & Pappageorge, 2023). Additionally, researchers claimed that the medical model fails to acknowledge the social, cultural, and political dimensions of the lives of people with disabilities (Darcy & Buhalis, 2010).

Based on the medical model framework, disability is positioned as a personal tragedy or deficiency rather than a form of human diversity (Hogan, 2019; Vehmas et al., 2009). As a result, such views contribute to the marginalization of individuals with disabilities and promote exclusionary practices in education and society (Brittain, 2004). Several scholars closely linked medical model view as one of the perspectives of ableist ideology (Haegele & McKay, 2025; Smith & Bundon, 2017). Ableist beliefs are based on the idea that disability as something "abnormal or less than nondisabled people" (Haegele & McKay, 2025, p. 6) which reinforces discrimination toward this group. Similarly, Brittain (2004) explained that medical model is based on the biological perspective and beliefs within the medical field, he elaborated that "problems that people with disabilities face are the result of their physical and/or mental impairments and are independent of the wider sociocultural, physical, and political environments (p. 430). The medical model has been widely adopted in the healthcare field, where it positions medical professionals as primarily responsible for diagnosing and treating individuals with disabilities (Bunbury, 2019).

Social Model of Disability

Hogan (2019) explained that the social model of disability understands disability as "the product of an unaccommodating and oppressive society, rather than an individual and medical problem" (p. E16). In response to the limitations of the medical model, the social model of disability emerged as an alternative framework. In comparison to the medical model, the social model adopts an opposite approach in how disability is defined, understood, and addressed (Altman, 2014). As Haegele and Hodge (2016) explain, the

social model emphasizes that “it is society that imposes disability on individuals with impairments” (p. 197) which further shifts the focus from the individual’s body to the external barriers.

The foundation of the social model takes back to the activism of the British disability rights movement in the 1970s (Campbell & Oliver, 1996). Specifically, when the Union of the Physically Impaired Against Segregation (UPIAS) asserted that society is the primary source of disability and limitations, rather than impairment (Oliver, 1983, 2004; Pate, 2012). A British scholar Mike Oliver first described the term “social model of disability” in 1983, building upon the work of UPIAS and defining a clear distinction between two terms: impairment and disability (Oliver, 2004). According to Oliver (2004), impairment refers to physical, sensory, or cognitive condition, while disability is the result of social barriers. For example, social barriers can include such an inaccessible environment, discriminatory policies, negative attitudes, and many others that prevent full participation in society (Haegele et al., 2016; Oliver, 2004, 2013). In other words, the social model views disability not as a personal deficit to be treated or cured, but as a social construct (Haegele & McKay, 2025).

The social model of disability promotes an understanding of disability as a socially constructed and universally relevant experience, rather than a fixed medical condition (Brittain, 2004; Darcy & Buhalis, 2010). As Bunbury (2019) elaborated that “every individual has the possibility of becoming disabled at any point in their lives, and ‘disability’ covers such a range of characteristics” (p. 27). Mitra (2006) explored how disability is conceptualized and stated that there is no singular version of the social

model. Instead, there are multiple interpretations that reflect different perspectives. In particular, Mitra (2006) identified nine versions of the social model framework: "(a) the social model of the United Kingdom, (b) the oppressed minority model, (c) the social constructionist version of the United States, (d) the impairment version, (e) the independent living version, (f) the postmodern version, (g) the continuum version, (h) the human variation version, and (i) the discrimination version" (p. 237). The above-mentioned nine versions share similar assumptions about the concept of disability and are collectively understood under the broader framework of the social model of disability (Mitra, 2006; Haegele & Hodge, 2016).

One of the main criticisms of the social model of disability is that it tends to overlook impairment as a real and meaningful part of an individual's lived experience. Specifically, Palmer and Harley (2012) argued that the model draws too sharp a distinction between impairment and disability. Additionally, it entirely separates the concepts of impairment and disability (Palmer & Harley, 2012). Moreover, the authors claim that separation results in an incomplete picture of what it means to live with a disability (Palmer & Harley, 2012). In other words, when focusing primarily on social and environmental barriers, the social model may unintentionally silence or minimize the personal and physical realities that come with impairment. In response to this critique, advocates of the social model maintain that they do not deny the impact impairments may have on individuals' functioning. However, they argue that those limitations are not what define disability (Oliver, 2013; Silvers & Ralston, 2010). Instead, they assert that

disability arises from the unequal social environments that create barriers for people with disabilities (Oliver, 2013).

Another critique of the social model comes from the social creationist perspective which argues that disability, along with other forms of oppression such as racism and sexism, is not just socially perceived but actively produced by institutionalized systems of discrimination (Oliver & Barnes, 2012). This perspective is different from the broader social constructionist lens which tends to emphasize the role of individual beliefs and societal attitudes which impact the meaning of disability. Instead, the social creationist view highlights the role of embedded institutional structures such as laws and policies that prolong exclusion. In other words, the social creationist perspective identifies formal institutions as key sources of inequality. According to Oliver and Barnes (2012), the harmful ideologies and stereotypes associated with impairment are so deeply rooted in society that they become accepted as unquestioned truths.

Reindal (2008, 2009) has proposed the social-relational model of disability to address negative comments. The social-relational model acknowledges that social and institutional barriers play a significant role in limiting participation and access for people with disabilities. However, the experience of impairment itself can also present challenges that should not be ignored. The core idea of the model is the relationship between the personal effects of impairment and the social structures that either support or hinder participation (Reindal, 2008). It views disability as something that exists in addition to the challenges caused by impairment. Moreover, it occurs when society does not respond in ways that are fair and inclusive.

Empowerment Model of Disability

In addition to the medical and social models of disability, the empowerment model offers a different perspective to view disability. Empowerment refers to "restoration to individuals of a sense of their own value and strength and their own capacity to handle life's problems" (Bush & Folger, 1994, p. 2). Similarly, Moran and colleagues (2017) describe empowerment as "a process of giving power or control over one's own life to an individual or group that has traditionally been marginalized or had control of their own life limited or surrendered" (p. 20). Sibanda (2015) further elaborates that empowerment is "an emancipation process in which people with disabilities are empowered to exercise their rights, obtain equal access to resources and participate actively in social transformation and decision making" (p. 222). Hutzler and Bergman (2011) also noted that "empowerment is strongly anchored in the development of physical activity practices in participants with disabilities" (p. 2).

Scholars have proposed various theories of empowerment that became a foundation for the development of later empowerment models (Perkins & Zimmerman, 1995; Sadan, 1997). In particular, some researchers have focused on empowerment at the individual level (within one's self; Zimmerman, 1995), while other scholars have explored empowerment from a relational or organizational perspective and focused on relationships within institutions or groups can influence empowerment (Zimmerman et al., 2000; Hennink et al., 2012). For example, empowerment at the individual level may involve developing self-confidence and believing in one's ability to achieve personal goals (Moran et al., 2017). At the group level, it can refer to creating a collective sense of

purpose such as empowering individuals with disabilities to engage in sport and recreation through peer support and shared experiences. At the organizational level, empowerment may be represented in a form that enables institutions to create and expand opportunities for skill development and leadership for their members (Sadan, 1997).

In sport, empowerment refers to the process through which individuals with disabilities gain confidence and control over their lives by participating in or competing in sporting events (Fay & Wolff, 2009). The concept of empowerment is relevant to individuals with both congenital and acquired disabilities, as participation in sport can support the development of a stronger self-concept and promote greater independence in both groups. Moran and colleagues (2017) proposed a model of empowerment that includes three elements: programming, training, and support. The authors emphasized that their model addresses barriers to participation in adaptive sports and applies the foundations of the empowerment theory to explain how "one can empower participants with disabilities, instructors, and community organizations" (p. 22). Moran et al. (2017) used community level adaptive sports programs to illustrate the proposed empowerment model.

The first component, known as "programming", emphasizes the importance of offering a variety of options. The authors introduced the term "continuum of opportunity" (p. 22) to describe a range of programs that accommodate individuals with varying physical, cognitive, and social abilities. Communities are encouraged to design adaptive sports programs that enable participants to engage at levels appropriate to their current capabilities. This continuum may be offered by a single organization or across multiple

entities in a community. Two key factors guide the development of programming options: setting (segregated and integrated) and group make-up (specialized, reverse inclusion, and full inclusion). See Table 5 for specific examples of programming structures.

The second component is “support”, which highlights that individuals participating in adaptive programs may benefit from various forms of assistance whether requested by the participant themselves, a caregiver, or a program provider. The authors emphasized three key considerations related to support: who requires support, type of support, and the expertise level of the support person. The model includes support for both participants and instructors and divides support into two categories: direct and indirect. Direct support involves a person being physically present during each session, while indirect support may involve remote consultation or observation without being on-site. Additionally, the level of expertise of the support provider may vary. For example, support person can be a disability-specific professional, or a trained volunteer or a peer who helps participants stay focused and engaged. See Table 6 for specific examples of how support can be implemented.

The third component is "training", known as “Strategies of Success” (SOS) (Moran et al., 2017, p. 23). The authors explain that training is an educational component which aims to equip instructors and support personnel with the knowledge and practical skills required to facilitate inclusive participation for individuals of all abilities. The topics for training include disability awareness, understanding various disabilities,

effective communication, behavior management, goal setting, instructional adaptation, environmental modifications, and inclusive teaching methods (Moran et al., 2017).

It is important to note that "in order to empower individuals with disabilities, support must also be provided for those who will be working with them in various community contexts, including teachers, instructors, and coaches" (Moran et al., 2017, p. 22). Therefore, the role of coaches is particularly significant in the development of para-athletes.

Classification Terminology

Within the Paralympic movement, different perspectives on impairment and disability have influenced how the classification system has evolved. As mentioned in the earlier section, the International Paralympic Committee (IPC) classification system is based on the concept of impairment (Mann et al., 2021), which refers to the medically diagnosed condition affecting the athlete's physical, visual, or intellectual function (Tweedy et al., 2014). The primary goal of classification is to reduce the impact of an athlete's impairment on sport performance and ensure that athletic success is determined by the skill and preparation rather than the severity of the impairment (Connick et al., 2018; Davis et al., 1996; Kalbfleisch, 2022; Lawson, 2020). Importantly, the latest classification system in parasport (IPC Classification Code, 2025) also adopts the term "impairment" as the basis for categorizing athletes. In alignment with Paralympic classification terminology, this study also utilizes the term "impairment" when addressing classification-related information. However, it is important to clarify that the

use of the term “impairment” does not reflect adherence to the medical model of disability.

Athlete Development Frameworks

Athlete development frameworks provide structured approaches to understanding how athletes progress from initial participation to elite competition. In this section, two key models are discussed: the Long-Term Athlete Development (LTAD) model and the American Development Model (ADM). Both frameworks, while originally designed for able-bodied athletes, have been adapted to address the needs of athletes with disabilities.

Long-Term Development Model

The Long-Term Athlete Development (LTAD) model is one of the most widely recognized and adopted frameworks in both Olympic and Paralympic sports (Sales & Misener, 2025). The LTAD model was developed by Canadian researchers in the early 2000s to guide athletes through a series of progressive stages tailored to their age, development, and skill level (Balyi et al., 2013; Ropret & Jevtic, 2019; Sales & Misener, 2025). The LTAD model was primarily conceptualized by Istvan Balyi, a Canadian sport scientist. Istvan Balyi was born in Hungary and moved to Canada in the early 1990s, where he became the resident sport scientist at the National Coaching Institute in Victoria, British Columbia (Eisenmann, 2023). Balyi collaborated with Richard Way, a sport development expert who helped adapt and implement the LTAD framework in Canada’s sport policies.

History and Early Development

One of the earliest athlete development models was introduced by Bloom (1985) which formed the foundation for later frameworks, including the Long-Term Athlete Development (LTAD) model (Sales & Misener, 2025). Bloom (1986) outlined athlete development as a progression through three key stages: (1) the early years, (2) the middle years, and (3) the late years. The early years are associated with an athlete's initial entry into sport, where the focus is on establishing interest and development of basic skills of sport. The middle years are focused on structured training and development of more complex skills refinement. During this stage, athletes often begin to specialize. The late years emphasize high-level performance or perfection. Specifically, the focus is on mastery of advanced skills, and the pursuit of excellence in elite sport.

In 1995, Istvan Balyi introduced an initial four-stage model of athlete development which consisted of the following stages: 1) FUNdamentals, 2) Training to Train, 3) Training to Compete, and 4) Training to Win (Eisenmann, 2018; Lifschutz, 2020; Mushariwa, 2023). The purpose of the model was to provide a structured system for athletes and practical guidance for coaches, with a focus on skill development and preparation for competition (Lifschutz, 2020). However, Canada's performance at the 2004 Olympic Games was linked to systemic flaws in the country's sport development system (Eisenmann, 2018). Therefore, there was an increasing recognition of the need for a more holistic and sustainable approach (Eisenmann, 2018). In 2005, Sport Canada initiated the formation of an Expert Group to lead the development of a national athlete development strategy (Sport for Life, 2016).

In response, the original model was expanded into the seven-stage Long-Term Development Model (Balyi et al., 2013; Lifschutz, 2020). In 2005, Sport Canada designated the LTAD model as the preferred framework for athlete development in the country and required all National Sports Organizations (NSOs) to develop their own models based on LTAD for their respective sports (Sales & Misener, 2025). The revised model became successful not only in Canada but internationally as well. Balyi collaborated with national sport organizations in over 20 countries, including Australia, New Zealand, and the United States (Ropret & Jevtic, 2019). The updated model was designed to address developmental gaps and emphasized more age-appropriate training (Sport for Life, 2019). Additionally, Balyi emphasized the importance of long-term athlete engagement and the promotion of lifelong participation in sport (Lifschutz, 2020). Between 2005 and 2014, the Expert Group actively supported the creation and implementation of LTAD frameworks and supporting materials tailored for each national sport organization (NSO) with federal funding (Sport for Life, 2016).

Sport for Life is an independent non-profit organization based in Canada. The organization was officially established in 2014 and operates separately from the government but collaborates closely with national sport organizations, schools, community groups, and public health sectors to improve sport and physical activity participation. In addition, Sport for Life provides multiple resources that support the implementation and understanding of the Long-Term Development in Sport and Physical Activity (formerly Long-Term Athlete Development) model. Resources include published guides and sport-specific frameworks for more than 40 sports including

Olympic and Paralympic disciplines. Each framework is tailored to address the appropriate developmental stage. The organization has also released a series of associated reports and updated editions such as LTAD 2.1 and LTDM 3.0.

Name Change

The Long-Term Development Model was originally introduced as the Long-Term Athlete Development Model (LTAD) (Balyi & Way, 1995). Specifically, the model was created to outline what "is to be done at each stage of human development to give every child the best chance of engaging in lifelong, health-enhancing physical activity; and for those with the drive and talent, the best chance of athletic success" (Balyi et al., 2013, p. 1).

However, as the model began to expand, questions were raised about whether the term "athlete" was appropriate to use (Sport for Life, 2019). Many professionals working with young children, older adults, or individuals in non-competitive environments felt that the term "athlete" did not reflect the populations they served. Instead, they preferred the more inclusive term "participant." However, the new term was not universally accepted. Coaches and sport professionals who worked with individuals who were pursuing high-performance or elite athletic careers found the term "participant" too vague and believed that it does not fully describe individuals who desire to achieve full athletic potential (Sport for Life, 2019). Following the debates, terminology of the model varied, mentioning Long-Term Athlete or Participant Development (LTPD; Lloyd et al., 2015).

In 2019, with the release of the third edition (LTAD 3.0), the model was officially renamed Long-Term Development in Sport and Physical Activity to reflect both

competitive athletes and recreational participants (Sport for Life, 2019). However, because the original name remains the most widely recognized and familiar, it continues to be used throughout the literature despite revisions. As outlined in Sport for Life (2019), Long-Term Development in Sport and Physical Activity is a framework that pursues the following goals: 1) "to support the development of physical literacy, 2) strive for excellence, and 3) empower people to be active for life" (p. 20). In this paper, I use both acronyms: LTAD (Long-Term Athlete Development) and LTDM (Long-Term Development in Sport and Physical Activity) to reflect the model's evolution over time.

Core Factors of LTAD

The LTAD model identifies a set of core factors that influence how athletes progress through different stages of long-term development (Sport for Life, 2016, 2019). The factors have been refined over time, especially with the release of updated versions of the model. Each factor addresses a specific area that contributes to athlete growth.

LTAD 2.1

The LTAD 2.1 model outlined 10 key factors that influence long-term athlete development such as 1) physical literacy; 2) specialization; 3) development age; 4) sensitive periods; 5) mental, cognitive, and emotional development; 6) periodization; 7) competition; 8) excellence takes time; 9) system alignment and integration; 10) continuous improvement (See Table 7 for full description).

LDAD 3.0

The most recent version of the Long-Term Development in Sport and Physical Activity (LTAD 3.0) includes 22 key factors that are organized into three main

categories: personal-level, organizational-level, and system-level factors (Sales & Misener, 2025; Sport for Life, 2019). Personal-level factors focus on the athlete and consist of seven elements such as physical literacy, quality environment, developmental age, sensitive periods, predisposition, excellence takes time, and for life. The LTAD model highlights that personal factors are especially useful for parents, caregivers, teachers, instructors, and coaches - who work with participants in the early and middle stages of development (Sport for Life, 2019). Rather than focusing solely on performance, personal factors emphasize the importance of creating an inclusive and supportive environment that can promote lifelong engagement in sports and physical activity. Additionally, each personal factor addresses a specific aspect of human development. See Table 8 for the full list of personal factors.

Compared to the previous structure that identified only 10 key principles, the updated list provides a comprehensive understanding of athlete development. Specifically, it acknowledges not only the individual needs of athletes, but also the broader organizational and systemic factors that influence athletes' journey in sport.

Organizational-level factors focus on sport clubs, schools, recreation, and community programs. Factors in this category include how athletes are introduced to sport, the design of competition, and transitions. See Table 9 for the full list of organization-level factors.

At a broader level, system-level factors emphasize the importance of alignment and collaboration across national, regional, and local sport systems. Specifically, the factors focus on creating inclusive and evidence-informed structures that ensure

continuity across different stages of development. System level includes seven factors that collectively support a coordinated and sustainable approach to long-term development. See Table 10 for the full list of system-level factors.

Preliminary Stages of LTAD Model

The LTAD model is organized into seven stages that reflect the physical, cognitive, and emotional development of individuals as they move from early engagement in physical activity to elite performance and lifelong participation. In 2015, two preliminary stages were added to the model (edition 2.0): awareness and first involvement (Sales & Misener, 2025; Sport for Life, 2019). Each stage of the LTAD model is designed to provide age-appropriate guidance primarily for coaches and sport administrators. Each stage is discussed in detail below as outlined in the most recent Long-Term Development in Sport and Physical Activity edition 3.0 model (Sport for Life, 2019).

Awareness (preliminary stage)

The first preliminary stage is “awareness”. Specifically, awareness emphasizes the importance of individuals simply knowing that an opportunity exists (Sport for Life, 2019). Without awareness, neither individuals nor those responsible for their care such as parents or educators can take the necessary steps to explore or access programs. The authors mentioned that this preliminary step is especially critical for populations that have historically faced barriers to participation, such as girls and women, people with disabilities, Indigenous communities, individuals identifying as LGBTQ+, older adults, and those experiencing poverty or geographic isolation. For these groups, targeted

outreach and accessible communication about available opportunities are essential to bridge the initial gap between potential and participation.

First Involvement (preliminary stage)

After individuals become aware of a sport or physical activity, they transition to the second preliminary stage of "first involvement". First involvement can be described as initial experience or introduction to sport or physical activity. This is a critical step as individuals form their first impression of sport or physical activity which can shape their motivations, and future commitment (Sport for Life, 2019). For example, a welcoming and enjoyable first experience increases the likelihood of continued participation, while a negative or unaccommodating introduction may deter individuals from ever returning. Organizations must first approach involvement with intentional planning and care. Moreover, programs should eliminate participation barriers, particularly for people with disabilities and individuals from both visible and invisible minority groups. It is essential that newcomers feel a genuine sense of belonging and are encouraged to return by feeling welcomed and supported.

The LTAD model discusses social integration as an important part of the preliminary stage. In particular, providing opportunities to connect with existing participants can also help reduce feelings of isolation. Additionally, affordability must be considered to ensure that financial constraints do not limit ongoing involvement. The availability of appropriate facilities and equipment is equally critical as well as the presence of a trained leader. In addition, a leader should be capable of adapting activities

to meet the participant's needs. To conclude, the first experience sets the tone for a journey in sport and physical activity whether it is competitive or recreational.

Stages of LTAD Model

The first three stages of the LTAD model - 1) Active Start, 2) FUNdamentals, and 3) Learn to Train form the foundation for lifelong participation and potential success at the elite level. Although these initial stages are typically linked to childhood development, adults who are new to a sport or physical activity may also move through the FUNdamentals and Learn to Train stages as they acquire foundational skills. Progression through these stages is not determined strictly by age, but rather by an individual's developmental readiness (Sport for Life, 2019). In other words, it means acknowledging that individuals grow, learn, and develop at different rates. As such, transitions between stages are described as developmentally based.

Active Start (First stage)

The first stage of the LTAD model is “Active Start”. This stage generally encompasses children from birth to approximately 6 years of age. At this stage, coaches or educators initiate the journey of developing physical literacy. Specifically, the goal is to make movement and activity a natural and enjoyable part of the child’s everyday routine (Sport for Life, 2019). The emphasis is on creating fun and engaging experiences that promote foundational motor skills, including locomotor skills (like crawling, running, and jumping), object manipulation skills (such as throwing, catching, or kicking), and balance-related movements (like climbing or standing on one foot).

Importantly, movements or activities are not restricted to one setting as they occur on land, in water, in snow or ice, and even in the air through jumping or climbing.

Children are encouraged to meet the national 24-hour movement guidelines, which recommend approximately 180 minutes of active movement each day. To achieve this goal, the model suggests implementing a balanced mix of structured play which includes a) play led by adults (25%), and b) unstructured, child-led free play (75%). Whether it is running around a park, playing in nature, a movement environment helps children to build physical skills and executive functions. For example, working memory and cognitive flexibility. The stage emphasizes the value of safe exploration. In other words, to allow children to experience both success and failure through mini challenges. Outdoor activities such as grassy fields, or forest trails provide opportunities to strengthen physical and social-emotional development. Ultimately, Active Start is about ensuring movement is joyful and socially connected.

FUNdamentals (Second stage)

The second stage, "FUNdamentals", builds upon the foundation established in the Active Start phase and continues to enhance physical literacy in children. This stage typically includes boys aged 6-9 and 6-8, although individual readiness may vary (Sport for Life, 2019). The focus during this phase is on developing fundamental movement skills such as running, jumping, wheeling, throwing, catching, swimming, and activities on ice and snow in a way that is enjoyable and engaging. As the name of this stage suggests, fun remains a central focus. Daily movements are encouraged to promote a love for physical activity and sports that will carry forward into later stages of development.

Activities within this stage are intentionally designed to promote the "ABCs of athleticism": agility, balance, coordination, and speed. The model suggests that these skills are better to be practiced across different environments: on the ground (75% of the year), in water (15%), and on ice or snow (Sport for Life, 2019). The structure of the program includes a healthy mix of free play (50%), adult-led play (35%), and instructional sport-specific activities (25%). Light resistance training through the use of body weight, medicine balls, or Swiss balls may also be introduced to build strength safely. The model emphasizes that periodization is not introduced at this age yet, however, programs should still be well-organized to maintain a balance of activity, skill development, and enjoyment (Sport for Life, 2019).

In addition to physical development, this stage continues to strengthen executive functioning skills, including working memory and cognitive flexibility. It also encourages coaches and sport administrators to begin teaching the basics of sport rules, etiquette, and values like fair play and respect for others. Importantly, the FUNdamentals stage emphasizes inclusive participation over competition. In other words, when competition does occur, it should be informal and have no recorded outcomes to minimize pressure.

Learn to Train (Third stage)

The third stage is "Learn to Train". The stage represents a crucial developmental phase for boys around the age of nine and girls around eight. During this period, both brain and body are particularly receptive to acquiring sport-specific and foundational skills which makes it an optimal window for skill development across different kinds of sports and physical activities (Sport for Life, 2019). Similarly to earlier states, children

are encouraged to engage in diverse movements to build a broad base of physical literacy. A balanced approach is essential, with approximately 70% of activities focused on training and 30% on competition-related experiences (Sport for Life, 2019). Importantly, over-specialization is discouraged, and programming should remain fun and social to ensure continued engagement. In other words, children should not focus intensively on a single sport at this early stage.

Coaches and sport leaders are advised to recognize and adapt to individual differences in physical, psychological, emotional, cognitive, and moral development. At this stage, children can begin to develop life skills such as teamwork through introductory exposure to local competitions and multiple sports. Training plans may follow a single or double periodization model and should incorporate both structured sport-specific training as well as opportunities to engage in other physical activities to promote well-rounded development.

This stage also introduces important supplemental skills such as warm-up and cool-down routines, basic nutrition and hydration principles, recovery strategies such as quality sleep, and early mental preparation practices like anxiety management. Informal talent identification may occur. Specifically, informal talent identification refers to a non-systematic process where coaches, instructors, or sport program leaders observe and recognize young participants who demonstrate above-average potential in a particular sport or physical activity. For example, a coach might notice a child who picks up new skills quickly, shows a strong sense of coordination, or consistently displays motivation

and focus during practice. Furthermore, these observations may lead to encouraging the child to join more advanced training sessions.

Train to Train (Fourth stage)

The fourth stage is "Train to Train" represents early adolescence, typically, ages 11 to 15 for females and 12 to 16 for males (Sport for Life, 2019). This is a critical period of athlete development where many young athletes either choose to commit to elite performance and begin their journey to reach their athletic potential or exit sport altogether due to a variety of challenges. During this period, both physical and psychological development become more intense, as youth undergo significant changes associated with adolescent growth, particularly around Peak Height Velocity (PHV; Sport for Life, 2019). In other words, an individual experiences the fastest rate of growth in height. This period is widely recognized as a key indicator of biological maturation. Thus, training must account for these biological changes and emphasize skill refinement, aerobic and strength development, and event specialization.

Additionally, this stage requires a strong focus on mental skills and ethical conduct. Young athletes are introduced to formalized competitions including rankings and standings. Athletes are still exploring multiple sports and are not yet fully committed to a single discipline. As outlined in the model, roughly 66% of their time is devoted to their primary sport, while the remaining 33% is allocated to a secondary sport (Sport for Life, 2019). The training environment should still promote fun, friendship, and a positive team culture to prevent burnout. However, young athletes are increasingly exposed to extremely intense training loads (sport-specific training may occur six to nine times per

week) often alongside participation in other complementary sports. The model discusses various challenges that often occur at this stage. Particularly, many adolescents drop out in the "train to train" stage. Common issues include but are not limited to pressure to specialize too early, training that is not age-appropriate, academic stress, psychological strain, lack of support, and conflict between club and school teams (Sport for Life, 2019). If young athletes perceive sport as overly focused on results or feel excluded, unsupported, or unsafe, they are more likely to disengage.

The model provides several recommendations to mitigate these challenges. For example, a collaborative approach among coaches, sport organizations, and families is essential to ensure the adolescent athlete receives consistent support across all areas of their development. Some examples of those approaches include a) adjusting training schedules to prevent overload, b) open communication to address concerns early, and c) creating inclusive environments that prioritize both physical and psychological safety.

Train to Compete (Fifth stage)

The fifth stage is "Train to Compete" describes a period of development for athletes who have moved beyond the adolescent growth spurt and are now entering high-performance competitions, often at the regional, junior national, or early national level. The typical age range for this stage is approximately 16 to 23 for males and 15 to 21 for females (Sport for Life, 2019). However, it is important to note that these age ranges are flexible, and individuals may fall outside of them depending on various factors. At this point in athlete development, athletes have committed to a single sport. At this stage, specialized coaching and training equipment is required for athletes. Athletes typically

refine their sport-specific skills and strategies with training programs strategically tailored to optimize technical, tactical, and physical conditioning (Sport for Life, 2019). Preparation is informed by evidence-based assessments that identify individual strengths and areas for improvement. Competition becomes more dominant over training, with athletes competing approximately 60% of their time to test and refine their abilities under pressure (Sport for Life, 2019). Meanwhile, training continues (40%) to support overall development and maintain performance and ranges between nine to 12 times per week (Sport for Life, 2019).

Athletes are also expected to demonstrate more advanced life skills and psychological readiness including focus and emotional regulation. Maintaining a balance between sport demands and other responsibilities in education, work, and personal life becomes increasingly important. Moreover, the model emphasizes support systems that should be in place to assist with this balance.

Additionally, important components of athletic performance such as sleep, nutrition, recovery, and mental preparation are optimized during this stage to ensure peak performance. Periodization becomes increasingly sophisticated and may involve single, double, or even triple periodization cycles. It means that athletes may prepare for one, two, or even three major competitions within a season, and not just participate, but reach peak form for each. Overall, the “Train to Compete” stage represents increased commitment and intensity, where the focus shifts from broad development to achieving competitive excellence.

Train to Win (Sixth stage)

The sixth stage is “train to win” which refers to the top of athletic development within the LDAT framework. At this point, athletes are typically competing at the highest levels of their sport such as the Olympic Games, Paralympic Games, and World Championships. The typical age range for this stage is flexible, with males generally 18 and older and females 19 and older. However, it is important to note that these age ranges are flexible, and individuals may fall outside of them depending on various factors. At this stage, athletes are expected to demonstrate peak physical conditioning, advanced technical and tactical strategies, and elite-level mental preparation (Sport for Life, 2019). Training programs are individualized and evidence-based. Sport-specific training load remains high and ranges from nine to 15 times a week. While competitions take around 70% (Sport for Life, 2019). Periodization is structured around single, double, triple, or even multiple periodization cycles to ensure athletes are in peak condition for the most important competitions (Sport for Life, 2019). Additionally, frequent recovery and regeneration periods (referred to as prophylactic breaks) are integrated into training plans to reduce the risk of injury and burnout (Sport for Life, 2019). At this level, performance is supported by a team of experts, including strength and conditioning coaches, sport psychologists, and nutritionists, who help maximize athletic performance.

Active for Life (Seventh stage)

Finally, the seventh stage is “active for life”. At this stage, participants transition from structured developmental pathways into lifelong involvement in physical activity. The model emphasizes that individuals' motivations are grounded in enjoyment, personal

fulfillment, health maintenance, or community engagement. Based on previous stages where individuals developed physical literacy and skills, individuals at the final stage engage in sport and activity on their own terms whether that means playing competitively or simply staying active (Sport for Life, 2019). Individuals may enter this stage at any age.

There are two key pathways: 1) Competitive for Life and 2) Fit for Life. The first path includes individuals who continue to compete within formal structures of sport, such as recreational leagues or age-based competitions. While they may not be on a high-performance track, athletes are driven by goals of improvement and achievement, and they often follow intentional training routines to improve their performance. In contrast, the second path is characterized by participation that is motivated by personal satisfaction and the social or emotional benefits of physical activity. Individuals on this path may occasionally compete recreationally, but competition is not their primary goal. Instead, they put emphasis on maintaining an active lifestyle.

Additionally, the final stage recognizes another group of individuals who are described in the model as "Sport and Physical Activity Leaders" (Sport for Life, 2019, p. 34). This group of leaders includes coaches, officials, administrators, and other sport professionals. Specifically, individuals in this group have a strong desire to actively participate in sport but not as an athlete (Sport for Life, 2019).

Different Pathways in LTAD

The LTAD framework recognizes that athlete development is not always a linear process (Canadian Paralympic Committee & Sport for Life, 2024; Sport for Life, 2019;

Till et al., 2022). Instead, individuals may follow various pathways based on timing, opportunity, interest, and personal circumstances. As the framework emphasizes, "everyone's journey is unique" (p. 37). Below are several examples of how individuals may progress in sport and physical activity over time:

- Participant A stays involved in one of their first sports from early exposure all the way through to high performance levels, such as the World Championships.
- Participant B begins in a different sport or enters sport later in life. Eventually, the participant identified a preferred discipline during adolescence that will pursue through to the Olympics or Paralympics.
- Participant C experiences early success in a particular sport, then shifts to another, and later returns to their initial sport with renewed focus and commitment.
- Participant D reaches a high level of achievement in one sport but later transfers to a new sport, requiring a return to earlier developmental stages before progressing again.
- Participant E explores multiple sports throughout childhood and adolescence without advancing to "Train to Train" but still gains valuable experiences and remains "Active for Life".
- Participant F becomes aware of sport and activity options later in life, and through a positive first experience, adopts a lifelong habit of physical activity.

To more effectively address the non-linear pathways, the No Accidental Champions (NAC) document was developed (Canadian Paralympic Committee & Sport for Life, 2024). NAC is a supplemental resource to LTDM. It was designed to identify

the specific challenges faced by Para athletes and highlight the unique opportunities available to them throughout their development. It also acknowledges that athletes with disabilities develop through the same seven stages as outlined in Sport for Life (2019) as well as 10 pillars of support that are necessary for the development (See Table 11). Moreover, the NAC provides guidelines for both athlete and sport development (Canadian Paralympic Committee & Sport for Life, 2024).

American Development Model (ADM)

The United States has been one of the dominating nations in the international competitions across multiple Paralympics Games (Mauerberg-deCastro et al., 2016). Ferrar at al. (2018) described that: “the journey to become a Team USA National Team coach or athlete is one that often takes years of practice, dedication, passion and learning, while experiencing the roller coaster of successes and failures along the way” (p. 60).

The American Development Model (ADM) was first developed by USA Hockey in 2009 (Lifschutz, 2020; Martel, 2015). Sales and Misener (2025) state primary reasons for developing the ADM such as "to assist with retention and age-appropriate development of athletes and enhance coaches’ education" (p. 145). The model gained success and was later adopted by the United States Olympic & Paralympic Committee in 2014 (USOPC, n.d.). Similar to the LTAD Canadian model, the ADM incorporates long-term athlete development principles that guide the development process (Hainline, 2019; Lifschutz, 2020). According to the ADM Manual, there are five key principles (USOPC, n.d., p. 3):

1. **Universal access to create opportunities for all athletes**. Universal access means that organizations must ensure all children regardless of gender, race, ability, or economic status have an opportunity to participate in sport.
2. **Developmentally appropriate activities that emphasize motor and foundational skills**. Emphasis is placed on the developmental age rather than chronological age. It recognizes that young athletes mature at different rates physically, emotionally, and cognitively.
3. **Multi-sport participation**. Children are encouraged to explore different sports based on their interests and developmental level, rather than specializing in a single sport earlier in their development.
4. **Fun, engaging and progressively challenging atmosphere**. Coaches and sport professionals need to create an environment that is fun, engaging, and appropriately challenging to keep young athletes involved and motivated.
5. **Quality coaching at all age levels.** Coach education is essential across all levels of athlete development. The best coaches commit to lifelong learning. Each NGB provides guidelines for coaches in their respective sports.

Brief History

In 1996, USA Hockey established the National Team Development Program in Michigan as an effort to identify and develop elite ice hockey players under the age of 18 (USA Hockey National Team Development Program, n.d). Since its development, the program has evolved significantly and incorporated several changes including training

methodologies, athlete selection processes, and developmental strategies (Kanters et al., 2015; Martel, 2015).

While the model originated in ice hockey, it has since been adapted by other sports including football, baseball, lacrosse, and volleyball (Fjelstul et al., 2022). For example, USA Lacrosse (n.d.) describes the program as "a multi-stage process for middle and high school-aged boys' and girls' players that leads to U.S. Youth National Teams" (para. 1). Whereas USA Volleyball (n.d.) incorporated the program in 2021 and stated that "young volleyball athletes who aspire to take the next step on their path to the podium have the opportunity to be identified, develop, and be evaluated within a high-level training environment within the USA Volleyball National Team system" (para 1). Unlike broader frameworks such as the American Development Model (ADM) and the Long-Term Development Model (LTAD) that emphasize multi-sport participation and lifelong engagement in sports and physical activity, the National Team Development Program (NTDP) takes a more focused and elite-oriented approach. However, it is important to mention that the ADM was developed by combining key ideas and successful strategies of both LTAD and NTDP models (Martel, 2015).

Martel (2015) examined American youth sports during the early 2000s and identified several shortcomings in the system. Youth athletes were often either undertrained or placed in overly competitive environments that mirrored adult competitions. Training programs tended to emphasize chronological age rather than biological maturation which neglected the individual variation in growth and development among young athletes (Martel, 2015). As a result, key sensitive periods for

accelerated adaptation when athletes are most receptive to specific types of training were frequently overlooked (Martel, 2015). Additionally, there was a noticeable gap in coaching education. Martel (2015) stated: "limited coaching education was provided to those working with the youngest age groups" (p. 40). One of the factors that contributed to the development of the American Development Model (ADM) was the growing concern over declining youth sports participation and the rising childhood obesity crisis (Cecchini et al., 2010; Hainline, 2019; USOPC, n.d.; Woolf & Aron, 2013). According to the Centers for Disease Control and Prevention (2015), childhood obesity increased significantly over time: the percentage of children aged 6 to 11 classified as obese went up from 7% in 1980 to 18% by 2010, while rates among adolescents aged 12 to 19 also increased from 5% to 18% during the same time period. Moreover, according to the National Academy of Sciences (2013), the United States had the highest rates of obesity among individuals aged 5 to 19 when compared to 17 other developed nations.

Since 2014, the United States Olympic & Paralympic Committee and National Governing Bodies have collaborated on implementing the ADM nationwide. According to the American Development Model Manual, “as of 2021, 31 National Governing Bodies (NGBs) have formalized ADM programs” (p. 7). Hainline (2019) added that "if followed, the ADM will allow American youth to use sport as a path toward active and healthy lifestyles and create opportunities for athletes to maximize their full potential" (p. 1012).

Stages of ADM

The American Development Model (ADM) consists of five stages that guide athletes in long-term development (USOPC, n.d).

Stage 1: Discover, Learn, and Play

The first stage encompasses the introduction to sport and physical activity for children aged 0 to 12 years (USOPC, n.d). At this stage, emphasis is put on basic skill development, age-appropriate sport education, and a fun, engaging environment. Practice or play (depending on age) is prioritized rather than competition. Although competition can occur, it is typically at the local or regional levels and should remain secondary to the experience of enjoyment. The key elements of this stage are 1) Discover, 2) Learn, and 3) Play.

The Discover component is centered around helping children develop a passion for sport and physical activity through enjoyable and engaging experiences. The primary goal is to ensure sport and physical activity remain fun, as this positive experience encourages continued participation and motivation (USOPC, n.d.). It is essential that children are exposed to a variety of sports which allows them to explore different movements and activities. The ADM encourages the transition from one sport to another at this stage as it can help children identify the activities, they enjoy the most. Furthermore, spontaneous play is highly encouraged, as it allows children to naturally discover new skills and develop physical literacy.

The Learn phase focuses on developing the core fundamental movements necessary for participation in sports and physical activity. At this stage, children are

introduced to basic sport techniques and age-appropriate equipment (USOPC, n.d.). The emphasis is on creating a foundation for skill development to ensure that children can build on these basic movements as they progress through later stages of athletic development. Additionally, children in this stage are introduced to the rules of various games and sports. However, coaches and sport professionals should keep learning engaging and age appropriate.

The Play element is focused on providing opportunities for both spontaneous and organized play. Physical education classes, open gym sessions, and casual (local) competitions provide children with a well-rounded experience. Similar to the previous elements, the ADM model stresses that play should be enjoyable and not overly focused on winning or competition. Instead, it should encourage children to develop their interest in sports and create lasting memories of positive experiences. Both organized and spontaneous play involves social interaction with peers which also impacts interest and motivation.

Stage 1 for Athletes with Disabilities

The ADM model explicitly addresses athletes with disabilities and integrates additional guidelines (USOPC, n.d). For athletes with disabilities, Stage 1 includes the Awareness and First Contact phases. This is particularly significant, as many athletes with disabilities may be either newly introduced to physical activity or sports after acquiring a disability, or they may have been born with a disability and are exploring the world of sports for the first time.

Initial stages are focused on physical literacy which includes learning basic movements and skills similarly to for able-bodied athletes. However, given that these athletes with disabilities may require adaptations or specialized equipment, it is important that coaches and sport administrators are trained to provide the necessary adaptations to ensure an inclusive and positive experience (USOPC, n.d.). At this stage, the goal is to provide a positive first experience that promotes confidence and motivation.

Stage 2: Develop and Challenge

Stage 2 prioritizes more structured sport practices and skill refinement. Athletes' age range is between the ages of 10 and 16 (USOPC, n.d). At this stage, they begin to focus on improving their skills and techniques. There are two components of this stage: Develop and Challenge, which work together to refine the athlete's ability and motivation to pursue higher levels of athletic performance.

The Develop phase focuses on refining basic skills and techniques. Athletes continue to improve their physical literacy and progress in more sport-specific movements. At this stage, young athletes work on mastering core fundamental movements to improve their strength, agility, balance, coordination, and endurance (key physical attributes). The developmental focus is also on personal growth. Athletes at this stage should begin to understand the connection between physical training and mental focus. As athletes grow, they may experience varying maturation rates, which can influence their abilities and progress. During this phase, the emphasis is put on training that balances physical, technical, tactical, psychological, and social development. It is important that coaches adjust their approaches to account for these differences.

The Challenge phase is about encouraging athletes to test their abilities through structured competition (USOPC, n.d). At this stage, athletes begin to experience more formalized recreational competitions, typically at the local and regional levels (USOPC, n.d.). However, competitions at this stage are viewed more as a practice opportunity rather than winning at all costs. In addition, athletes should be given the chance to experience a variety of competitive scenarios, which will help them grow as individuals and team players.

Stage 2 for Athletes with Disabilities

Athletes with disabilities continue to refine their motor skills and techniques, while also exploring sport-specific equipment and adaptations. Coaches must ensure that the challenges provided are appropriate to the athlete's developmental stage and are tailored to their specific needs (USOPC, n.d).

Stage 3: Train and Compete

Stage 3 can be described as a transition from general skill development to sport-specific training and competitive performance. Athletes' age range is between the ages of 13 and 19 (USOPC, n.d). At this stage, athletes are usually selecting a particular sport that interests them the most. The elements of this stage are Train and Compete that guide athletes in their development.

The Train component centers on preparing athletes for high-level competition through consistent, structured, and sport-specific training. Some athletes may still be involved in multiple sports; however, they typically begin to narrow their focus toward one or two primary sports. Additionally, conditioning training becomes more sport-

specific where athletes follow a consistent training schedule. Sport science support, including nutrition and recovery strategies, becomes more important at this stage to help athletes develop in a comprehensive way. Also, athletes participate in developmental training camps (USOPC, n.d).

The Compete component focuses on the growing number of competitions. Athletes begin to take part in more challenging competitions. Events may include local, regional, and national competitions, as well as school or club tournaments. Athletes should be encouraged to view competition as an extension of training (USOPC, n.d.). The focus remains on development and learning rather than solely on results.

Stage 3 for Athletes with Disabilities

For athletes with disabilities, Stage 3 similarly focuses on competitive environments and advanced training. However, access to such opportunities may be limited depending on geographic location or the availability of specialized programs. In these cases, integration with school teams or travel to regional clubs and development camps may be necessary. If the option to maintain and advance training is not available locally, the ADM model suggests that "bring in experts that can help educate your coaches, club and athletes on advanced training and programming" (USOPC, n.d., p. 19).

Stage 4. Part 1: Excel for High Performance

Stage 4 consists of two parallel paths, where athletes reach a decision point: to either pursue sport at a high-performance level or continue to compete for enjoyment and social connections. While there is no specific age range, typical athletes enter this stage starting 15 years old or older with over 10 years of experience (USOPC, n.d.). This stage

recognizes that not all athletes will follow the same path; however, their decision must be reflected in their goals and pursuits.

The Excel for High Performance pathway is designed for athletes who choose to pursue elite sport with a strong commitment to performance excellence (USOPC, n.d.). Athletes who select this track commit to competing at the highest levels, including national or international stages, and are willing to invest significant amounts of time and energy into structured, year-round training programs. Long-term periodized plans are common. The focus is on maximizing talent. High-performance athletes require access to advanced coaching, facilities, and sport science resources.

Stage 4. Part 2: Participate and Succeed

The Participate and Succeed is parallel pathway that an athlete may choose instead of high-performance track and focuses on athletes who choose to remain involved in sport for fun and social connection. Athletes may not pursue elite competition but continue training and competition at a level that suits their interests and lifestyles such as participation in sport club or regional events. Training programs may be less intense or less frequent, but they should still provide structure and opportunity for growth (USOPC, n.d.). The ADM acknowledges that fun and socialization remain key motivators, even for older athletes. What “fun” looks like may evolve, but the focus on "be active and involved" (USOPC, n.d., p. 20). Athletes may choose to be involved in multiple sports which will promote cross-development of skills.

Stage 4 for Athletes with Disabilities

At Stage 4, athletes with disabilities begin to pursue more advanced goals, which may include training for elite Paralympic competition or continuing sport for personal growth and enjoyment. For athletes who choose the high-performance path, this stage requires access to specialized coaching, structured training programs, and competitive opportunities that align with their sport classification. It is the responsibility of coaches and sport organizations to ensure that necessary resources are available for para-athletes. Para-athletes are encouraged to participate with national-level camps and performance development programs.

Stage 5: Thrive and Mentor (Active for Life)

Stage 5 refers to the continuation of lifelong engagement in sport and physical activity. Athletes in this stage transition from performance-focused to individuals who use sport to maintain a healthy lifestyle and well-being (USOPC, n.d.). While some may continue competing at recreational or master's levels, many athletes take on new roles as mentors, coaches, officials, or advocates within the sport industry. There are two components of this stage: Thrive and Mentor (USOPC, n.d).

The Thrive component emphasizes the importance of physical activity as lifelong practice. Athletes no longer need to compete at high-performance levels to benefit from sport. Instead, participation is described as a way to stay healthy and continue to engage in physical activity, including recreational sports or fitness classes.

The Mentor component discusses athletes' transition into mentoring roles. Many individuals at this stage look for ways to give back to the community to share knowledge

and experience with the next generation of athletes. Former athletes often become youth coaches, team managers, referees, or officials. Some athletes take on administrative roles within clubs or national governing bodies (USOPC, n.d).

Stage 5 for Athletes with Disabilities

At Stage 5, athletes with disabilities are encouraged not only to stay active but also to take on leadership roles in their communities (USOPC, n.d). A key part of this stage involves helping educate able-bodied sport programs on how to include and support athletes with disabilities. Former para-athletes can contribute to educating clubs, schools, and sport organizations on parasport through their experiences. Similarly, to their able-bodied peers, the primary goal is to improve the sport experience for future generations and promote inclusive events.

Inconsistencies Across ADM Resources

It is important to acknowledge several discrepancies observed during the analysis and review of documents and resources associated with the American Development Model (ADM). This review included official resources provided by the United States Olympic & Paralympic Committee (USOPC), the ADM Manual, official websites of National Governing Bodies (NGBs), and scholarly literature. As mentioned earlier, the USOPC and ADM Manual consistently describe ADM as a five-stage model which includes the following stages:

1. Discover, Learn, and Play
2. Develop and Challenge
3. Train and Compete

4. A) Excel for High Performance B) Participate and Succeed
5. Thrive and Mentor

While each stage is clearly described and structured in both documents, some inconsistencies were observed when reviewing how various National Governing Bodies (NGBs) present the ADM on their platforms. Several NGBs label their development models as "ADM," but the frameworks align more closely with the Long-Term Athlete Development (LTAD) model rather than the official ADM structure. For instance, United States Golf Association (n.d.) presents a six-stage model with titles such as 1) Active Start, 2) Fundamentals, 3) Learn to Play, 4) Play to Improve, 5) Play to Compete, and 6) Play to Win - all of which align more closely with the LTAD terminology rather than ADM. However, it seems that these stages have been adapted to fit the specifics of golf as a sport (e.g. replacing "train" with "play").

Similarly, USA Triathlon (n.d.) features eight stages: 1) Active Start, 2) Fundamentals, 3) Learn to Train, 4) Train to Train, 5) Learn to Compete, 6) Train to Compete, 7) Train to Win, and 8) Triathlon for Life. Again, the stages align closely with the LTAD framework, not the ADM structure, even though it is presented under the ADM label. USA Archery (2014), on the other hand, lists six stages: 1) Discover and Explore, 2) Progress, 3) Apply and Develop, 4) Excel and Grow, 5) Mastery, and 6) Archery for Life which do not clearly match either ADM or LTAD.

Some NGBs do reflect the official ADM structure more closely than others. For example, USA Field Hockey (n.d.) outlines five stages: 1) Discover, 2) Play and Learn, 3) Compete and Improve, 4) Seriously Fun or Peak Performance, and 5) Lifetime

Engagement; although the wording is slightly different, the stages are generally consistent with the ADM framework. Moreover, USA Fencing (n.d.) lists six stages: 1) Discovery, 2) Fundamentals, 3) Develop, 4) Optimize, 5) Excellence and Growth, and 6) Fencing for Lifetime which can be viewed as a hybrid of ADM and LTAD components. Importantly, five key principles of the ADM remain consistent across all sources and are also echoed in scholarly literature.

In a recent book chapter on para-athlete development, Sales and Misener (2025) discussed stages of the American Development Model. Specifically, the authors stated that the ADM follows the Canadian approach and consists of eight stages: 1) Active Start; 2) Fundamentals; 3) Learn to Train; 4) Train to Train; 5) Learn to Compete; 6) Train to Compete; 7) Train to Win; and 8) For Life (Sales & Misener, 2025, p. 145). However, the authors did not directly refer to a specific citation in the text; therefore, the origin of the framework they presented remains unclear. Similarly, Lifschutz (2020) examined the implementation of the ADM within USA Hockey and noted that the model "borrows heavily from LTAD" (p. 3). According to a version of the ADM framework tailored specifically to USA Hockey, as cited by Lifschutz (2020), the model outlines eight developmental stages: 1) Active Start (Learn to Skate), 2) FUNdamentals (Play to Learn), 3) Learn to Train, 4) Train to Train, 5) Learn to Compete, 6) Train to Compete, 7) Train to Win, and 8) Hockey for Life (American Development Model, n.d.).

The ADM is a relatively new athlete development framework in the United States. The application across NGBs varies widely. For example, the development of the American Development Model (ADM) for tennis began in 2018 when the United States

Tennis Association (USTA) organized a diverse task force to address declining youth sport participation and identify strategies for long-term growth (Davies et al., 2021). By early 2019, the USTA finalized a tennis-specific ADM model "that represented a framework for individualized success to support a lifelong love of tennis" (Davies et al., 2021, p. 39). Many organizations appear to modify or mix ADM with the LTAD model to better fit the unique needs and language of their sport. However, several scholars have emphasized that the ADM is primarily based on the LTAD framework (Fjelstul et al., 2022; Lifschutz, 2020; Martel, 2015; Sales & Misener, 2025), which helps explain the similarities between the two. Thus, several National Governing Bodies in the U.S. have adopted ADM frameworks that closely resemble LTAD in both structure and terminology.

Comparison of LTDM and ADM

LTDM and ADM are long-term athlete development frameworks that were designed to guide athletes through developmentally appropriate stages of sport participation and performance. LTDM originated in Canada (Bayli et al., 2013; Sport for Life, 2016, 2019) while the ADM was developed in the United States (Martel, 2015; USOPC, n.d.). The LTDM places a strong emphasis on physical literacy and lifelong engagement. The model is structured across seven stages: 1) Active Start, 2) FUNdamentals, 3) Learn to Train, 4) Train to Train, 5) Train to Compete, 6) Train to Win, and 7) Active for Life and two preliminary stages: 1) Awareness and 2) First Contact. In contrast, the ADM outlines five key stages: 1) Discover, Learn, and Play; 2) Develop and Challenge; 3) Train and Compete; 4) A: Excel for High Performance or 4)

B: Participate and Succeed; and finally, 5) Thrive and Mentor. While fewer in number, the ADM stages also prioritize foundational skills and participation before competition. Both long-term models are very similar in terms of purpose, structure, and design. Both models incorporate guidelines for athletes with disabilities.

Although LTDM and ADM share several core principles such as developmentally appropriate training and the importance of quality coaching, their implementation approaches are different. The LTDM is nationally coordinated in Canada and consistently applied across school systems, community programs, and high-performance sport. On the other hand, the ADM's implementation is decentralized, with each NGB responsible for tailoring the model to fit the unique developmental needs of their respective sport. As a result, application varies significantly. Some NGBs adopt the ADM stages as outlined by the USOPC, while others substitute LTDM terminology or modify the structure entirely. Balyi and colleagues (2013) acknowledged the limitations of the LTDM model and recognized that it is not universally applicable. They agreed with critics who argue that athlete development varies across individuals and that a one-size-fits-all approach is unrealistic (Lifschutz, 2020). Moreover, they also admitted that the model currently lacks empirical research and will need to evolve as new scientific evidence becomes available. As the model evolves, new adjustments will be necessary to improve the framework (Balyi et al., 2013). However, the LTDM framework is still recognized as a foundational guide for athlete development (Lifschutz, 2020). Scholars have emphasized the need for more empirical evidence to explore the efficacy of both the American Development Model and the Long-Term Athlete Development frameworks (Ford et al., 2011; Holt,

2016; Lifschutz, 2020). The focus of this study was athlete development in the United States; therefore, the American Development Model (ADM) was employed as a guiding framework.

Identity Formation

The origin of disability, whether congenital or acquired, influences how individuals experience disability over time, particularly in relation to self-concept and identity development (Allan at al., 2018; Bogart, 2014; Kim & Park, 2024; Smart, 2008).

Self-Concept and Athlete Identity

Self-concept can be described as "a multidimensional structure of identity that includes self-esteem, group identity, and self-efficacy" (Bogart, 2014, p. 108). Similarly, Weiss and Bebko (2008) stated "self-concept is the subjective self-perception and affective evaluation of our traits, which includes the beliefs, feelings, and intentions that a person holds in regard to the self" (p. 1).

Ferro and Boyle (2013) further explained that "self-concept is a psychological construct formed through interpersonal experiences in social contexts and influenced by genetic endowment and the expectations and judgments of significant others (i.e., parents, siblings, peers)" (p. 839). For individuals with disabilities, this process often includes an additional layer of integrating their disability into one's broader sense of self. For example, Miyahara and Piek (2006) reported that youth with physical disabilities tend to demonstrate lower self-concept than their non-disabled peers. Multiple factors can contribute to enhancing self-concept among individuals with physical disabilities. For example, participation in adaptive sports programs can be beneficial for both individuals

with congenital and acquired disabilities. Lundberg et al. (2011) investigated adaptive sports programs and emphasized that individuals with disabilities reported feeling a sense of equality when participating in sports alongside their able-bodied peers, which in turn had a positive impact on their self-concept. One participant illustrated this impact by stating:

> Just being able to find something that I can do well and that I can do with other people on an athletic level has made a huge difference for me. When I am skiing with able-bodied people, I'm their equal. (Lundberg et al., 2011, p. 214)

The structured environment of competitive sport provides athletes with an opportunity to regain control over their bodies and develop new physical competencies (Pack et al., 2017). The process of regaining control over one's body and developing new skills in sports is often interconnected with the formation or redefinition of one's athletic identity (Perrier et al., 2014).

Hu and colleagues (2021) defined athletic identity as "a degree with which an individual identifies with the athletic role" (p. 2). Similarly, Rougeau and colleagues (2025) described identity development as "the process through which individuals form a distinct sense of self, exploring and integrating various roles, goals, values, and beliefs" (p. 1). A few studies have examined how athletes with physical disabilities construct their athletic identity, especially in relation to whether the disability is acquired or congenital (Rougeau et al., 2025). It is evident that sport can have positive influence for identity reconstruction, where athletes shift from being viewed through a lens of disability or loss

to being recognized for their performance (Kampman & Hefferon, 2020; Pack et al., 2017; Perrier et al., 2014).

Pack and colleagues (2017) explored identity development among Paralympic swimmers with congenital disabilities. After conducting in-depth interviews, the researchers found that none of the participants self-identified as “disabled”; rather, they emphasized their identities as athletes first and foremost. Specifically, this change in self-perception was often tied to personal achievement and athletic performance. As one participant stated: "because I’ve achieved in swimming, that opened other doors, because I was known as a swimmer and not someone that needed lots of adaptations because of my disability” (Pack et al., p. 2068). This quote shows how sport participation can redefine social perceptions. The study also challenges prevailing assumptions about congenital versus acquired disabilities, noting that “the notion that living with congenital disability is easier as opposed to living with acquired disability is a myth” (p. 2066).

Another study by Rougeau et al. (2025) investigated the relationship between athletic identity and the origin of disability among wheelchair basketball players. Specifically, the authors aimed to determine whether differences exist in how athletes with congenital versus acquired disabilities perceive their athletic selves. They hypothesized “that athletes with acquired disabilities may experience a weaker athletic identity due to the transition and grieving of their “non-disabled self” to their “disabled self”” (p. 4). This assumption was grounded in the idea that individuals who acquire a disability later in life must go through a psychological adjustment process that could challenge their sense of identity as athletes. However, the findings did not support this

hypothesis. In contrast, the results indicated that athletic identity did not significantly differ between athletes with congenital and acquired impairments. Interestingly, the study found that athletic identity tended to decrease with both age and the number of years lived with an acquired disability. The authors emphasized that more research is needed in this area.

It was concluded that "individuals with a stronger self-concept of athletic identity are more likely to perceive the consequences of an injury as having a greater negative impact on their athletic performance compared to those with weaker athletic identity" (Rougeau et al., 2025, p. 2). In other words, athletes with a stronger sense of athletic identity tend to perceive injuries as more disruptive to their performance than those who do not identify as strongly as an athlete.

Several studies explored athlete identity toward retirement after competing in parasport. As Roberts et al. (2023) noted that retirement from elite sport "can be a particularly challenging time for an athlete" (p. 630). The authors explained various ways of retirement such as "from sport either through their choice (i.e., voluntary) or force (i.e., career ending injury) to retire" (Roberts et al., 2023, p. 630). For para-athletes, the retirement process can be further complicated by differences in impairment origin and identity development.

Conversely, Guerrero and Martin (2018) discussed athletic identity of Paralympic athletes with a focus on comparing identity of athletes with congenital and acquired disabilities. The authors proposed that "congenital disability does not make someone immune from disability-related identity challenges" (p. 391). Specifically, children who

are born with congenital disabilities are frequently perceived as they face fewer challenges related to identity adjustment compared to individuals who acquire a disability later in life. One common reason is that individuals with congenital disabilities have lived with their condition since birth and never experienced an able-bodied life or experienced the abrupt psychological trauma that resulted in permanent disability (typically associated with an acquired disability). However, the authors emphasize that this assumption overlooks the complex developmental and psychosocial challenges that can still exist (Guerrero & Martin, 2018). Specifically, they note that as children with disabilities grow older and their social networks expand, they "become much more aware of how their disability differentiates them from nondisabled children" (p. 391). They may also begin to recognize how their physical impairment influences their physical abilities and performance in sport. In parallel, they may experience the impact of social barriers, such as teasing, or environmental obstacles, and inaccessible spaces, which can affect their quality of life. As a result, it can be suggested that athletes with either congenital or acquired disabilities face unique and distinct challenges associated with the development of their athletic identity.

Disability Identity

Age and origin of disability can have a potential impact on a person's identity development (Gilson & DePoy, 2004; Rapley, 2004). Pate (2012) emphasized that "disability itself is considered an identity" (p. 82) and noted that this identity may be shaped through both individual self-perception and the influence of others. Forber-Pratt et al. (2017) added that "disability can occur at any point in one's life span" (p. 199) which

posits several difficulties for the researchers to develop a unified model of disability identity development. Individuals born with a disability (congenital) often experience socialization and identity formation from an early age. In contrast, individuals who acquire a disability later in life have to reconstruct their identity. As Allen et al. (2018) note, the timing of disability is acquired and also contributes to the development of an identity. Several scholars explained that when a person acquires a disability, it usually leads them to reflect deeply on their life, which can result in changes in how they see themselves (Charmaz, 1995; Frank, 1993).

Dunn and Burcaw (2013) emphasized that one of the most common factors in "the formation of disability identity is the importance of community, where people with disabilities are actively engaged with their peers due to common experience" (p. 149). Building on this view, a sense of shared experience is also discussed in adaptive sports literature as athletes often find community and sense of identity following traumatic experiences. For example, Lape and colleagues (2018) explored perceptions of athletes with disabilities in adaptive sports programs and found a sense of community "enriched, inspired, and facilitated participation" (p. 513). Moreover, the authors mentioned that participants' disability identity shifted toward athletic identity as they started seeing themselves as adaptive athletes (Lape et al., 2018).

Lundberg et al. (2011) conducted a similar study focused on meanings and outcomes for adaptive athletes who participated in adaptive sports programs. The authors stated that prior to joining the program, individuals with disabilities "felt stigmatized" and "stereotyped" (p. 221); however, after participating in the program, the authors

reported that participants valued social interaction with their peers which led to acceptance of their disability identity and the feeling of freedom.

Previous literature discussed various ways on how individuals adapt to disability (Livneh & Martz, 2012); however, most of the frameworks were largely developed to explain the experiences of those with acquired disabilities and have rarely been applied to individuals with congenital conditions (Bogart, 2014; Devins et al., 1983; Wright, 1983). As Bogart (2014) explained, "many models are based on the assumption that people with disabilities grieve over a loss of functioning, but people with congenital disabilities have not experienced a functional loss" (p. 107). Therefore, this distinction is particularly relevant in the context of athlete identity development, as the psychological trajectories and sport development pathways may differ substantially between athletes with congenital and acquired disabilities. For instance, athletes with congenital disabilities (CD) often form their self-concept in parallel with their engagement in sports, while athletes with acquired disabilities (AD) may experience a more complex transition. In particular as they reconcile a previously held able-bodied identity with a new reality and learn how to adopt. Such contrasts in identity development can also affect psychological outcomes.

Post-Traumatic Growth

Beyond identity, the concept of post-traumatic growth provides a deeper perspective on how athletes rebuild self-concept and find renewed meaning through participation and competition in adaptive sports. Post-traumatic growth is more commonly associated with acquired disabilities (Hammer, 2018). Specifically, Tedeschi

and Calhoun (2004) defined post-traumatic growth (PTG) as “the experience of positive change that occurs as a result of the struggle with highly challenging life crises” (p. 1). Further expanding on this statement, Henson et al. (2021) elaborated “that growth is not a result of the event itself, but rather a result of the struggle to deal with it. The types of changes that may occur as a result of the struggle to cope with major life crises” (p. 1). Similarly, Chen and colleagues (2020) described PTG as “positive psychological changes which are experienced as a result of the struggle with the highly stressful life circumstances” (p. 1). Additionally, Hammer and colleagues (2019) emphasized that “adjusting to a disability can be an extremely arduous and long-term process” (p. 692). In support of this statement, Joseph and Linley (2008) mentioned that post-traumatic growth entails an ongoing developmental process through which individuals reconstruct meaning and find renewed purpose after traumatic events. Allan et al. (2018) also noted that athletes with acquired disabilities often “embraced change” (p. 175) when competing in parasport. As the authors explained, following their injury, “participants sought to discover themselves and the world around them in their ‘new’ lives post-injury" (p. 175).

Additionally, Kampman and Hefferon (2020) explained that PTG “is positioned as both a process and outcome, with differing perspectives regarding what types of changes these may be” (p. 68). Similarly, Jayawickreme et al. (2021) noted the growing recognition of post traumatic growth in the scholarly literature and illustrated the concept using the famous mantra “what doesn’t kill you makes you stronger”. The authors further elaborated that this phrase “resonates with many people and ties into a compelling

cultural narrative proclaiming that adversity can be a source of strength and opportunity for post-traumatic growth" (p. 145).

Multiple studies have explored how involvement in sport can facilitate post-traumatic growth (Kampman & Hefferon, 2020; Lundberg et al., 2011). For example, participation in organized adaptive sports has been shown to promote resilience and provide a sense of purpose and achievement (Bulut et al., 2024; Lape, 2018; Lundberg et al., 2011), factors that are particularly important for individuals adjusting to a newly acquired disability (Hammer et al., 2019). Evidence of post traumatic growth is also well-documented among other populations (Mark et al., 2018). In particular, PTG has also been observed among military and ex-military personnel who acquired disabilities during combat. For example, Mark et al. (2018) identified patterns of PTG and resilience among injured military veterans which reflect similar themes to those observed in adaptive sports. A few studies address post traumatic growth in relation to the Paralympic athletes.

For example, Day (2013) explored the experiences of Paralympic athletes with acquired disabilities. In particular, the author focused on how involvement in sport contributed to post-traumatic growth. Participants of the study acquired their disabilities through various scenarios such as spinal cord injuries resulting from accidents, single-leg amputations due to trauma, impairments caused by human error, and double-leg amputations sustained during military combat. Importantly, Day (2013) noted that none of the athletes had engaged in competitive sport prior to acquiring their disability which suggests that their athletic identity emerged post-injury as part of their adaptation process. The study identified three core themes that characterized participants'

experiences and were closely linked to post traumatic growth: (1) recognizing possibility by acknowledging limitations which involved development an understanding of one's physical condition while simultaneously identifying new capabilities; (2) responsibility for choice and consequences which referred to how sport offered opportunities to reevaluate their decisions after experiencing positive changes. As Day (2013) stated "participants described that trauma often prompted them to reflect on the aspects of their lives that were deemed to be important or meaningful. While initially these aspects were often perceived to be lost, participation in sport allowed them to recognize that these could be re-established" (p. 2069); and (3) re-establishing and enhancing meaning which captured how sports enabled participants to reconstruct purpose and identity.

Another study conducted by Le Toquin et al. (2022), explored whether the origin of visual impairment (congenital or acquired) affects performance in para swimming and para-athletics. The authors analyzed a dataset of over 20,000 event results from IPC competitions between 2009 and 2019. The researchers hypothesized that athletes with acquired impairments might outperform athletes with congenital impairments due to advantages in early motor skill acquisition through visual learning (Le Toquin et al., 2022). Surprisingly, the findings showed no significant differences in performance level between athletes with congenital impairments and athletes with acquired impairments in either sport, across most classes and events. However, a key distinction emerged in the age-performance relationship. In para swimming, athletes with congenital impairments reached their peak performance at younger ages than those with acquired impairments for both males and females. Le Toquin and colleagues (2022) concluded that while the

impairment origin may not determine peak performance level, it may influence the timing and progression of athlete development, particularly in sports where early motor learning and technical skill acquisition are crucial.

Youth and Collegiate Pathways in Adaptive Sport

Adaptive sports programs provide opportunities for individuals with disabilities including congenital and acquired to engage in sport and recreation (Allan et al., 2018; Tabaie et al., 2022; Winnick & Porretta, 2022). The programs vary in size and scope. Many adaptive sports programs serve individuals across generations, others are tailored to specific populations such as youth, veterans, or individuals with particular types of impairments. Participation in adaptive sports programs is associated with numerous physical health benefits (Feitosa et al., 2017; Lape, 2018; Lankhorst et al., 2021; Moran et al., 2017). For instance, youth athletes involved in adaptive sports show improvements in aerobic fitness, agility, muscle strength, and overall functional mobility (Tabaie et al., 2022). Feitosa et al. (2017) conducted a study to examine the impact of adaptive sports on children with cerebral palsy. Results showed that participation in adaptive sports for one year led to significant enhancements in mobility, upper extremity function, and global functioning (Feitosa et al., 2017)

Allan and colleagues conducted a narrative inquiry to explore para-athletes' experiences in parasport. In their findings, the authors noted that young athletes with congenital disabilities, as well as those who acquired their disability at a young age (between 12–14), often described their earliest experiences in adaptive sport through what the authors termed "a relational narrative". As they explained, a relational narrative

refers to when “a personal satisfaction is not dependent on the fulfillment of one's own needs or sense of self; rather, this narrative is centered on interpersonal relations and the need to satisfy other people” (p. 173). One participant said:

> When I was 12 the doctor said I'd never play sports again … So, from the age of 12 to the age of 20 there was no sport at all. And you know I didn't even want to look at somebody with a disability because people were portrayed as, they weren't, people with disabilities back then weren't in the media or you didn't see any Paralympic sports or anything like that, so nobody really knew (Allan et al., 2018; p. 173).

The authors suggested that early engagement in adaptive sport for youth particularly for those with congenital or early acquired disabilities is primarily influenced by social relationships, even if it is not yet focused on competitive or elite athletic performance (Allan et al., 2018).

Intercollegiate Adaptive Sports

Numerous research studies have explored the collegiate sport experience for able-bodied athletes such as identity (Melendez, 2009; Steele et al., 2020), performance (Nichols et al., 2019), motivation (Love & Rufer, 2021; Stoa et al., 2020), academics (McArdle et al., 2013; Scott et al., 2008), and psychosocial development (Howard-Hamilton & Sina, 2001). However, the experiences of para-athletes in collegiate settings remain significantly understudied (McCarty et al., 2023; Whaley, 2024).

The National Collegiate Athletic Association (NCAA) represents an important step in the athlete development pipeline in the United States. According to the USOPC

(n.d.) official website on collegiate athletics resources, student-athletes with congenital and acquired disabilities currently compete across all levels of collegiate sport, from NCAA Division I to Division III institutions. In 2021, the United States Olympic and Paralympic Committee (USOPC) collaborated with the NCAA to launch the Para-College Inclusion Project (USOPC, n.d.). The goal of the project was to encourage colleges and universities that offer adaptive sports to work together to increase awareness and understanding of Paralympic sports. Following that collaboration, more scholarly literature began to address collegiate adaptive athletics (Whaley, 2024).

In recent years, there has been notable growth in collegiate programming specifically designed to support adaptive athletes (Campanile et al., 2022; McCarty et al., 2023). However, adaptive collegiate programs vary in structure and support across campuses. In particular, a small number of studies have begun to examine the structures of existing intercollegiate adaptive sport programs (Hill, 2020; McCarty et al., 2023; Townsend et al., 2025) and the perceptions of campus administrators regarding their implementation (Whaley et al., 2023). For instance, McCarty and colleagues (2023) examined intercollegiate adaptive sports programs in the United States and reported that, as of fall 2020, only 16 such programs existed nationwide. The study was focused specifically on competitive adaptive sports structures that are parallel to the NCAA model. The authors noted the absence of a centralized national governing body for adaptive sports at the collegiate level. In contrast, the NCAA sponsors 24 men's and women's sports and serves approximately 500,000 student-athletes across roughly 1,100

member institutions (Siegfried et al., 2021; Whaley, 2024). Therefore, inequalities between able-bodied student athletes and student-athletes with disabilities are evident.

In a recent study, Whaley (2024) noted that the United States does not currently have a centralized governing body for adaptive sports at the collegiate level equivalent to the NCAA. Hill (2020) defined intercollegiate adaptive athletics as "competition where student-athletes with disabilities compete in team and individual adaptive sports against student-athletes with disabilities from other postsecondary institutions" (pp. 4-5). Historically, the first intercollegiate adaptive sports team was established in 1970 at the University of Illinois and focused exclusively on one sport - wheelchair basketball (Siegfried et al., 2021). Since then, inclusion of student-athletes with disabilities in higher education has increased; however, the growth of intercollegiate adaptive sport has remained uneven and largely dependent on institutional initiative (McCarty et al., 2023).

Fultz and colleagues (2024) explored adaptive sports opportunities at NCAA Division I universities through a document analysis approach. The researchers examined 358 institutions in the United States to assess how and where adaptive sports programs were represented. Findings from the study revealed that adaptive sport opportunities were not widely promoted across Division I institutions. Only 20.4% of universities (73 out of 358) provided any online information regarding adaptive sports whether it is recreational, club-level, or intercollegiate. Furthermore, 3.9% (11 institutions) specifically referenced intercollegiate adaptive sport programs on their websites. Public institutions were more likely to mention adaptive sports (28.3%) than private ones (5%). Regionally, the Northeast had the lowest visibility, with only 6% of schools in that area reporting

adaptive sport offerings. Adaptive recreation was the most frequently mentioned activity (10.2%), and the second mentioned was wheelchair basketball (7.4%).

Importantly, many of the adaptive sport opportunities that did exist were facilitated through partnerships with community-based organizations, rather than through internal athletic department initiatives (Fultz et al., 2024). Programs were often managed through student services, campus recreation, or disability support offices. Most of the programs were not integrated into intercollegiate athletics. The authors argue for greater institutional investment and clearer promotion strategies to increase visibility and encourage student involvement that, in turn, can help to promote social inclusion (Fultz et al., 2024).

Moreover, empirical research focusing specifically on the lived experiences of adaptive student-athletes remains limited (Whaley, 2024). As a result, there is a lack of understanding of how collegiate sport participation may support or hinder athlete development for individuals with disabilities.

Barriers to Participation and Development

Barriers to Participation

Barriers to participation and competition in adaptive sports remain at all levels (Ballas et al., 2022; Brittain, 2004, 2016; Jaarsma et al., 2014; Kim et al., 2025; McCarty, 2022). Previous literature mentioned most common challenges athletes with disabilities face include a lack of accessible facilities and trained staff, limited awareness of available programs, and the high costs associated with specialized equipment and travel (Iverson et al., 2021; Lape, 2018; McLoughlin et al., 2017; Orr et al., 2020; Shapiro et al., 2020). For

young athletes with disabilities, parents are often responsible for these expenses which can restrict access for many families (Coates & Howe, 2023). Moran et al. (2017) suggested that there are four main barriers that hinder individuals with disability to participate in sport and recreation: "(1) lack of programs and opportunities, (2) fear on the part of the participant, parents, as well as the instructors; (3) lack of training and knowledge on the part of the instructors; and (4) concerns about liability" (p. 19). The authors noted that there may be other challenges associated with adaptive participation; however, these four barriers are controllable (Moran et al., 2017).

Kim and colleagues (2025) conducted an ethnographic study to identify barriers and facilitators associated with recreational adaptive sport participation for individuals with disabilities on college campuses. The authors identified four major themes that promote participation: (1) enjoyment of recreation; (2) health benefits; (3) peer interaction; (4) program/staff. At the same time, participants discussed several barriers including medical, scheduling constraints, personal commitments, motivation, transportation, and equipment (Kim et al., 2025). Importantly, recreational adaptive sport is often one of the initial entry points for athletes with disabilities since the programs offer a low-pressure environment to explore their physical capabilities and build social confidence (McLoughlin et al., 2017). As participants become more engaged, their level of commitment may evolve, leading some individuals to pursue competitive opportunities. In this way, recreational programs can be seen as a foundational stage in the process of athlete development.

Moreover, McLoughlin and colleagues (2017) investigated barriers to adaptive sports among athletes with physical disabilities who compete in various competitions such as the Paralympic Games, Parapan Games, and NCAA Division I. The authors reported six themes and several subthemes that reflect the complex experiences of para-athletes: (1) “early bird gets the worm; (2) negotiating barriers; (3) lean on me: support networks; (4) empowerment and advocacy; (5) physical and mental motivations; (6) staying the course: achieving goals” (p. 429). “Early bird gets the worm” emphasizes the importance of early exposure to sport. The authors explained that "participants began engaging in recreational activities prior to becoming competitive athletes… how they were recruited by coaches at a young age and described their experiences participating in sports with able-bodied peers" (McLoughlin et al., 2017, p. 429). The second theme, “negotiating barriers”, focuses on challenges athletes face such as overuse injuries, cost, geographic location, time management, and lack of awareness about opportunities. The third theme, “lean on me: support networks”, underscores the role of interpersonal support. Athletes described the value of their support systems, including family, peers, and mentors in facilitating their sport participation. The fourth theme, “empowerment and advocacy”, includes subthemes like the coach’s impact, paying it forward, and the perks of participation. One participant mentioned: "I have a responsibility to younger people with disabilities especially in the areas where I grew up where there wasn’t a lot of exposure to adapted athletics" (p. 434). Elaborating on perks of participation, the authors explained that participants "gained access to educational opportunities that participants might not otherwise have received" (p. 434). The fifth theme, “physical and mental

motivations", highlights personal drivers for participation which includes being active and enjoying sport, as well as a love of competition. The final theme, "staying the course: achieving goals", emphasizes the importance of goal-setting and long-term development. Athletes described how goal orientation and training routines contributed to perseverance and success. Therefore, recognizing and addressing the barriers to adaptive sport is essential for understanding the athlete development pathways in parasport.

Furthermore, Wu and Williams (2001) examined the relationship between pre- and post-injury sport participation among individuals with spinal cord injuries. The authors compared the biographical and sport participation profiles of those athletes who were active and those who were inactive before acquiring a disability. The results showed that athletes who engaged in sports before acquiring their impairment were more likely to pursue elite-level athletic training afterward, in contrast to individuals who had no prior involvement in sports before their injury (Wu & Williams, 2001).

Gaps and Shortcomings

Although the United States has made progress in supporting athletes with disabilities, the Paralympic pipeline still faces several challenges. One of the most significant shortcomings in the U.S. Paralympic pipeline is the limited education and awareness surrounding the Paralympic Movement and adaptive sports (Pate et al., 2023; Whaley et al., 2023). Despite the increasing visibility of Paralympic athletes during major international events, academic programs in sport management, physical education, and coaching education rarely include discussions on disability, adaptive sports, or the structure of the Paralympic system (Pate et al., 2023; Pitts et al., 2022). As a result,

students graduate without a foundational understanding of how Paralympic sport operates. Importantly, many of those students will become future sport administrators, coaches, leaders, or policymakers; however, lack of exposure contributes to a broader societal unawareness of adaptive sports. In essence, if disability sport is absent from educational curricula, then public knowledge about the Paralympic Movement will continue to remain at current levels without advancements.

Another limitation is associated with access to different resources such as adaptive equipment and training facilities (Lape et al., 2018). As mentioned earlier, adaptive sports programs vary greatly across the United States (Move United, n.d.). Athletes in urban centers or near established adaptive sport programs are more likely to receive support or necessary resources, while those in rural or under-resourced communities often lack opportunities to participate. Without consistent investment at the community and regional levels, athletes face substantial barriers to progressing through the pipeline regardless of their talent or commitment. Similarly, Ryan et al. (2014) acknowledged the efforts toward inclusivity at schools and improved access to community-based programs as an entry level to competitive sports. However, the authors also stated broader institutional support remains inconsistent. Furthermore, school-based physical education opportunities, while mandated under the Individuals with Disabilities Education Act and Section 504 of the Rehabilitation Act, are not always effectively implemented (Ryan et al., 2014).

Additionally, recent studies have identified significant gaps in the development pathways for adaptive sports at the collegiate level. Cottingham et al. (2025) stated that

"collegiate adaptive sports programs represent the most direct pipeline to the Paralympic-level development for wheelchair tennis, wheelchair basketball, and wheelchair track" (p. 200). While the NCAA plays an important role in Olympic athlete development, it does not extend the same institutional support to athletes with disabilities (Larkin et al., 2014; McCarty et al., 2023). It further creates a critical gap in the Paralympic pipeline, particularly at the collegiate level. According to Townsend and colleagues (2025), adaptive intercollegiate athletics programs function parallel to traditional NCAA sports programs but are not sanctioned or supported by the NCAA. As a result, only a small number of institutions have formally structured adaptive athletics programs, compared to over 1,100 institutions offering NCAA-sanctioned sports. As McCarty et al. (2023) pointed out, there are only 16 intercollegiate adapted sport programs that exist nationwide. Such programs often operate without consistent housing in athletic departments, and instead rely on support from campus recreation, academic units, or disability services (Townsend et al., 2025). Additionally, even when housed within athletics departments, programs must still meet external standards (e.g., NWBA rules) without receiving the full benefits typically associated with NCAA sports.

Whaley and colleagues (2023) found that many NCAA Division III athletic administrators recognize the importance of adaptive sport but cite limited funding as a key barrier to implementation. Most athletic departments do not have dedicated budget lines for adaptive sport which makes it difficult to support or expand programming. In many cases, the lack of financial commitment reflects broader institutional challenges including lack of awareness and staffing constraints around disability inclusion in sport.

Limited availability of adaptive sport opportunities at the collegiate level have led some athletes with disabilities to compete alongside able-bodied athletes (Hersch, 2024). For example, McKenzie Coan, a six-time Paralympic medalist, pursued NCAA Division I (swimming) at Loyola University Maryland due to the lack of formalized adaptive sport options in college. A similar example is Ezra Frech, a para track and field athlete who recently became the first above-the-knee amputee to join a Division I team at the University of Southern California. Frech was determined to compete in the traditional system and earn points for his school. He emphasized that his goal was not only to compete but to prove that disability was not a limitation to high-level performance. French elaborated: "I can earn points, I can compete against a lot of these other schools, and show that, listen, just because I'm an amputee doesn't mean I'm unable to compete at a high level" (Hersch, 2024, para 55).

Overall, the lack of integration between adaptive athletics and NCAA-sanctioned sports highlights one of major gap in the Paralympic development system in the United States. While a small number of institutions have created adaptive sport programs, the absence of consistent funding and structural inclusion within collegiate athletics limits their reach and impact. As long as adaptive programs remain separate from mainstream athletic departments, para-athletes will continue to face unequal access to training and long-term development opportunities.

According to the USOPC Sport Advancement Impact Report (2021), a significant disparity exists between Olympic and Paralympic athletes in terms of collegiate sport participation. While 82% of Olympic Team USA medalists competed at the collegiate

level, only 50% of Paralympic Team USA medalists had similar opportunities. Furthermore, 171 colleges and universities were represented by Olympic athletes, compared to just 76 institutions for Paralympic athletes. As mentioned earlier, there is a persistent gap in access and support for para-athletes within the collegiate system. Limited representation of Paralympic athletes suggests that many colleges in the United States lack inclusive programs or recruitment practices which in turn, prevents a stronger establishment of the Paralympic pipeline.

Funding for disability sports remains a consistent issue across all levels of the Paralympic pipeline (Cottingham et al., 2025; Whaley et al., 2023). Whether athletes are entering adaptive sports through a local community program or advancing into collegiate or elite-level environments, access to financial support is essential. Similar to able-bodied sports, athletes with disabilities need resources to cover various expenses, including equipment, travel, coaching, competition fees, and disability-specific costs. As mentioned earlier, unlike national sport organizations in countries with centralized sport systems, the USOPC operates as a nonprofit and receives no direct federal funding (Cottingham et al., 2025). It simply means that Paralympic programs in the U.S. are relying on donations, corporate, and endowment funds to sustain operations. While this model offers some flexibility since the government does not dictate the rules, it also creates financial uncertainty which makes long-term planning difficult, particularly for organizations or athletes with limited access to sponsors.

Lastly, another issue that contributes to potential gaps in the U.S. Paralympic athlete pipeline is the concept known in the literature as the Paralympic paradox (Purdue

& Howe, 2012). This term is associated with tension and disability portrayal within the Paralympic movement. As Watson (2021) explains, Paralympic athletes are frequently portrayed in ways that emphasize their athletic achievements while sidelining the barriers and living realities of individuals with disabilities. In other words, while elite athletes with disabilities are celebrated for their sporting achievements, their lived experiences with disability are often minimized in media portrayals. As the emphasis is typically placed on performance and inspiration, portraying Paralympians as nearly indistinguishable from their Olympic counterparts. While this approach appears to have positive impact and promotes equality by integrating Paralympians into the "big picture", it can unintentionally distance them from the broader disability community. The core issue is that the Paralympic paradox can weaken the link between high-performance sport and community-based disability sport by portraying elite athletes as exceptional or somehow "different" from other people with disabilities. Scholars who focus on sociological aspects of sports noted that some Paralympians may not even identify as disabled (emphasizing the athletic identity) which further complicates how disability identity is represented and perceived (Berger, 2004; Huang & Brittain, 2006).

Chapter Summary

This chapter first explored the history and evolution of the Paralympic movement in the United States, highlighting key milestones, legal foundations, and the role of the Special Olympics in shaping the nationwide development of adaptive sport. The chapter then examined eligibility and Paralympic classification as factors influencing athlete development in parasport. Conceptual foundations of disability and impairment were

subsequently discussed through models of disability, followed by an introduction to athlete development frameworks, including the Long-Term Athlete Development (LTAD) model and the American Development Model (ADM), to situate pathways from sport introduction to elite performance. The chapter also addressed the complexities of identity formation, including athletic and disability identity, and explored the role of post-traumatic growth in para-athletes' experiences. Additionally, experiences of youth athletes with disabilities and collegiate programs for athletes with disabilities were reviewed. The chapter concluded with an overview of structural and systemic challenges within the U.S. Paralympic pipeline, including barriers to access, inequities in classification, and gaps in athlete development. The following chapter provides a thorough explanation of the methodology and methods used in this narrative case study.

CHAPTER THREE

METHODOLOGY

Due to the scarcity of research examining the developmental pathways of para-athletes in the United States, particularly leading up to the Paralympic Games, the purpose of this narrative case study was to explore the lived experiences of retired Team USA athletes who competed in one or more Summer Paralympic Games between 2012 and 2024. The study was guided by two research questions:

- How did retired para-athletes experience the developmental pathway toward the Paralympic Games?
- In what ways do these experiences differ based on whether disabilities are congenital or acquired?

This chapter first presents an overview of qualitative research, then it describes narrative case study design, and concludes with a detailed explanation of the methods of data collection, data analysis, as well as strategies used to ensure trustworthiness.

Methodological Commitments

This study utilized narrative case study methodology. Broadly, a methodology refers to the theoretical approach that guides how research is conducted (Carter & Little, 2007; Creswell & Báez, 2020; Emuze et al., 2016). It involves a critical examination of assumptions, guiding principles, and procedural steps associated with a research process (Schwandt, 2001). Similarly, O'Reilly and Kiyimba (2015) described methodology as a distinct "research approach grounded in a particular school of thought" (p. 4). Methodology informs both the structure and implementation of a study (Crotty, 2003).

Methodologies are inherently determined by the ontological and epistemological assumptions on which they are based (Carter & Little, 2007; Slevitch, 2011). Both assumptions are discussed later in the chapter.

Qualitative Research Design

Patton (2002) explained qualitative research design "can be used to discover, capture, present, and preserve the stories of organizations, programs, communities, and families" (p. 196) This study adopted a narrative case study design, which is a recognized approach within qualitative methodology (Brandell & Varkas, 2010). Qualitative studies focus on exploring lived experiences and understanding how individuals interpret their realities (Denzin & Lincoln, 2018; Fossey et al., 2006; Merriam, 2009; Merriam & Tisdell, 2016; Smith & Chudleigh, 2015). As Carter and Little (2007) explain, in qualitative research "the researcher relies on text data rather than numerical data, analyzes those data in their textual form rather than converting them to numbers for analysis, [and] aims to understand the meaning of human action" (p. 1316). Similarly, Denzin and Lincoln (2000) described qualitative research as "a situated activity that locates the observer in the world" (p. 3). The authors elaborated that qualitative research "consists of a set of interpretive, material practices that make the world visible" (Denzin & Lincoln, 2000, p. 3). Additionally, Creswell (2007) stated that qualitative inquiry represents a legitimate mode of social and human science exploration (p. 11). However, given the diverse philosophical foundations and disciplinary differences that inform qualitative methodology, the term itself remains difficult to define. (Merriam & Tisdell, 2016; Smythe & Giddings, 2007). Goertz and Mahoney (2012) agreed with the statement

and added that “a typical qualitative answer involves presenting a list of attributes or characteristics that constitute the concept” (p. 207).

Supporting this view, Aspers and Corte (2019), in a recent content analysis of qualitative research literature, concluded that universally accepted there is no universal definition. Rather than offering a single definition, most scholars describe qualitative research by outlining its key characteristics and articulating their perspectives. For instance, Creswell (2009) stated that qualitative research is “a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (p. 4). Additionally, qualitative methodologies emphasize the key role of the researcher, who functions as the main instrument for data collection and interpretation (Johnson & Christensen, 2017). Fossey et al. (2002) added qualitative research questions often focus on “1) language as a means to explore processes of communication and patterns of interaction within particular social groups; 2) description and interpretation of subjective meanings attributed to situations and actions; and 3) theory-building through discovering patterns and connections in qualitative data” (p. 723).

Interpretivist Paradigm

Fossey and colleagues (2002) described the term paradigm as “a system of ideas, or world view, used by a community of researchers to generate knowledge” (p. 718). Similarly, Guba (1990) defined paradigm as "a basic set of beliefs that guide action" (p. 17). In outlining research paradigms, Denzin and Lincoln (2018) noted that researcher’s paradigm is informed by interconnected assumptions about epistemology, ontology, and methodology. To understand the experiences of para-athletes in the Paralympic pipeline,

this narrative case study was grounded in the interpretivist paradigm. Turin et al. (2024) explained that researchers who adopt interpretivist paradigms "aim to interpret and construct knowledge based on the participants' perspectives and narratives" (p. 2). Similarly to constructivism, interpretivism acknowledges that knowledge is not discovered in a single truth but rather understood through human experience. Pervin and Mokhtar (2022) mentioned the primary focus of this paradigm “must be on trying to understand particular people and events in specific socio-historical circumstances” (p. 27).

Interpretivism and constructivism are closely related paradigms and are often discussed together due to their shared rejection of positivist assumptions (Creswell, 2007; Hammersley, 2013; Turin et al., 2024). Both paradigms recognize that researchers and participants contribute to the construction of knowledge (O’Reilly & Kiyimba, 2015). However, while these paradigms are similar, they are not identical (Grass, 2024). Constructivism tends to emphasize the co-construction of knowledge through interaction between individuals and their environments. In contrast, interpretivism is more focused on understanding and interpreting how individuals experience and make sense of the world around them (Donkoh & Mensah, 2023).

Turin and colleagues (2024) described in detail that “constructivism and interpretivism share the same ontology; they both believe that there are multiple realities that are socially constructed by individuals through their experiences and interactions” (p. 2). Although closely related, interpretivism and constructivism differ in their epistemological stance (Grass, 2024; Turin et al., 2024). As Turin et al. (2024) explained,

“interpretivism focuses on understanding how individuals experience and interpret their reality, while constructivism focuses on how individuals construct their own realities through interactions with others” (p. 2). In line with this view, Donkoh and Mensah (2023) emphasized that "knowledge is subject to values and other personal attributes which may not be applicable to participants in other places or situations" (p. 6).

Similarly, Hammersley (2013) situates interpretivism as a response to the limitations of positivism and explains that it “draw[s] upon our human capacity to understand fellow human beings ‘from the inside’… rather than solely from the outside in the way that we are forced to try to explain the behaviour of physical objects” (p. 26). Building on this, Pervin and Mokhtar (2022) emphasize that interpretivist paradigm “can identify in-depth life experiences. Through the analysis of the data, researchers can explore, explain, express and attempt to place themselves in the participant's vision or thinking pattern in order to reconstruct the text's intended meaning” (p. 424).

Furthermore, Pervin and Mokhtar (2022) stated a notable strength of the interpretivist paradigm is its ability to facilitate deeper contextual understanding. The authors mentioned that “interpretivist scholars can use their diverse viewpoints on phenomena to not just describe objects, people, or events, but also to deeply comprehend them in their socio-cultural contexts because they believe that they have shared belief systems in the society they are living in” (p. 422). The interpretivist paradigm has deep historical roots in hermeneutics which originally emerged as a method for interpreting and deciphering ancient texts (O’Reilly & Kiyimba, 2015; Pervin & Mokhtar, 2022, p. 27).

Alharahsheh and Pius (2020) emphasized that “it is highly important for researchers to understand the key underpinning ontological and epistemological assumptions, and to further understand how the given assumptions determine researchers’ selection of an appropriate methodology and methods” (p. 40). Furthermore, the authors noted that, in particular, the interpretivist paradigm “enables researchers to treat the context of the research and its situation as unique considering the given circumstances associated as well as participants involved” (Alharahsheh & Pius, 2020, p. 42). Furthermore, the interpretivist paradigm is “based on the premise that social reality is shaped by way of human experience and social backdrop” (Pervin & Mokhtar, 2022, p. 421).

Narrative Case Study

Brandell and Varkas (2010) described narrative case study as “a research instrument that is used for in-depth study…to understand stages or phases in processes and to investigate a phenomenon within its environment context (p. 376). Guided by this perspective, this study used narrative case study methodology to examine the stages of athlete development experienced by para-athletes as they progress through the U.S. Paralympic pipeline. Athlete development is not a linear process, particularly in parasport, where access to opportunities vary based on multiple factors including but not limited to the nature of impairment and geographical region (Patatas et al., 2021; 2022). As Brandell and Varkas (2010) further explained "fundamentally, the narrative case study provides entrée to information that might otherwise be inaccessible. It makes possible the capture of phenomena that might not be understood as readily through other means of

study" (p. 376). Therefore, the narrative case study approach is especially well-suited for exploring the complexity of para-athlete development, particularly how individuals experience and describe their transitions over time.

Narrative case study combines the traditions of case study and narrative inquiry. Kim (2016) discussed that researchers engaging in narrative inquiry "should think narratively, imagining a life space, living and telling as starting points for collecting field texts, balancing the commonplaces (temporality, sociality, and place), and investing ourselves in the inquiry" (p. 156). Narrative thinking refers to the process of organizing lived experience into story form. As Robinson and Hawpe (1986) describe, it is "a heuristic process that requires skill, judgment, and experience" (p. 111). Polkinghorne (2010) explains narrative thinking helps researchers to interpret connections between past events that contributed to a particular result, and then we use that understanding to plan future actions to achieve specific goals.

Narrative thinking involves three interrelated components: 1) the narrative schema, 2) the storyteller's existing knowledge and experience, and 3) a range of cognitive strategies (Kim, 2016; Robinson & Hawpe, 1986). The narrative schema functions as an internalized framework that organizes key pieces of information through causal connections. In essence, it provides a structure through which the storyteller frames a situation by responding to core questions such as: What occurred? Who was involved? Why did it happen? Answering these questions requires the storyteller to evaluate the available information, determine what is relevant, and integrate those elements into the narrative structure (Kim, 2016). This process is grounded in the second

element, the storyteller's accumulated knowledge and life experiences which shape how the narrative schema is applied. Finally, narrative construction depends on cognitive strategies such as selecting, comparing, inferring, sequencing, and refining past experiences. As a result, narrative thinking becomes an effective tool for interpreting past events and making them accessible to others (Kim, 2016).

According to Merriam (2009) a case study involves "an in-depth description and analysis of a bounded system" (p. 40). Accordingly, the researcher assumes researcher the primary role in facilitating and guiding the inquiry process (Yin, 2009). This dissertation adopted a single-case embedded design in the form of a narrative case study. Yin (2009) emphasizes that conducting a case study demands thorough examination of the selected case to reduce the risk of misrepresentation. The bounded case in this study was the Paralympic pipeline in the United States that can be defined as the national system that shapes the development of para-athletes from entry-level to elite performance. Within this case, one embedded unit of analysis was explored: retired para-athletes who progressed through this pipeline. The embedded case study approach supported an in-depth examination of athlete development in Summer Paralympic sports within one nation and focused on the lived experiences of retired para-athletes. Additionally, this study focused on exploring athlete development, with particular attention to how developmental pathways may differ based on the nature of impairment (i.e., whether athletes have congenital or acquired disabilities).

A narrative case study approach was selected to facilitate a deeper exploration of the personal and social dimensions of athlete development, especially as they relate to

key transitions within the U.S. Paralympic pipeline. This method is well-suited to answer research questions, which center on how para-athletes experience transitions within the Paralympic pipeline. Moreover, narrative case study allows participants to speak to both "what happened" and "what it meant", a crucial distinction for research focused on athlete transition within a national sport system. Given that the pathway to the Paralympic Games often takes many years or even decades, narrative case study design provides the depth and flexibility needed to capture the complexity of para-athletes' experiences.

Clandinin (2006) noted that "narrative inquirers studied the individual's experience in the world, an experience that was storied both in the living and telling and that could be studied by listening, observing, living alongside another, writing and interpreting texts (p. 46). In this study, para-athletes' narratives can provide insights into transitions within the Paralympic pipeline and reveal broader institutional gaps that exist between those stages.

Methods

The terms method and methodology differ across scholarly literature which leads to conceptual inconsistency (Carter & Little, 2007; O'Reilly & Kiyimba, 2015). In some cases, scholars use the two terms interchangeably. However, this usage is inaccurate (Harvey et al., 2023), as it obscures the important distinction between the procedures used to collect data (methods) and the broader philosophical and theoretical framework guiding those choices (methodology; Harvey et al., 2023; Schwandt, 2001). In other words, methods are step-by-step procedures employed to conduct the study (O'Reilly &

Kiyimba, 2015), whereas methodology refers to the broader conceptual framework that guides and informs the selection and use of those methods (Harvey et al., 2023).

The methods in this study included obtaining Institutional Review Board (IRB) approval; recruitment of participants through purposive and snowball sampling; semi-structured narrative interviews; two types of narrative data analysis; and implementation of multiple strategies to ensure trustworthiness and rigor of the study.

Data Collection

Data collection took place between July 2025 and November 2025. The primary method of data collection was narrative interviews, which are described in greater detail in the following subsection. Prior to each scheduled interview, participants were emailed an informed consent form (see Appendix D) and were asked to review the form in advance.

The interviews were conducted via Zoom platform. This approach was selected to accommodate participants' geographic dispersion across the United States and to reduce potential barriers to participation. In addition to accessibility, prior research suggests that virtual interviews may offer methodological benefits, including increased participant comfort and a more relaxed interview environment (Khan & MacEachen, 2022). All interviews were audio-recorded with participants' consent and securely stored on the University of Tennessee's Microsoft system. Transcriptions were completed manually in a Microsoft Word document. All data were de-identified and stored on password-protected computers, with access limited to the research team to ensure confidentiality and data security.

Transcription represents an interpretive activity that contributes to the researcher's immersion in the data and understanding of participant meaning (Riessman, 2008). After completing the initial transcripts, the primary researcher re-listened to each interview recording to verify accuracy and make revisions. Throughout the transcription process, all identifying information was removed. Pseudonyms were randomly assigned to each participant to protect confidentiality (Patton, 2015).

In addition to the interviews, document analysis served as a secondary data collection method. This analysis included publicly available materials distributed by the United States Olympic and Paralympic Committee related to involvement and athlete development in Summer Paralympic sports in the U.S. These documents provided contextual insight into how athlete development is formally conceptualized and communicated in the United States.

Narrative Interviews

Semi-structured narrative interviews were conducted to explore how para-athletes experience developmental transitions within the U.S. Paralympic pipeline. A semi-structured interview guide was developed to facilitate the narrative interviews (Clandinin & Johnson, 2017; Kim, 2016). Specifically, the semi-structured format is intentionally flexible and includes a set of predetermined questions. However, participants can still guide the conversation based on the relevance of their lived experiences (Merriam & Tisdell, 2016). Unlike the structured interview format, which requires the researcher to follow a fixed set of questions (Elhami & Khoshnevisan, 2022), the semi-structured approach allows the researcher to maintain a guiding framework while also adapting

questions in response to participants' narratives (Peters & Halcomb, 2015). Semi-structured interviews enable a more in-depth and responsive exploration of participants' experiences (Adams, 2015).

Anderson and Kirkpatrick (2016) explained that "narrative interviews are a way of collecting people's stories about their experiences" (p. 631). This method is rooted in the belief that people make sense of their lives through storytelling. Anderson and Kirkpatrick (2016) elaborated that "the events are usually organized along a timeline with a beginning, middle and an end. There is often a point or a moral to the story that provides value or meaning to the events that have been described" (p. 632). According to Kim (2016), narrative interviews typically unfold in two stages. The first stage is "the narration phase" which involves asking open-ended questions that allow participants to reflect on and share their experiences in their own words. Kim (2016) emphasized that this stage "is not interrupted by questions but can be encouraged by nonverbal expressions of interest and attention" (p. 18). The second stage is "the conversation phase" which involves the researcher asking clarifying questions and building upon earlier responses to encourage further elaboration. As Kim (2016) further explained, during this phase researchers may "introduce additional topics related to our theoretical interests so that we can get more detail than the narrator's original narrations may have provided" (p. 18).

Population

The population for this narrative case study included retired U.S. Paralympic athletes who competed in Summer Paralympic sports between 2012 and 2024. Para-

athletes were selected because of their direct experiences within the U.S. Paralympic pipeline.

Participant Description

This study included retired Paralympic athletes in the United States. Purposeful criterion sampling guided the selection process, as participants must meet specific, pre-established criteria that are directly aligned with the research purpose (Patton, 2014). Moreover, purposeful sampling prioritizes detailed exploration of individual, context-specific experiences over broadly generalizable findings (Patton, 2002, 2014). A snowball sampling approach was also employed (Creswell, 2007). After each interview, participants were encouraged to refer to others and to promote word-of-mouth referrals to those who meet the study's inclusion criteria.

The criterion for para-athlete participants in this study are: individuals must be 18 years of age or older; must have previously competed for Team USA in at least one of the past four Summer Paralympic Games (London 2012, Rio de Janeiro 2016, Tokyo 2020, or Paris 2024); must have retired from elite competition which means they are currently no longer competing at the elite level; and must self-identify as having either a congenital or acquired physical disability. The timeframe was selected to include the past four Summer Paralympic Games, as the 2012 London Games significantly increased global visibility for the Paralympic movement. Including participants who competed prior to this period could introduce inconsistencies, as their experiences would reflect a fundamentally different developmental pathway. It is important to note that during the selected timeframe, several changes occurred in the Paralympic classification system;

however, this study did not seek to systematically evaluate these changes. Instead, the changes were acknowledged as part of the broader environment in which para-athletes navigated the Paralympic pipeline.

Participants were identified and recruited through a combination of publicly available databases, professional networks, and social media. The primary researcher reviewed official Team USA websites to identify athletes who represented Team USA at the Summer Paralympic Games between 2012 and 2024. In addition, an official request was submitted to Move United, an affiliate of the U.S. Olympic and Paralympic Committee, to assist with recruitment and to distribute study information to eligible para-athletes. Social media platforms, particularly Instagram, was also be used to locate potential participants by searching terms such as “Paralympian”, “adaptive sport”, “Paralympic athlete”, and “PLY”. Before making contact, the primary researcher verified that every individual meets the study’s inclusion criteria by reviewing publicly available information through official Team USA resources. Once verified, the researcher contacted eligible participants via direct message or email (if available) with a brief description of the study.

It is important to acknowledge that recruitment through official channels and social media may shape the collected stories, as not all Paralympic athletes maintain public accounts or choose to include descriptions as Paralympians. As a result, some individuals may not have been reached through this recruitment strategy, particularly those who keep a lower public profile or prefer to disengage from online platforms. To address this, purposive and snowball sampling also extended outside of official outlets, as

participants were invited to share the study flyer with their peers. Therefore, it may potentially increase the likelihood of reaching individuals who are not publicly involved on social media, but whose perspectives are equally important to understanding the Paralympic pipeline. In addition, the researcher's professional network and those of affiliated faculty members were used to support recruitment.

Para-athletes who expressed interest in participating in a study were scheduled for an individual interview. Verbal informed consent was obtained at the beginning of each interview. Participants took part in a singular, semi-structured interview conducted via Zoom, which lasted between 55 and 103 minutes, with an average length of 70.3 minutes. Interview questions derived from previous literature on athlete development and explored topics such as initial involvement in sport, key developmental milestones, organizational and institutional support, and barriers to elite level progression.

The final sample of participants consisted of 17 retired U.S. Paralympic athletes. The sample included nine men and eight women. Among 17 participants, ten participants had congenital disabilities (CD) and seven had acquired disabilities (AD). Participants represented 13 states across the United States and had competed in eight Summer Paralympic sports: para track and field, wheelchair basketball, para swimming, wheelchair rugby, para judo, para cycling, fencing, and Paralympic soccer. See Table 11 for full participant demographics. Current para-athletes were not included in the study, as recruiting individuals who are actively competing would likely require additional institutional and organizational approvals, which were not feasible within the timeline of this dissertation.

Data Analysis

The primary source of data was the semi-structured narrative interviews. Each interview was manually transcribed verbatim and analyzed using two types of narrative analyses: Labovian structural narrative analysis (Labov & Waletzky, 1997) and narrative thematic analysis (Riessman, 1993, 2008). Labovian structural analysis and narrative thematic analysis were conducted sequentially. The Labovian analysis was applied first to provide a framework for how stories are organized, followed by thematic analysis to identify patterns of meaning. Any differences that emerged between the two analyses were treated as analytically meaningful, as they may reveal the complexity of how para-athletes navigate their developmental pathways.

Patterson and colleagues (2013) described Labovian narrative analysis as a "method of recapitulating past experience by matching a verbal sequence of clauses to the sequence of events which (it is inferred) actually occurred" (p. 28). Specifically, this method focuses on the sequencing and structure of events as the defining feature of narrative (Patterson et al., 2013). It is considered event-centered because it analyzes how individuals recount personal experiences by organizing them into a series of connected actions or happenings (Labov & Waletzky, 1997; Riessman, 2008). At the same time, it is often described as text-centered, as it focuses primarily on the internal features of the narrative (see Table 12 of the Labovian model).

The Labovian structural narrative method was chosen for this study because it focuses on a specific sequence of events and associated narratives. In particular, this method is well-suited to analyze how retired Paralympic athletes recount different stages

of athlete development. Since the focus of this study was on athlete development, analyzing data using the Labovian method allowed researchers to explore how individuals organize and give meaning to key moments and transitions in their sport careers. Given that the path to the Paralympic Games is often non-linear and depends on various factors (Patatas et al., 2021), this method provides a structured way to understand what happened in each story, while also paying attention to evolution of experience.

First, Labovian structural narrative analysis was applied to select interview segments to examine how participants construct their stories around turning points in athlete development (Labov, 1972). The analysis consisted of the six core elements of narrative structure as outlined by Labov (1972): 1) abstract 2) orientation, 3) complicating action, 4) evaluation, 5) resolution, and 6) coda to explore how para-athletes frame and describe their experiences in the Paralympic pipeline.

Following the Labovian analysis, narrative thematic analysis was employed to identify patterns across interviews (Riessman, 2008). Narrative thematic analysis followed a three-step process (Strauss & Corbin, 1998): 1) initial coding, 2) axial coding, 3) selective coding. During the first phase, open coding was conducted inductively to identify emerging concepts and initial codes. In qualitative research, open coding is typically the initial phase of data analysis and is usually followed by additional stages of coding, such as axial coding (Kendall, 1999; Strauss & Corbin, 1998). At the second stage, data were analyzed using axial coding (Strauss & Corbin, 1998). Specifically, related categories were connected to subcategories and identify patterns between data segments (Allen, 2017). Lastly, selective coding was the final stage of data analysis

where codes were formed into themes (Saldaña, 2016). Pipeline stages were identified inductively through narrative analysis of participants' athletic trajectories.

Reflexive Considerations

I acknowledge that this study was influenced by my personal and professional subjectivities. To begin with, my identity as a former professional athlete informs this research. Although I do not have a physical disability, I competed in para-cycling as a sighted guide for a visually impaired athlete. While I do not identify as a para-athlete, parasport has been an integral part of my life. The values often associated with elite performance such as discipline, resilience, excellence, focus, adaptability, and integrity (Chrétien et al., 2024) continue to shape how I approach research and life more broadly. I am particularly aware that my identity as an able-bodied female doctoral student and foreign background (non-native English speaker) may influence how participants perceive my role and what they choose to disclose in interviews. I intentionally prioritize ethical engagement (Floyd & Arthur, 2012) and reflexive practices (Clandinin & Connelly, 2000) throughout the research process.

I was introduced to athletes with disabilities at a young age through sport. These early experiences were deeply influential, as athletes openly shared the various adaptations that they used in sport equipment to compete. Some of my teammates became mentors, individuals I looked up to and learned from. Their openness helped me develop an early awareness of disability and taught me to view it through a lens of ability, adaptability, resourcefulness, and resilience rather than limitation. After I finished my athletic career, I transitioned to academia and began conducting research on adaptive

sport. I had the opportunity to present my work at both academic and industry conferences across the United States which opened up new perspectives for me. Through those conversations and observations, I was able to better understand the cultural values and organizational practices that shape the world of adaptive sport in the United States.

My personal experience influences how I interact with my data in several ways. First, they increase my sensitivity to the complexities and diversity of para-athlete experiences, particularly in terms of access and classification. Second, they shape the questions I ask and the meanings I seek to co-construct during interviews. Finally, because I recognize that my own experiences come from a different cultural context, I engage with the data reflexively and listen without projecting assumptions.

My identity as a woman also has implications for this research, particularly given the gendered dynamics in sport. Despite gradual progress, the sports industry remains a male-dominated space. I am aware of how gendered power structures can influence whose voices are prioritized and how expertise is perceived. I recognize that some participants, particularly male athletes may perceive or engage with me through gendered assumptions, which may subtly shape the narratives they choose to share.

To conclude, my positionality informs not only how I conduct this research, but why it matters to me. Sport has developed me as an individual and shaped my worldview; parasport has challenged me to expand both. My perspective is grounded in years of firsthand involvement in adaptive sport, where I have learned alongside and from athletes with disabilities. As a doctoral student, my academic journey has deepened this

engagement. As a result, this study is grounded in that intersection. This work matters to me because of who I am and what I have experienced.

Philosophical Assumptions

Qualitative research is guided by philosophical assumptions that influence how reality is perceived and how knowledge is constructed (Bleiker et al., 2019). This narrative case study was grounded in an interpretivist paradigm which assumes "that people's perceptions, ideas, thinking, and the meanings that are significant to them can be understood through researching their cultures" (Pervin & Mokhtar, 2022, p. 421). Moreover, this paradigm is based on interpreting how individuals understand and give meaning to their lived experiences within the social and cultural environments that shape them. In this study, the interpretivist lens enables the researcher to examine para-athletes' narratives to gain insight into their experiences within the Paralympic pipeline in the United States.

Aligned with this paradigm, the study adopted constructionist epistemology and recognizes that knowledge is not discovered but socially constructed through language and interaction (Esin, 2011). From ontological perspective, this study is situated within a relativist view which assumes that multiple realities exist and are shaped by individual perspectives and experiences. Smythe and Giddings (2007) illustrate the idea of socially constructed truth with a metaphor: "truth is socially constructed: for example, there is a truth about which side of the road you drive depending on the country you are in" (p. 44). Each of these assumptions is discussed in detail below.

Ontology

Hein (2024) stated that "ontology is, by definition, one of the three components (along with epistemology and methodology) ... that guide qualitative research" (p. 1). Similarly, Hall (2003) described ontology as “fundamental assumptions scholars make about the nature of the social and political world and especially about the nature of the causal relationships within that world” (p. 374). In line with this view, Denzin and Lincoln (2018) elaborated that “ontology refers to the philosophical assumptions researchers hold about “the nature of reality” (p. 56), what exists, what can be known, and what is considered real. Goertz and Mahoney (2012) discussed ontological assumptions in qualitative methodologies and elaborated that “most concepts are intended to represent phenomena in the empirical world as they actually exist. Thus, when one asks about the meaning of a concept, one is asking about the nature of reality” (p. 207). To put it more succinctly, Poucher et al. (2020) stated that “ontological assumptions concern the nature of reality” (p. 165).

Building on this understanding, Edelheim (2014) expanded that "ontology, or the study of being, creates the framework for how we, as individuals, connected in societies, make sense of the reality in which we live". (pp. 30-31). Similarly, Killam (2013), in her book on research terminology, described ontology as "researcher’s beliefs about the nature of reality. In philosophical terms, it refers to the study of our existence and the fundamental nature of reality or being" (p. 6). Ontological assumptions influence how researchers view reality.

The origins of ontological thought can be traced to early Greek philosophy, particularly to Plato's exploration of "being" and Aristotle's contributions to metaphysics (Killam, 2013; Klakegg, 2016). Throughout history, philosophers have relied on terms such as "object," "property," "relation," and "category" to explore the fundamental structure of reality (O'Grady, 2002). Before Immanuel Kant, there was a common goal to uncover the true nature of reality through rational reasoning. However, some philosophers approached ontology from a skeptical perspective and suggested that human cognition may not be equipped to answer such questions (Tolley et al., 2017). Still, there was a shared belief that ontology was about portraying reality as it actually is (O'Grady, 2002). Kant challenged this perception and suggested that we cannot know reality as it exists on its own, only as it appears to us through our minds. He believed ontology is still important because it helps people to understand how our minds shape the way we experience and interpret the world around us (Goldman, 2021).

In this study, I adopted a relativist ontology which assumes that multiple realities exist and are shaped by individuals lived experiences (Lincoln et al., 2018). Poucher and colleagues (2020) explained that "a relativist ontological position implies that the concept of 'reality' is dependent on those interpreting it" (p. 165). Furthermore, from a relativist ontological viewpoint, "there is nothing absolute" in the world (Rassokha, 2022, p. 1443). Researchers who adhere to relativist ontological views suggest that reality is not universal but rather multiple, and dependent on the perspectives of those experiencing it. Reality, in this sense, is subjective and interpreted. Moreover, it emerges through interactions between individuals and their environments.

The purpose of this study was to understand para-athletes' experiences in the Paralympic pipeline. This research is grounded in relativist ontological assumptions, which means that I view reality not as a single truth, but as something that can be experienced and interpreted in multiple ways. In other words, I acknowledge that each para-athlete's journey to elite performance is shaped by different personal and social factors such as background, access to resources, culture, environment, and support systems. Therefore, no two experiences are exactly the same. From a relativist perspective, all of these individual accounts represent valid "realities". Through this lens, I aim to explore the complexity of athlete development in parasport.

Epistemology

This study was informed by a constructionist epistemology. Epistemology refers to the branch of philosophy concerned with the following questions: how we come to know what we know and what counts as legitimate knowledge (Denzin & Lincoln, 2011). Carter and Little (2007) succinctly define epistemology as the "justification of knowledge" (p. 1317) and emphasize that researchers must critically consider the grounds upon which knowledge claims are made. Rather than assuming that knowledge exists independently and objectively in the world, qualitative epistemologies often recognize the influence of context, and human interaction in shaping what is known. Similarly, Harding (1987) described epistemological issues as "issues about an adequate theory of knowledge or justificatory strategy" (p. 2) which points to the critical need for researchers to be transparent about how they justify their interpretations.

Carter and Little (2007) emphasize the epistemological significance of methodological choices by stating that “methodologies justify methods, and methods produce knowledge, so methodologies have epistemic content” (p. 1320). In support of this view, Grass (2024) refers to epistemology as the “essence of research as a scientific endeavor” (p. 44) and points to its foundational role in influencing not just methodological decisions, but purpose and values that guide scholarly inquiry. Therefore, methodology is inherently linked to how knowledge is conceptualized and validated. In other words, the way researchers choose to structure their studies, the questions they ask, the tools they use, and how they interpret findings is deeply informed by their epistemological stance (Killam, 2013). Further clarifying this idea, Edelheim (2014) explained that "epistemology, or the study of knowledge...sets out to explain why we jointly decide that certain things are true, and others are not" (pp. 30–31).

Most qualitative research epistemologies challenge the notion of a singular, objective truth (O'Reilly & Kiyimba, 2015). One of the epistemological stances that informs narrative case studies is constructionism (Alleyne, 2015; Flick, 2014; Pino Gavidia & Adu, 2022; Whiting, 2007). Aligned with constructivist epistemology, constructionism is grounded in the belief that knowledge is actively constructed through engagement with the world (Olssen, 1995; O’Reilly & Kiyimba, 2015). Epistemologically, constructionism refers to the view that knowledge is not an objective reflection of the world but is shaped through ongoing social processes. O’Reilly and Kiyimba (2015) identified three key influences on how knowledge is constructed: language, culture, and history. These elements mediate human perception, which means

that experiences and understandings are formed through social and cultural interaction. Researchers working within this epistemological perspective often challenge taken-for-granted assumptions and instead focus on the culturally and historically specific ways in which knowledge is constructed (Holstein & Gubrium, 2008; O'Reilly & Kiyimba, 2015).

Research grounded in social constructionism views knowledge as the product of human interaction (Young & Collin, 2004). In qualitative inquiry, knowledge is collaboratively shaped by the researcher and participant through ongoing interaction and is understood as dynamic and evolving (Esin et al., 2014).

Although the terms constructionism and constructivism are often used interchangeably, they represent distinct epistemological perspectives (O'Reilly & Kiyimba, 2015). Whereas constructivism focuses on the individual's internal process of constructing knowledge through experience (individual focus); moreover, constructionism views meaning as it emerges through shared interactions and dialogue (social focus).

Constructionism reflects my epistemological belief that knowledge is socially constructed through language, history, and culture rather than discovered as a fixed truth. This epistemological stance shapes how I approached this study. As mentioned earlier, the purpose of this study was to explore the experiences of para-athletes in the Paralympic pipeline. Because I view knowledge as co-created, I do not aim to uncover one objective reality but instead seek to understand how participants make meaning of their developmental journeys through dialogue. This perspective informs the use of semi-

structured narrative interviews, where meaning is constructed through conversation between the participant and me as the researcher. The constructionist perspective aligns closely with narrative case study approach which values storytelling as a process through which participants reflect on and communicate their lived experiences.

Moreover, qualitative scholars emphasize that aligning one's ontology, epistemology, methodology, and methods is essential to ensuring research credibility (Carter & Little, 2007; O'Reilly & Kiyimba, 2015; Tuval-Mashiach, 2017). Furthermore, researchers must be transparent and clearly articulate three core aspects of their work: what I did (methodology, guiding paradigm), how I did it (methods and strategies), and why I did it (reflexivity; Tuval-Mashiach, 2017, p. 131).

Ethical Commitments

As mentioned earlier, this study was guided by a relativist ontology, which assumes that multiple realities exist based on individual experiences, and a constructionist epistemology, which posits that knowledge is constructed through interpretive engagement with the social world. Within this framework, I adopt an interpretivist paradigm where the researcher serves as the primary instrument of interpretation. Therefore, I did not seek to uncover an objective truth, but rather to explore how para-athletes experience and assign meaning to their developmental journeys within the U.S. Paralympic pipeline. Philosophical commitments have direct ethical implications for how I engage with participants and manage the data. Scholars discussed several ethical commitments that are essential for qualitative researchers such as privacy and confidentiality (Morse & Coulehan, 2015); informed consent (Smythe & Murray,

2000); and respect for the participants (Guillemin & Heggen, 2009). Each of the ethical considerations is discussed in detail below.

Prior to data collection, I obtained Institutional Review Board (IRB) approval from the University of Tennessee to ensure that all study procedures align with ethical standards for human research.

Privacy and Confidentiality

As Morse and Coulehan (2015) stated "protecting the privacy of study participants is a core tenet of research ethics" (p. 151). Smythe and Murray (2000) further explained privacy is "the right of individuals not to have personal and identifying information about them disclosed without their permission. Confidentiality and anonymity are the means by which researchers protect their participants' rights to privacy" (p. 313).

To ensure confidentiality, all participants were assigned pseudonyms, which were used in interview transcripts, memos, and any publications resulting from the study. The key that links participants' names to their pseudonyms was stored securely on the University of Tennessee's Microsoft Teams platform and destroyed upon completion of the research. The data were collected and reviewed in private settings, and only the amount of personal information necessary to meet the study's goals was recorded. Interviews were conducted over a virtual platform, Zoom, at a location of the participant's choosing. No identifiable data were shared with anyone outside of the research team.

Informed Consent and Accessibility

In keeping with the ethical principles of respect and equitable participation, informed consent was obtained verbally. A decision to waive written signatures was made since the population of this study includes individuals with a range of physical and visual disabilities, some of whom may experience barriers to signing written or digital consent forms due to their impairment. This included all participants in the study such as retired Paralympic athletes from the United States. The consent script was shared in advance, and verbal consent was audio recorded at the start of each interview. The voluntary nature of participation was emphasized, and participants were informed of their right to skip questions or withdraw from the study at any time.

Respect for Participants

Discussing personal experiences of athlete development within the U.S. Paralympic pipeline can be emotionally complex as it may bring negative memories or inequities that athletes may have faced. Some participants may revisit moments that involve identity loss (athletes with acquired disabilities), exclusion, or resilience that are deeply personal. In anticipation of this, I approached each interview with empathy and respect for participants' emotional boundaries. I communicated clearly at the beginning of the interview that participants have complete control over how much they choose to share, and that they are free to pause or end the interview at any time without consequence.

Creating a respectful, safe, and nonjudgmental interview environment is not only ethically necessary but foundational to qualitative work rooted in interpretivist and

relativist assumptions. In instances where difficult emotions arise, I hold space with the participants rather than rush past them. Drawing on relational ethics (Ellis, 2007), I made selective, intentional disclosures about my own background, specifically, my experience in parasport as a tandem guide ("pilot").

Positional Considerations

Corbin Dwyer and Buckle (2009) shared: “as a qualitative researcher, I do not think being an insider makes me a better or worse researcher; it just makes me a different type of researcher” (p. 54).

I began this section by aligning with the quote above and believe that holding either an insider or outsider position does not inherently make a researcher more legitimate, but rather different. In my dissertation, I hold both insider and outsider positions which are shaped by my identity, experiences, and relationship to the para-athlete and coach populations included in this study.

To begin with, I am aware that being an able-bodied person places me in an outsider position relative to the core identity of the participants in this study, who are individuals with disabilities. I do not share this identity. However, I have partial membership within the parasport community and a professional athlete background, which closely aligns with participants' experiences. More specifically, since this study focuses on athlete development, my personal experience in sport is relevant. I started competing in sport at a young age and committed to a single discipline, cycling, at the age of 11. As a cyclist, I competed in local, regional, and national competitions. Later, when I transitioned into tandem para-cycling to be a sighted guide for a visually impaired

athlete, I began representing my home country at national and international competitions, including National Championships, National Cups, and World Championships. These identities are highly relevant to this study, as para-athletes must qualify for the Paralympic Games by competing at local, regional, state, national, and international levels. This shared trajectory positions me as a partial insider to their development experiences.

In my current role as a doctoral student in Sport Management, my research consistently focuses on adaptive sport and athletes with disabilities. I have presented my work at adaptive sport industry conferences where the primary audience included athletes with disabilities, recreational therapists, coaches, NGB representatives, and adaptive sports nonprofit staff.

In line with an interpretivist paradigm, my goal is not to separate myself from the research process but to acknowledge how my positionality informs the interpretation of the data. I engage reflexively with these identities throughout the study, recognizing that they impact on how I collect, analyze, and present participants' narratives. As Dwyer and Buckle (2009) emphasize, occupying the space between insider and outsider can foster unique insights, provided that the researcher is critically self-aware and transparent throughout the process.

Quality Considerations

As Cypress (2017) noted, maintaining rigor and representing truth are essential priorities in qualitative research. In particular, rigor is demonstrated through the concept of trustworthiness, which replaces quantitative criteria such as reliability and validity

(Denzin & Lincoln, 2011). Key indicators of trustworthiness include credibility, transferability, dependability, and confirmability (Ahmed, 2024; Creswell, 2007; Lincoln & Guba, 1985). These indicators reflect the degree to which the research accurately represents participants' experiences (Cypress, 2017). Andrews (2021) discussed quality indicators specific to narrative studies in qualitative research design and stated, "human beings trying to understand other human beings are not a clear-cut business, and the tools which we use to carve our work should not have a sharp edge" (p. 363). The author emphasized several indicators including trustworthiness, ethical sensitivity, co-construction of meaning, attention to the untold, and recognition of multilayered stories that determine the quality of narrative research (Andrews, 2021).

Moreover, qualitative researchers commonly use various techniques such as member checking, reflexive journaling, triangulation, and rich thick description to enhance the trustworthiness of the study (Creswell, 2007; Dodgson, 2019). The quality of a qualitative study depends on how well the research process aligns with the study's philosophical assumptions and how rigorously the researcher engages with the data and their own positionality (Carter & Little, 2007; O'Reilly & Kiyimba, 2015).

To ensure rigor in this narrative case study, I employed several quality indicators that are commonly recognized within qualitative methodologies. Specifically, I used triangulation to strengthen the credibility of the data (Carter et al., 2014; Yin, 2009). I also engaged in memoing (Tuvual-Mashiach, 2017) after each interview to address reflexivity. Additionally, I maintained a detailed researcher's journal to document how my positionality informs interpretation throughout the study.

Additionally, I maintained transparency by articulating my positionality and openly sharing my insider-outsider identity to acknowledge how my experiences may influence data interpretation. Although no formal observation was conducted, I attended to relevant nonverbal cues and contextual elements that emerge during the Zoom interviews, such as participants' expressions, tone, and pauses, as part of the meaning-making process in narrative case study.

Triangulation

According to Patton (2014), using multiple sources of data can strengthen trustworthiness of narrative research. Similarly, Flick (2007) noted triangulation provides additional strategies to corroborate qualitative data that would not be possible with a singular data collection strategy. In line with this viewpoint, Creswell (2007) elaborated that "researchers make use of multiple and different sources, methods, investigations, and theories" (p. 208) to ensure triangulation. In this narrative case study, data source triangulation was used to ensure trustworthiness (Patton, 2014). Specifically, data were collected primarily through in-depth, semi-structured interviews with Paralympic athletes who represented different sports, disability types (sport classes), geographical regions in the United States. The interview narratives were examined alongside publicly available documents, including sport organization materials, athlete biographies, and media content, which provided contextual insight into athlete pathways. Source triangulation aimed to strengthen interpretive depth by identifying convergence and divergence across data sources (Carter et al., 2014).

Memoing

Memoing is a research technique commonly associated with grounded theory; however, it can also be effectively applied in other qualitative approaches, including narrative case studies (Birks et al., 2008). Birks et al. (2008) further explained that "memos can help to clarify thinking on a research topic, provide a mechanism for the articulation of assumptions and subjective perspectives about the area of research, and facilitate the development of the study design" (p. 69). Moreover, memoing involves writing reflective notes throughout the research process to examine how concepts are related and to document the rationale behind specific coding decisions (Given, 2008; Saldaña, 2016).

For this study, I maintained a memo document separate from my researcher's journal and data analysis files. This memo log was dated and organized to ensure a transparent audit trail throughout the research process (Tuvual-Mashiach, 2017). Within these memos, I documented my rationale for coding decisions, including why particular segments of data are interpreted in specific ways, and how I group those codes into broader categories and themes (Saldaña, 2016).

Peer Review

Peer review was used as a form of external critique to strengthen the credibility of the research (Creswell, 2007; Hadi & José Closs, 2016; Lincoln & Guba, 1985; Lim, 2025). Throughout the data analysis process, I engaged in peer debriefing sessions (Lincoln & Guba, 1985) to identify potential blind spots and refine emergent themes.

Researcher's Journal

As Ortlipp (2008) described "keeping self-reflective journals is a strategy that can facilitate reflexivity, whereby researchers use their journal to examine 'personal assumptions and goals' and clarify 'individual belief systems and subjectivities' (p. 695). Building on this perspective, Annink (2017) discussed research journal as a tool for reflection and stated that "it contains a critical analysis of the (political) context in which actions unfold, the researchers' knowledge, skills, expertise, values, assumptions, and the emotions evoked by the research" (pp. 3-4). The research journal is a tool for observing, questioning, critiquing, synthesizing, and acting (Annink, 2017, p. 4). When researchers consistently maintain a research journal, they demonstrate transparency in their thought processes which contribute to the overall trustworthiness and rigor of the study (Clandinin & Connelly, 2000; Ortlipp, 2008)

For this narrative case study, I maintained a research journal as a reflective space to explore my reactions, thoughts, and emotions that arise during various stages of the research process, particularly following interviews. Building on Gobo and Molle's (2017) suggestions of emotional notetaking, I used the journal to expand on my emotions and feelings during the data collection process. Kim (2016) notes, the researcher's voice is not only present but necessary in narrative research. My journal, therefore, supports the development of that voice. I made consistent entries at least once per week to ensure transparency throughout the research project.

Field Notes

Field notes originated in ethnographic anthropology, where researchers would take “scratch notes” to document personal reflections and observations during fieldwork (Emerson et al., 2011). Today, most qualitative research approaches recommend that researchers take field notes to “enhance data and provide rich context for analysis” (Phillippi & Lauderdale, 2018, p. 381). Additionally, Burkholder and Thompson (2020) noted that field notes “continue to change and evolve” (p. 3) and “are produced, analyzed…in digital and online spaces” (p. 3).

In this study, field notes were taken during each Zoom interview as well as while re-listening to the audio recordings. Drawing on Clandinin and Connelly’s (2000) guidance, these notes document the contextual elements of each interview, including the digital setting, participant behavior, and vocal and tone changes. Although the interviews were conducted virtually, attention was toward visual cues such as participants’ facial expressions and body language (Webster & Mertova, 2020).

Rich, Thick Descriptions

As Creswell (2007) noted "rich, thick descriptions allow readers to make decisions regarding transferability because the writer describes in detail the participants or setting under study" (p. 209). Rich, thick descriptions were used to narratively situate participants’ experiences in their unique timeline of the Paralympic pipeline. Specifically, descriptions highlighted key contextual details for participants with congenital and acquired disabilities, including their backgrounds, the primary and secondary sports they pursued and relevant timelines that situated their narratives with broader developmental

context. This strategy enables readers to make decisions regarding transferability of the findings, as recommended by Lincoln and Guba (1985).

Chapter Summary

This chapter outlined both the methodology and methods guiding this narrative case study. It began with a discussion of the characteristics of qualitative research design and established the study's foundation within an interpretivist paradigm. The selected research design, narrative case study, was then introduced as a means of understanding human experience through lived and told stories (Clandinin & Johnson, 2017), while situating those stories within the context of a bounded case (Brandell & Varkas, 2010). Narrative case study was employed to explore the lived experiences of retired U.S. para-athletes leading up to the Summer Paralympic Games between 2012-2024. The chapter next described the methods of data collection, including narrative interviews, as well as the processes of data analysis using Labovian analysis (Labov, 1972) and narrative thematic analysis (Riessman, 2008). Strategies used to ensure trustworthiness were then discussed, followed by reflexive considerations, philosophical assumptions, and ethical commitments. The chapter concluded with a discussion of quality considerations of the study. The following chapter presents the findings that emerged from this narrative case study.

CHAPTER FOUR

FINDINGS

This narrative case study examined the experiences of retired para-athletes within the U.S. Paralympic pipeline and explored whether these experiences differed based on impairment origin (congenital or acquired). The previous chapters provided context for this study and outlined the history of the Paralympic movement in the United States, long-term athlete development models, and factors that influence athlete development in Paralympic sports. Chapter 3 detailed the research design, methodology, methods, trustworthiness of the study, and researcher subjectivity. This chapter is organized into several sections. It begins with brief narrative introductions of the participants, followed by five primary themes developed through data analysis, which outline key stages of the U.S. Paralympic pipeline. The chapter then examines gaps and transitions between these stages. Finally, this chapter concludes with a summary of the findings.

Narrative Introductions of Participants

This study included 17 participants. Participant demographics are presented in Table 13 and include participants' pseudonyms, gender, age, impairment origin (congenital or acquired), sport, and the Paralympic Games in which participants competed. In the narrative introductions that follow, additional detail is provided about each participant and their involvement in adaptive sports. To protect participant confidentiality, identifying details such as specific geographic locations, type of disability, and Paralympic classification information were intentionally omitted and are not reported.

Dylan

Dylan is a researcher-selected pseudonym for a 46-year-old male retired para-athlete with a congenital disability. He was first exposed to adaptive sport during early adolescence through a junior wheelchair sports camp. He primarily competed in wheelchair basketball and grew up in a highly competitive sport environment, as his siblings were involved in able-bodied sports.

Sarah

Sarah is a researcher-selected pseudonym for a 66-year-old female retired para-athlete with an acquired disability. She was introduced to adaptive sports at the age of 58; however, she was participating in able-bodied sports starting age 10. She began using a wheelchair on a full-time basis and was introduced to adaptive sport after acquiring her disability. Sarah's primary sport was para fencing.

Lauren

Lauren is a researcher-selected pseudonym for a 41-year-old female retired para-athlete with an acquired disability which resulted from a car accident at age of 7. Approximately one year later, she was introduced to adaptive sports. Lauren primarily competed in wheelchair track.

Olivia

Olivia is a researcher-selected pseudonym for a 39-year-old female retired para-athlete with an acquired disability sustained at 5 and a half years old. She grew up in a rural area and was introduced to adaptive sport during childhood. Olivia primarily competed in wheelchair track.

Emma

Emma is a researcher-selected pseudonym for a 51-year-old female retired para-athlete with a congenital disability. She was introduced to able-bodied swimming at age 12 and began participating in organized competition more seriously by age 16. Swimming remained her primary sport as she progressed through the pipeline.

Liam

Liam is a researcher-selected pseudonym for a 40-year-old male retired para-athlete with an acquired disability sustained in 2004, when he was 19-years old. He began participating in adaptive sport at age 20. Prior to acquiring his disability, Liam was highly active in able-bodied sports, including basketball, football, baseball, hockey, swimming, and track. His primary Paralympic sport was wheelchair rugby, through which he transitioned into competitive adaptive sport following injury.

Noah

Noah is a researcher-selected pseudonym for a 34-year-old male retired para-athlete with a congenital disability. He became active in sport at the age of 6 and first participated in organized competition around age 10. Noah explored a variety of sports during childhood and adolescence, with wheelchair track emerging as his primary sport.

Josh

Josh is a researcher-selected pseudonym for a 35-year-old male retired para-athlete with a congenital disability. He began playing wheelchair basketball at 5-years old and remained in the sport for the duration of his athletic career.

Amelia

Amelia is a researcher-selected pseudonym for a 27-year-old female retired para-athlete with a congenital disability. She was introduced to adaptive sport at age 14. Her primary sport was para track and field, with a specific focus on shot put, through which she developed her competitive athletic career.

Chris

Chris is a researcher-selected pseudonym for a 25-year-old male retired para-athlete with a congenital disability. He was introduced to judo at age five and remained in the sport throughout his athletic career. Chris grew up in a family actively involved in judo, and his development was influenced by training under a coach who was a Paralympic medalist.

Aaron

Aaron is a researcher-selected pseudonym for a 32-year-old male retired para-athlete with an acquired disability sustained at age 15. He had been involved in swimming since he was 9-years old. Initially Aaron joined the swimming team with his younger brother, alongside a younger sister who later participated as well. Para swimming remained a primary sport in Aaron's athletic development both before and after disability acquisition.

Henry

Henry is a researcher-selected pseudonym for a 30-year-old male retired para-athlete with a congenital disability. He was introduced to sport at around the age of 7 and consistently described a strong interest in basketball, which was developed through informal play in his neighborhood. After not making the basketball team in seventh

grade, he shifted into track and field. Track and field eventually became his primary sport and the focus for his continued involvement in organized competitive sport.

Mel

Mel is a researcher-selected pseudonym for a 52-year-old female retired para-athlete with an acquired disability sustained during a ski accident at age 16. She began skiing at the age of 3 and started competing at the age of 7. After acquiring disability, Mel transitioned from winter to summer sports, with para-cycling becoming her primary Paralympic sport and the main focus of her post-injury athletic career.

Ava

Ava is a researcher-selected pseudonym for a 39-year-old female retired para-athlete with a congenital disability. She engaged in sport casually during childhood, including brief participation in basketball and bowling. At age 17, she entered her first organized competition in judo, which became her primary sport and remained central to her athletic career.

James

James is a researcher-selected pseudonym for a 35-year-old male retired para-athlete with a congenital disability. He was introduced to sport at 6-years old and grew up playing soccer alongside able-bodied peers, while also participating in basketball and baseball. Paralympic soccer (football 7-a-side) became his primary sport.

William

William is a researcher-selected pseudonym for a 41-year-old male retired para-athlete with an acquired disability sustained at 8-years old. Prior to disability acquisition,

his mother enrolled him in swimming lessons. He attended public schools, where he learned Braille, and participated in recreational baseball. During high school, he joined the track team, which became his primary sport.

Christina

Christina is a researcher-selected pseudonym for a 29-year-old female retired para-athlete with a congenital disability. She was introduced to sport at an early age, beginning skiing at 2-years old and later trying other sports including soccer, ballet, and softball. Then, she was introduced to swimming at the age of 8 through a local summer swim team. Swimming became her primary sport and the central pathway through which she developed as an athlete.

Findings

Between the Labovian narrative analysis (Labov, 1972) and narrative thematic analysis (Riessman, 2008), two complementary sets of findings were developed. The first section of the chapter focuses on the participants' experiences at each of the five identified stages of the U.S. Paralympic pipeline. The five stages of the U.S. Paralympic pipeline include: (a) grassroots programs, (b) high school sport involvement, (c) collegiate experience, (d) national team, and (e) Paralympic-level competition. Importantly, the five stages are presented as a chronological framework that emerged through narrative analysis of participant journeys. The identified stages reflect the developmental progression as participants moved from initial exposure to sport toward competition at the Paralympics. The second part of the chapter shifts from mapping movement through the pipeline to interpreting what shaped that movement. Specifically,

this part addresses gaps and transitions between the five stages and includes two primary themes: (a) access to opportunity and (b) capacity to advance. Each primary theme is supported through several secondary themes. The first primary theme, access to opportunity, is reflected through entry barriers, accessibility, and awareness. Whereas, the second primary theme, capacity to advance, includes limited coaching support, isolation, and financial constraints. It is important to acknowledge that the themes emerged to different extents across the pipeline stages.

To summarize, the first section presents the stages that describe where participants' development occurred, while the second section introduces the themes that illustrate how and why movement between stages was supported or constrained. See Figure 2 for an overview of the U.S. Paralympic pipeline. See Appendix C for the codebooks that show the construction of codes to themes in the data analysis process.

Grassroots Programs

The grassroots stage consisted primarily of community-based adaptive sports programs, rehabilitation programs based at hospitals, as well as inclusive opportunities within able-bodied local sport clubs. Adaptive sport programs at this stage were most often delivered through non-profit organizations, whereas able-bodied sport opportunities were typically offered through for-profit club structures. For Emma, entry into adaptive sport occurred through a local non-profit organization that distributed information about available opportunities. Her parents signed up for the organization's newsletter, she recalled:

> They [a non-profit organization] would send out a monthly newsletter, I think it was every 2 months or something. It had a newsletter of different opportunities in it. In the back, it had regional opportunities to go to. My parents started fundraising, and I would go to those regional opportunities.

Sarah shared a similar experience and was exposed to adaptive sports through a community organized camp. She stated,

> I went to a camp [camp name] for women in wheelchair sports. We tried a variety of sports; we did swimming, biathlon, cycling, sailing, horseback riding, yoga. We did not do fencing. Then, when I came home from the camp, I said, "well, I can still be an athlete, because I was before I became paralyzed." And then I just Googled wheelchair sports. I saw a video of Lauren de Luca from the U.S. doing para fencing in the Rio Paralympic Games. I thought, "Oh, my God, that is so cool!" It was beautiful to watch, and as soon as I saw it, I said, "That's what I want to do". I went on Facebook to find somebody that knew about this because I knew nothing about it, and I found a group of women fencers on there. I asked, "Does anybody know about fencing in a wheelchair?" And they are all popping up "no, but let me find out."

Chris, on the other hand, entered adaptive sports through able-bodied club: "Growing up, I mostly competed in able-bodied judo. I trained with able-bodied judo players, and I wasn't really introduced into para judo (visually impaired judo) until the age of 14". Similarly, Aaron mentioned early sport involvement that occurred in able-bodied sport club. He stated,

> My mom put us in swimming lessons every year because she could not swim. My dad always wanted us in a sport. And that was a great sport for all of us. I was 9 years old; I swam for the local club until I was 17. I was the only disabled athlete in the club. There was a deep learning curve.

For participants with congenital and acquired disabilities rehabilitation programs also functioned as an initial connection point to adaptive sports opportunities. However, participants noted that these early connections did not always lead to sustained involvement. In some cases, adaptive sport opportunities were limited by geographic availability which required participants and their families to relocate in order to continue participation. Olivia described being introduced to adaptive sport through a hospital-based program but experienced difficulty accessing additional opportunities in her local area:

> My parents were looking for opportunities for me to meet other kids with disabilities. We were connected through physical therapy. It was actually a team and an event that was sponsored by the hospital. I went to one event, and that was it. I went to that first event, and then there was nothing, we weren't able to find anything in the area.

Lauren was also introduced to adaptive sport through recommendations made during her rehabilitation process. Reflecting on this experience, she explained:

> At a children's hospital, they have an adaptive sports team based out of it. While I was in the hospital, very fresh off of my injury, through my recreational therapy, I got introduced to the guy who was the coach of that team at the time. While I was

> doing my rehab, they talked to my parents saying, like, “hey, you know, she can do sports when she gets out”. And after I was discharged, it probably wasn't more than 4 months or so before they convinced me and my parents that I should try sports again. I went to my very first practice when I was 8. I didn't really want to go, but once I did, I loved it, so then from there, I stuck with it.

Mel described a similar entry into adaptive sport through recommendations made during her rehabilitation program. Mel explained:

> While I was at [name] hospital, they told me they had a great recreation therapy program, and they told me that if I wanted to, I could still ski on an adaptive monoski. At first, I was like, ‘no, I don't want to ski, I'm going to get better, and I'm going to ski standing up,’ so I was convinced. Then, I left the hospital and went the next summer, and I actually got a water ski, and it was kind of my first sport that I did disabled.

Initial exposure to organized adaptive sports often occurred through informal pathways, including encouragement from peer/family networks and personal curiosity. Liam described how encouragement from friends prompted him to independently seek out adaptive sport opportunities. He said:

> Some of my best friends were like, “hey buddy, you’re getting fat, and you should probably do something about it.” It sounds really harsh, but it was rooted in love. They’re people I’m very close with, people I trust. I call them human guardrails, people who are there to lift you up and pull you back when you need it. That’s when I thought maybe I should look up wheelchair sports. My first introduction

> was literally me sitting behind a computer, typing in what a C6-C7 quadriplegic could do for sports. I had no idea what was out there.

Despite the informal nature of entry, participants described grassroots programs as critical stage for their athletic development. Dylan described this experience after attending a wheelchair sports camp, he explained:

> At the camp I was exposed to wheelchair basketball. At that point, they related to us that not only could you play this sport at a junior level, but you could also play it with adults, you could represent your country in the Paralympics, or that you could go and get a scholarship and play this at the collegiate level. They did a very good job of explaining to us all of the opportunities that were involved in the sport.

For many participants (with congenital and acquired disabilities), grassroots programs represented their first exposure to organized sport following impairment or, in some cases, their first sustained involvement in sport more broadly. Participants emphasized that access to grassroots sport opportunities was largely dependent on factors such as awareness, proximity, economic status, and social networks.

Summary

The grassroots programs stage emerged as a foundational phase in participants' developmental trajectories. Exposure to adaptive sports occurred through a wide range of informal pathways, including community-based programs, non-profit organizations, hospital- and rehabilitation-based initiatives, camps, and inclusive opportunities within able-bodied sport clubs. Across both congenital and acquired disability groups, families

and rehabilitation professionals often played a central role in facilitating initial participation. For some participants, non-profit organizations and community camps provided early awareness of adaptive sport opportunities, while others entered through able-bodied club systems before later transitioning into disability-specific programs.

Rehabilitation settings frequently functioned as an initial point of contact following injury or diagnosis; however, participants noted that these early connections did not always result in sustained involvement, particularly when local opportunities were limited or unavailable. Other factors such as geographic location, transportation, financial capacity, and social networks further influenced access to grassroots sport opportunities. Participants described how proximity to programs and the availability of knowledgeable support influenced whether early exposure could be maintained over time. As a result, continued participation at this stage often depended on family support and individual persistence.

High School Sport Involvement

For several participants, high school involvement stage represented another important step in the U.S. Paralympic pipeline, particularly in terms of training structure and consistency. Although parasport-specific opportunities were often limited, involvement in school-based sport provided access to more formalized training and included regular practice schedules. Emma described high school sport as a turning point in her development and emphasized the value of consistent training routines. In her reflection, she explained that “getting on the high school team” provided access to

“regular weightlifting or at least conditioning” along with “regular scheduled consistent training".

Participation in high school sport was described primarily through involvement in able-bodied school clubs or teams, as dedicated parasport options were often unavailable. This structure often delayed sustained interaction with other athletes with disabilities, as Emma further explained:

> I started swimming real competitively in high school, it was with able-bodied athletes, and I didn't really get around people with disabilities until I was 16 on a regular basis. Because there wasn't much opportunity, there wasn't organization, it wasn't available until I was later in my teens.

Several participants noted that joining able-bodied high school programs provided valuable competition experience and opportunities to develop sport-specific skills, even when adaptations were required. For some participants, this experience involved being the only athlete with a disability on their team.

Participants also described variability in the role of physical education teachers and high school sport club coaches during this stage. Some PE teachers and coaches were knowledgeable about the Paralympic movement and adaptive sport opportunities and played an important role in recommending that athletes pursue classification and explore parasport programs. Emma mentioned that she became involved in swimming because of her swimming coach:

> In my junior year [high school], he [swim coach] came up to me and asked, don't you want to be on the team? And I said: “I can't keep up with y'all, they're able-

> bodied" [teammates], and he's [coach] said: "no, no, no, no, there's room for you, come on." My friends encouraged me to go, and I went, and then my junior-senior year was my first real, serious training.

Similarly, William described his high school experience as "very supportive". Competing alongside able-bodied peers provided his regular training and encouragement which helped to improve his athletic performance. He explained:

> I competed against people who didn't have any sort of disabilities. It was against everybody and I believe it helped out a lot, because, number one, I had competition - just having people you could compete against. They had better results and competed better, and that pushed me. It pushed me to a point where my results became better than theirs. That helped me understand that just because you have a disability doesn't mean anything different. When we step into competition, we're all talented athletes, and the best person wins, despite your abilities or disability.

In contrast, many participants reported that such guidance or support was absent. Several noted that they were unaware of Paralympic or adaptive sport opportunities during their high school years and suggested that, without proactive support from teachers or school personnel, these pathways remained largely invisible. For example, Henry competed for a varsity high school track team along with able-bodied athletes. He described how his introduction to disability sport occurred incidentally during a high school track meet:

> I ended up winning the long jump, and after I was done competing, an individual came up to me and handed me a card. I looked at it, and it said, 'Disability Sports.' At the time, I had no idea what that meant. I didn't know anything about Paralympic sport or sports for individuals with disabilities, so honestly, once he walked away, I threw the card in the trash. A little while later, my coach asked me if someone had handed me a card, and I told him no. That Monday, my jumps coach came up to me and asked again if I had received a card at the meet. I finally told her that I had, but I didn't understand what it was. She explained that someone had reached out to her and shared information about disability sport opportunities, including competing internationally and representing the United States. At first, I thought it sounded too good to be true. I had never heard of anything like that.

After learning more about adaptive sports and the Paralympic movement, Henry's understanding shifted from dismissal to recognition of potential athletic pathways as he continued his career as a para-athlete. It is important to note that high school involvement was not always experienced as inclusive or supportive, particularly for athletes with visual impairments who participated in able-bodied sports. Participants described situations in which their athletic contributions were overshadowed by perceptions of disability even when performance outcomes were strong. Some participants reported feeling marginalized because of their impairment. Aaron described this experience during high school and mentioned,

> I'm put in a lane by myself, and I'm told that I'm a problem for the team because I can't see. Yet I'm scoring more points than most athletes. So, I'm a high scorer, but because I'm blind, I'm treated very differently. And I'm told that I'm a problem and kind of a nuisance.

Transitions from high schools to college were often described as disruptive, particularly when athletes relocated away from established support networks. Participants noted that moving to a new state altered access to transportation and social support. Chris reflected on this experience and stated,

> The hardest part was I went to school in another state from my family, so I lost them. I lost access to having someone be able to drive me to practice, so I had to take public transportation. And then I was by myself. I was new in college, trying to balance everything. My first couple of years weren't the best. I would wake up, work out, go to class, do homework, go to judo, do more homework, and go to sleep. That was my routine pretty much every day. I didn't join any clubs. I didn't have a normal college experience. Then COVID happened, and I moved home. It got a lot easier to train because I was back with my original coaches and the people I grew up training with.

Summary

High school sport involvement emerged as an important but inconsistent stage within the U.S. Paralympic pipeline and was largely depended on the origin and timing of athletes' disabilities. For participants with congenital disabilities or impairments acquired prior to adolescence, this stage often represented the first period of prolonged exposure to

structured training environments, including regular practice schedules and organized competitions. Because parasport-specific options were rarely available at secondary schools, participation typically occurred through able-bodied school teams or clubs. Involvement at this stage supported athletic development and skill acquisition; however, interaction with other athletes with disabilities was limited as participants reported being the only athlete with a disability on a school team or in a club.

Participants' experiences during this stage also varied widely depending on the knowledge and attitudes of sport coaches and physical education teachers. In some cases, supportive coaches played a key role in encouraging participation and facilitating informal connections to adaptive sport pathways. In other cases, the absence of such guidance meant that Paralympic opportunities remained largely invisible during the high school years which required athletes to rely on chance encounters or personal initiative to learn about adaptive sports. Several participants also described experiences of marginalization from able-bodied individuals, particularly when disability was emphasized over performance.

For participants who acquired their impairment later in life, high school sport involvement was often not applicable, as impairment occurred after this developmental stage. As a result, entry into the Paralympic pipeline for these athletes occurred through different pathways.

Collegiate Experience

Collegiate experience emerged as a distinct stage within the U.S. Paralympic pipeline, though participants' experiences at this level varied considerably depending on

the sport. Several participants described the collegiate stage as “essential” in the U.S. Paralympic pipeline. Participants also noted that structured collegiate adaptive programs were more common in certain sports, particularly wheelchair basketball and wheelchair track, where established teams, competitions, and, in some cases, athletic scholarships were available. In these sports, college coaches were often present at junior national events and played an active role in identifying and recruiting athletes. Noah elaborated on his experience and noted:

> The track coach was actually the basketball coach when I got recruited, and he came up to me at [wheelchair] basketball Junior Nationals to tell me about what my academic scholarship and everything was going to be in [name of the university] already. He made me feel wanted.

For participants who competed in these sports, college provided opportunities to pursue higher education while remaining embedded in organized training, travel, and competitions. However, several participants who competed at the collegiate level reported disproportionate institutional support between able-bodied athletes and adaptive athletes. This disparity was most evident in access to uniforms, equipment, travel funding, and overall financial resources. Dylan received an athletic scholarship to play wheelchair basketball in college, but noted that the experience also involved several limitations, he said:

> You understand what the supports are in place for Division I athletes, and I know it intimately well, because my brother and sister were both Division I athletes with full scholarships. They [able-bodied athletes] are provided every single

> support from the way that you travel, from where you stay, from the amount of fans, from the media support, from what you end up getting from personal trainers to equipment, to shoes, to everything. We [athletes with disabilities] were treated largely as second class citizens, but it was all we had, so we dealt with it. I mean, we were traveling in 15 passenger vans, staying in really, really terrible locations. Oftentimes we would just get, maybe, a hamburger or 2 for food, because we were working on a shoestring budget. We would stay at hotels that provided a free continental breakfast for our food. There were very, very few supports in place.

In contrast, participants involved in other Paralympic sports described limited or nonexistent collegiate pathways. Emma, whose primary sport was para swimming, described her collegiate experience as one in which a formal varsity option in her sport was not available. She explained: "it wasn't an athletic scholarship because they didn't have a swim team, but I trained with the club team and the local high school team that he trained". Similarly, Aaron described facing access barriers when attempting to continue training during college. Reflecting on his experience, he noted, “I was a freshman in college trying to find a ride to a swim pool with extremely limited hours, and then also being told I couldn’t always swim. And it was hard. Access to that pool was extremely difficult”. Chris also described his collegiate experience as one where sport and academics were not integrated. He mentioned: “There’s no para-judo team for college. And honestly, judo and academics were pretty much two separate channels of my life.” In these cases, athletes pursued academic degrees unrelated to sport while continuing to train and compete independently or through external clubs and national organizations.

The absence of sport-specific collegiate programs often required athletes to manage training schedules alongside full academic course loads, with minimal institutional support. Similarly, William described navigating his collegiate years and relied on informal support to sustain his training. He explained:

> As I was in college, I still continued to focus on sport. I had reached out to a friend of mine who was an exercise and sports science major, and she helped in the sense of writing my workouts and guiding me around. I didn't compete specifically for the university. I made my first Games when I was a freshman in college, and I got on the podium, so I won a medal and got a check… so I just did everything on my own.

Participants also described instances of competing against able-bodied athletes due to the lack of adaptive competition opportunities at the collegiate level. In some cases, participants themselves assumed responsibility to identify and implement necessary adaptations such as modifications of training routines and equipment. As Emma explained: "I had to reach out to find a coach [in college], and I would train by myself a lot. And I would just use whatever I remembered from high school and piece workouts together on my own".

Across participants' narratives, the most challenging transition occurred between the collegiate experience and national team participation. Participants noted that qualifying standards shift from junior to adult benchmarks at this stage which requires substantial increases in performance and additional resources. At the same time, participants continued to manage educational and financial constraints and often had to

navigate this transition without access to additional support. As Dylan explained: “Until you're a really, really good player playing national team. You've got to buy them all yourself. This is a barrier to entry, just on the cost of wheelchairs. It could be as expensive as $10,000”.

Summary

The collegiate experience stage emerged as participants consistently mentioned the importance of this phase within the U.S. Paralympic pipeline. The main factor that influenced athlete development at this stage was their primary sport. For participants in sports such as wheelchair basketball and wheelchair track, college provided an opportunity to combine higher education with continued athletic development through established programs and, in some cases, scholarships. For those participants, collegiate sport offered exposure to elite coaching and a clearer pathway toward national and international competition.

However, in sports without formal varsity or adaptive collegiate programs, athletes were required to navigate college largely on their own. Thus, their academic and athletic lives were often separate. In these cases, participants relied on informal support networks or competed through external clubs. As a result, collegiate participation did not uniformly provide structured development.

Importantly, across structured and unstructured collegiate pathways, participants consistently described disparities between the support available to able-bodied athletes and athletes with disabilities. Even when athletic scholarships or formal teams existed,

adaptive athletes reported limited access to resources such as travel funding, equipment, medical support, and training infrastructure.

National Team

At the national team stage, participants described a significant shift in the level of support available to them, particularly in comparison to earlier stages of the pipeline. Support was often characterized by increased financial stability and access to specialized resources, which enabled athletes to train more consistently and focus on performance at the international level. Chris noted that during this period, support was more reliably available, especially from a financial standpoint. He noted,

> I had substantially more help from USA Judo at the time, financially. If you compete for a medal at a World Championships, you could be fully funded. It just so happens that my first ever qualifier was a World Championships, and I fought for a medal. … I was fully funded from 2018 through Tokyo. I also had access to a weightlifting coach and a nutritionist, just a lot more access to resources.

Similarly, Mel explained that once she achieved national team status, access to essential resources expanded substantially:

> Once I went to Nationals and won, I got put on the U.S. team, and then my coach was paid for. So, by making it to the U.S. team, and then by winning medals at World Championships, I was able to have funding, a stipend, coaching, and health insurance.

However, the financial support available at this level was often described as insufficient to sustain full-time training. Although national team membership provided

access to high-performance environments and some degree of funding, athletes emphasized that this support rarely covered the cost of living or the demands of elite preparation. As a result, many continued to balance intensive training with employment outside of sport. Lauren described this reality as:

> If you're on the national team, I still think your monthly stipend is pretty low in comparison to what it costs to live. Most athletes still are forced to work and train, because you can't survive just training, unless you've got some really good sponsorship deals or things like that. And I think that that's unfortunate.

Interestingly, the transition from national team participation to Paralympic-level competition was generally described as more straightforward. Once athletes had secured adequate institutional support and resources, participants reported being better able to focus on performance, with the primary goal of qualifying for Paralympic trials, which would ultimately determine selection for the Paralympic Games.

Participants also reflected on ways national team support structures could be improved to better respond to para-athletes' needs. In particular, they emphasized the importance of internal support that recognizes disability-specific considerations. Sarah highlighted the value of implementing a more formal process for communicating athlete needs to coaching staff. She explained:

> It would be really nice if all the para-fencers could fill out some kind of form with detailed information about our disability and how it affects us, and what physically we can, and what physically is impossible for us to do, so that the national coach would know. Because you roll in there, they don't know what you

> have, don't know what you can do or what you can't do, and that's a big disadvantage.

In addition, several athletes suggested that preparation for elite sport should extend beyond training and competition to include more opportunities that help athletes navigate sponsorships, public engagement, and post-sport careers. William reflected on this aspect of the pipeline and described his involvement in what used to be called the Paralympic Ambassador Program as a particularly impactful experience:

> I was introduced to what was called the Paralympic Ambassador Program. They chose certain athletes to go into the community and be ambassadors for the Paralympic movement. They connected us [para-athletes] to different professionals and helped us understand how to give a two-minute elevator speech, how to do a 15-minute or 30-minute presentation, and how to get comfortable speaking in front of people. That was really huge, because prior to that, I got my first sponsorship…, and I feel like being able to speak, articulate myself, and share my story is what helped me get those sponsorships. That program was really instrumental in my success.

Summary

The national team stage represented a clear shift in participants' experiences within the U.S. Paralympic pipeline. Specifically, the stage was characterized by increased institutional recognition and access to higher levels of support.

Participants consistently described expanded access to Team USA resources. For many, national team selection reduced the uncertainty that defined earlier stages and

allowed participants to prioritize international competition and long-term athletic goals. At the same time, participants emphasized that national team membership did not equate to full financial security. While stipends and travel support were available, these resources were often insufficient to cover the full cost of living or the demands of elite training. As a result, many participants continued to balance full-time employment with national team responsibilities which highlights an ongoing tension between institutional support and the realities of parasport at the national team level. Participants also identified areas where national team structures could be strengthened.

Paralympic-level Competition

The Paralympic level represented the highest stage of the pipeline and was described as the culmination of multiple years of development and sustained commitment to the sport. Participants consistently described a strong sense of pride associated with representing their country at the Paralympic Games. Dylan discussed the role of wheelchair basketball and its impact on his personal life and athletic career. He stated,

> It gave me passion. It gave me a drive. It gave me a purpose. It provided me a lot. It provided me with self-esteem, a friend group. But more than anything it provided me with something to fight for, something to shoot for, and that's what wheelchair basketball gave me. It's a great sport. I fell in love with it. I gave wheelchair basketball all I had, and wheelchair basketball gave me a lot back because of that. I got to travel the world, and I got to represent my country and win gold medals. It also helped me get an education.

Similarly, Sarah reflected on entering the Paralympic stadium for the first time, and described how the experience exceeded anything she had imagined:

> I'll never forget rolling out into the Paralympic Stadium for opening ceremonies. When we came out and they were yelling "U.S.A., U.S.A.," I just started bawling. I thought, 'Oh my God, I did it. I'm really here.' I had visualized that moment for so long but being there far surpassed anything I could have dreamed of. Hearing them say over the loudspeaker, "Representing the United States of America" was overwhelming. I remember thinking, 'I cannot believe the little me is up here representing my entire country.'

Participants who competed in wheelchair basketball described performance expectations that extended beyond national team preparation and into fully professional sports. For these participants, reaching this level involves competing internationally in club systems, particularly in Europe. Josh explained that success at the Paralympic level in wheelchair basketball was closely tied to sustained participation in these elite international events. He described this stage as one in which training intensity and competitive standards mirrored those of professional able-bodied sports. He said:

> Once you go play in Europe, because you're playing the best of the best… you put them all in one group, and they're training all the time. This isn't just training two hours a day. This is a job. You're training four hours a day, six hours a day, with the most competitive players in the world. That's the stage that you have to make it to, then Paralympics become easy.

At the Paralympic level, participants described a shift in how they understood their disability and athletic identity. Competing alongside other elite athletes with disabilities fostered a sense of belonging and recognition that was often absent earlier in the pipeline. Henry described how competing at the Paralympic Games allowed him to reframe his understanding of disability, explaining that "to know that there are individuals with the same disability, and different types of disabilities, competing at such high levels allowed me to gain so much more respect for everybody else, and to be more proud of my disability." This stage was also described as a moment of validation in elite sport. Josh emphasized that the significance of Paralympic participation extended beyond medals or financial rewards and stated: "We want to be seen as athletes…No amount of money can buy me that." He further elaborated on this athletic career and explained: "I mean, wheelchair basketball, like I said, it gave me literally everything. A wife, a whole life, everything. There's no moment bigger than that".

While many participants described the Paralympic stage as the pinnacle of their athletic identity, others emphasized how quickly access to this level could be lost due to decisions beyond their control. Classification changes and event restructuring were identified as factors that could abruptly end an athlete's competitive career, even when performance remained strong. Emma explained the uncertainty surrounding her continued participation:

> I kind of knew at that point that I was going to be retiring. And not because I wanted to, but because the events in my classification were disappearing. I didn't know if by the next Games I would even have any events to swim in.

Some participants noted positive changes in how para-athletes were supported over time. In reflecting on experiences across multiple Paralympic cycles, participants described differences between earlier periods of preparation and more recent Games, particularly in terms of resources and recognition. Dylan discussed his experiences while preparing for the 2012 Paralympic Games with later preparation cycles. He explained that earlier participation was largely focused on "just doing it to represent your country and to play the sport that you love," whereas "by 2020, that was completely different," noting that para-athletes were "treated the same way as every Olympic athlete".

Summary

The Paralympic-level competition stage represented the highest and most symbolically significant point in the U.S. Paralympic pipeline. Participants described this stage as the culmination of long-term development. Competing at the Paralympic Games was consistently associated with national representation and a deep sense of accomplishment that extended beyond athletic outcomes alone. Participants also described meaningful shifts in how they understood their disability and athletic identity at this stage. Competing alongside other elite athletes with disabilities fostered a sense of belonging and normalization that had often been absent earlier in the pipeline.

In addition, participants reflected on changes over time in how para-athletes were supported at the Paralympic level. Comparisons across Paralympic cycles highlighted notable improvements in resources and recognition, with more recent Games described as evidence that para-sport "has come a long way" while also underscoring that "there is still a lot more to do".

Gaps and Transitions Across the U.S. Paralympic Pipeline

This section presents thematic findings of gaps and transition challenges between the stages of the U.S. Paralympic pipeline. The findings are organized through two primary themes: (a) access to opportunity and (b) capacity to advance. Each primary theme is supported by several secondary themes, which are discussed in detail below. See Figure 3 for a visual summary of primary and secondary level themes.

Access to Opportunity

This primary theme, access to opportunity, reflects the conditions that influenced how and when participants discovered parasport and entered the Paralympic pipeline. Three secondary themes illustrate this reality. First, entry barriers describe the logistical and emotional obstacles that hindered first attempts at participation, including transportation challenges and lack of local programs. Second, awareness highlights inconsistent exposure to adaptive sport opportunities and the reliance on word-of-mouth networks. Finally, accessibility reflects the environment and travel-related barriers that persisted at multiple stages of the pipeline.

Entry Barriers

Transportation emerged as a recurring challenge across multiple stages of the U.S. Paralympic pipeline, though it was most noticeable during the grassroots stage of development. Participants described how limited access to nearby programs and facilities often required traveling long distances which, in turn, created early barriers to consistent participation. For younger athletes in particular (regardless of the origin of disability), transportation needs heightened reliance on family members or other support networks.

Olivia explained: “There aren’t local programs for you to get to, so you’ve got to drive a while.” She further elaborated that "the closest track that I could use was 30 minutes away. I was in 6th grade, so I did not have a driver's license. And, finding someone that could help with that on a regular basis is a challenge”. Although transportation continued to affect athletes at later stages, these early logistical barriers often played a key role in determining whether athletes could enter and remain in the pipeline at all. Dylan also discussed transportation with a wheelchair in travel context and noted:

> It is not going to be particularly easy, especially traveling in airplanes every single time you get in the airplane. You never, ever know if your personal chair is going to be there, or your basketball chair, or if, like what happened to me 2 or 3 times in my career, your basketball chair comes out severely damaged. Oftentimes the point where you wouldn't even be able to play in it.

For participants who acquired their disability, entry into the Paralympic pipeline was often preceded by a significant personal transition. In particular, this period was described as a disruptive and emotionally complex experience that participants only fully understood later in life. Aaron noted:

> When you go blind, I didn’t realize it at the time, but it is a traumatic experience. As a kid, you don’t really understand what that word means. But as an adult, as a 32-year-old, I look back and go, wow, this was life-changing. And it got thrown at me all at once.

In addition, participants described a broader gap related to gaining entry into adaptive sports. For participants without access to a local program or a knowledgeable

guide, initial involvement was often unstructured and independent. Participants explained that they had to navigate the early stages largely on their own. Olivia articulated this experience as something you must navigate independently and stated: "If you are kind of doing this on your own, and don't have a local program, or somebody who has been through it, and knows, and is like, oh, here's a racing chair, this is how you send it out. Here's how you push it. Here's how you steer it. It's kind of like, it's horrible, and it feels like this whole other alien world, it's really difficult to get involved in".

Awareness

Participants described limited awareness of parasport opportunities as a recurring challenge. As mentioned in the grassroot programs section, entry into the pipeline was not the result of structured outreach or intentional recruitment but rather occurred through informal connections or chance encounters. As a result, awareness of available sports and pathways was uneven. Chris elaborated that many youths with visual impairments are simply unaware of parasport opportunities in the United States. He explained that "there's a lot of kids who are born with visual impairment that don't really know about judo," and described his own pathway as shaped by circumstance. He further emphasized that he was "very fortunate" to have met a coach with Paralympic experience. He also noted that without that connection, "it could have been a completely different story". Awareness gaps were echoed across disability types and sports. Aaron similarly attributed his Paralympic journey to one conversation that changed his life. He explained:

> I had word of mouth, 100%... She [orientation and mobility specialist] asked if I'd ever heard of Paralympics, and I, being a normal American, thought, "Oh, is that

like Special Olympics?" She said: "no, it is very different" and explained it to me… Fifteen years later, I got to call her and say, "because of you, I got to chase this huge dream. Next time I see you, I'd love you to hold my Paralympic medals."

Similar to Aaron's experience, Christina recalled that access largely depended on who you happened to know or meet. She summarized this stage by saying: "it's not less competitive, but it's just a smaller movement. It's a lot of word of mouth."

Beyond limited exposure to formal opportunities, awareness also emerged through recognition and self-identification. In the absence of clear guidance, participants mentioned that they learned about adaptive sports by observing others and evaluating whether they could envision themselves participating in a particular sport. Liam explained how he searched online for adaptive sports and assessed whether he might try different options. He stated:

> I looked at wheelchair basketball and thought, "I don't think I can play that, no one looks like me." I looked at wheelchair racing and thought it looked boring. Then I saw a video of wheelchair rugby, and I was like, 'wow, that's literally everything I used to be able to do, except in a wheelchair.' They were doing things doctors had told me I couldn't do anymore. I was fascinated, so I reached out to the [state name] wheelchair rugby club and asked when they practiced.

As participants progressed to more visible stages of the pipeline, awareness extended beyond the individual and began to influence broader perceptions of disability and athletic performance. For example, as Sarah began learning more about adaptive

sport opportunities, she also became aware of how limited understanding of disability sports was among those outside of it. She often found herself in situations where her participation became an informal point of education for others. Reflecting on this experience, she explained:

> They were just amazed that somebody in a wheelchair could do any sport, let alone fencing. So, he would have them and 'Well, ask her questions' and they would, and so I think it was a good learning tool for people that weren't disabled to see that people with disabilities can pretty much do whatever they want to do, if there be an opportunity to do it.

Similarly, participants described increased visibility at the elite level as an important point of awareness for others. Particularly, as it helped to challenge misconceptions about disability and sports. For some participants, reaching the Paralympic level created opportunities to educate those around them through lived example. Henry reflected on this shift and explained:

> For me to be able to shed light on myself and my disability, so when I did join the Paralympics, it was beautiful because they were then educated, like, "Oh, I know somebody that has a disability that competes at a very high level".

Accessibility

Participants also described accessibility challenges that persisted even within spaces designed for high-performance sports. Sarah reflected on this experience when describing time spent at the U.S. Olympic and Paralympic Training Center, she explained:

> At the Olympic and Paralympic Training Center in the U.S., you would think it would be really disability friendly, but it was not. I was in the furthest dorm from where we trained, and I'd have to go down this hill and up this big hill like this [hand gesture], pushing by myself. And then, when we were in the dorm, we had a community bathroom, and it was bad. They put a little ramp, super steep, in front of the bathroom door, but roll up it and then grab the door and pull it back. I couldn't go to the bathroom by itself. I hate to say that, but that's the reality of it. Some of the places in our training center are more difficult or challenging to get around.

Participants also highlighted how everyday logistics outside of sport created persistent barriers that able-bodied athletes rarely had to take into account. Travel and basic daily functioning required constant planning and negotiation. Dylan explained that accessibility challenges shaped every stage of the journey. He noted:

> The barriers are just what is going to be inherent to being in the wheelchair. There's the logistics of hotels being accessible, venues, even the restaurants…and bathrooms. But when you're dealing with a full-on (wheelchair) basketball team, you've got a lot of class ones and people that are pretty severely disabled. You've got to make sure that they're taken care of. And then there's also the hygiene aspect and making sure that people are able to do what they need to do from catheterization, or whatever their situation is on that. There's a lot to consider certainly more barriers than what an able-bodied team would have to deal with.

After describing the logistical barriers of travel, Dylan summarized the constant worry about protecting essential sport equipment: "I thought that the less time that I'm away from the chair the less time it could be damaged".

Capacity to Advance

This second primary theme, capacity to advance, reflects the uneven system of support that shaped participants' ability to progress once they entered the Paralympic pathway. Three secondary themes illustrate this reality. First, limited coaching points to the scarcity of trained coaches familiar with adaptive sports and disability. Second, isolation encompasses the prolonged periods in which participants trained by themselves. Finally, financial constraints underscore how progression relied on personal or family investment, even after reaching national teams.

Limited Coaching

One commonly identified gap across participants' narratives was the limited and often incidental access to knowledgeable coaches, particularly during early stages of development. Several participants described relying on chance encounters or family initiative to connect with individuals who had experience in adaptive sports. Lack of formalized coach development created uneven entry points into the pipeline, where progression depended less on system design and more on circumstance. Olivia's experience illustrates this gap clearly. Reflecting on her introduction to wheelchair racing, she explained how access to coaching emerged through a coincidence:

> I got lucky. There were only a few tracks close to my parents' house that weren't gravel. My dad took me out to a track one night just to check it out. And there

> happened to be a woman there who mentioned that there was a wheelchair racer from the early 90s that lived down the street. She gave my dad his contact information, and my dad called her and asked if she would coach, and she said, "sure".

Similarly, Mel discussed her experience of finding a coach through a personal connection. She stated:

> Honestly, it was pure luck. My husband happened to meet someone at a bike shop near the university, and that's how I found my coach. He hadn't coached para-athletes before, but he was young, analytical, and willing to learn. He used the science he knew from able-bodied cycling and adapted it for me.

Isolation

The Paralympic journey was often described as isolating, particularly during transitions between stages when formal support structures were limited or absent. Participants described extended periods of training outside organized programs which required them to sustain their development independently. Emma reflected on this aspect of her pathway, she mentioned: "I practiced by myself, throughout my entire career to the day that I retired". Christina had a similar experience and mentioned racing against herself for many years of her athletic career. Most of the time, she was the only athlete with a disability in the local swimming pool. She stated:

> It's the isolation of not having other people that are like you… you're racing yourself. It is just a lot of one-on-one competition...I was swimming 60-hour weeks… the toughest part was kind of missing out on normal high school

> experiences… like, I was in bed by 9pm, up at 4am for practice. That was my world. But it's fun. I mean, it's hard as hell... But it's really cool to be a part of something that's so much bigger than you. I'm competitive, I enjoy winning, so I think that helped.

Several participants described feeling isolated from their family and partners. Loneliness of training and competing was combined with physical distance from home and the emotional weight of separation from loved ones. Mel reflected on returning to elite competition after becoming a parent. She stated:

> I had my daughter and my husband when we made the decision for me to go back into Paralympic sport, we knew it was going to be a sacrifice on the family… I would be traveling a lot more. My husband would be Mr. Mom, home alone… taking care of my daughter. She was 3 years old when I won my medal in London… I hadn't seen her for about 2 weeks.

She then pointed to one specific moment that captured what the sacrifice meant: "I look out there when I'm on the podium, and I see her [daughter] up on her dad's shoulders, and just seeing her made me realize the impact… me having my dreams and goals…and being able to accomplish that can impact and shape next generation and other people, it is really became personal".

To conclude, isolation was a difficult part of moving through the Paralympic pathway including training alone, not having teammates, or managing family life while competing. Participants described long periods of time where they had to push forward mostly on their own.

Financial Constraints

Participants further described how financial limitations affected their lived experiences and broader perceptions of parasport. Even while competing at the national team level, participants encountered assumptions that their athletic career was more recreational. Reflecting on this tension, Lauren recalled:

> When I was competing, I would go to events. For example, I'd go to something with the USOPC and these wealthy people that were in attendance, because it's a fundraiser or something, they would always ask me, "well, what do you do?" And I'd always think, "what do you mean, what do I do? I'm here because I'm a professional athlete." But in people's minds, they can't wrap their head around that. I think they still think Olympians and Paralympians; that's not a full-time job. But if you want to be the best and win, then it is a full-time job.

Chris extended this reflection to point out similar misconceptions about less popular sports. He explained: "From a standpoint of an American, judo is not seen as a career… there's no money in judo...the problem is, in other countries, they're [para-athletes] getting paid like professional athletes by the government, but Team USA (USOPC) is a non-profit". As a result, financial barriers were layered with cultural beliefs about what sport "counts" as a profession.

Participants also acknowledged that national governing bodies in Paralympic sports operate within significant financial limitations; however, many emphasized that existing funding structures were insufficient to support the realities of elite training and competition. Across multiple narratives (Sarah, Lauren, Olivia, Amelia, Aaron, Christina,

Mel, and Ava), participants described ongoing financial challenges and pointed to gaps between institutional support and the demands of high-performance sport, noting that "there's still room for improvement" particularly in relation to athlete stipends.

Chapter Summary

To contextualize the participants' experiences, this chapter began with narrative introduction of each participant which included their primary sport, disability origin (congenital or acquired), and a brief explanation on how they were introduced to adaptive sports. These narrative introductions situated participants' stories within their broader life and Paralympic sport trajectories to highlight similarities and differences across the participants.

The chapter then presented the findings of the data analysis which was organized into two sections. The first section outlines the five stages of the Paralympic pipeline: grassroots participation, high school sport involvement, collegiate experience, national team participation, and Paralympic-level competition. Each stage was described in detail and participant narratives were used to illustrate lived experiences at each stage of the U.S. Paralympic pipeline. In addition to the stages of the pipeline, the second section of the chapter presented gaps and transitions that influenced athlete development across the five stages. The section included two primary themes: access to opportunity and capacity to advance along with several secondary themes. The findings demonstrated that progression through the pipeline was often contingent on personal networks and family support. Transitions between stages, particularly from high school to college and from

college to national team participation, were identified as periods of heightened vulnerability due to shifting performance standards and uneven access to support.

Across the stages of the U.S. Paralympic pipeline, participants' pathways were influenced in part by whether their disability was congenital or acquired, as well as by the timing of impairment relative to sport involvement. Athletes with congenital disabilities often described early sport experiences within able-bodied or inclusive settings, with adaptive sport opportunities becoming visible later in adolescence or early adulthood. In contrast, participants with acquired disabilities, if acquired disability after adolescence, frequently encountered adaptive sport through rehabilitation settings following injury or illness. Sport was positioned as a part of recovery and identity reconstruction processes. Overall, these differences influenced when and how athletes entered the pipeline.

Additionally, participants described variability in how their disability was recognized. Later stages of the pipeline were associated with increased visibility and formal recognition as elite athletes; however, earlier stages were often characterized with limited information and informal entry points. At the highest levels, competition at the Paralympic Games was framed as a culmination of athletic development and a moment of affirmation of participants' athletic identity.

The final chapter of this dissertation will present a discussion of the study in relation to academic scholarship on athlete development, adaptive sports, Paralympic movement, athletic identity and disability studies. It will then address the study's limitations, implications for practice, recommendations for future research, and a concluding section.

CHAPTER FIVE

DISCUSSION, IMPLICATIONS, AND CONCLUSION

This doctoral dissertation explored the developmental pathways of retired Paralympians from the United States and examined how para-athletes experienced progression through the U.S. Paralympic pipeline. Seventeen retired para-athletes who competed in the Paralympic Games between 2012 and 2024 and represented both congenital and acquired disability types, shared their stories of transitioning through and ultimately competing at the highest level of international sport, the Paralympic Games. A narrative interview guide was developed, and participants engaged in two-phase narrative interviews following Kim's (2016) recommendations. The data analysis process involved two phases. The first phase involved Labovian structural analysis (Labov, 1972), and the second phase employed narrative thematic analysis (Riessman, 2008). Two sets of findings emerged. Specifically, five developmental stages of the U.S. Paralympic pipeline were identified: (a) grassroots programs, (b) high school sport involvement, (c) collegiate experience, (d) national team, and (e) Paralympic-level competition. The second set of findings examined the gaps and transitions between these stages, revealing two primary themes: access to opportunity (reflected through entry barriers, accessibility, and awareness) and capacity to advance (including limited coaching support, isolation, and financial constraints). The knowledge gained from this study contributes to the growing body of literature of athlete development and experiences in Paralympic sports. This dissertation highlighted retired para-athletes' perspectives across the full developmental journey.

Discussion

The discussion chapter is organized around the two research questions that guided this study. Research Question 1 examined how retired para-athletes experienced the developmental pathway toward the Paralympic Games. Based on participants' narratives, this section situates the five stages identified in the findings: (a) grassroots programs, (b) high school sport involvement, (c) collegiate experience, (d) national team participation, and (e) Paralympic competition within existing literature on athlete development. In addition, two primary themes emerged during data analysis: (a) access to opportunity and (b) capacity to advance, as participants described their transitions between the stages. Access to opportunity consists of the following secondary themes: entry barriers, awareness, accessibility, while capacity to advance entails limited coaching, isolation, and financial constraints. Furthermore, the findings are discussed in relation to the American Development Model (ADM) and the Social Ecological Model (SEM). Research Question 2 focused on how these experiences differ based on whether disabilities are congenital or acquired. Across both research questions, the chapter discusses current gaps in para-athlete development and provides practical implications for strengthening the U.S. Paralympic pipeline. The chapter concludes with the study's limitations, recommendations for future research, and final conclusions.

Research Question 1

Recent studies have recognized the need to explore the development of para-athletes (Dehghansai et al., 2022; Patatas et al., 2021; Whaley, 2024); however, empirical work examining the lived experiences of para-athletes across the full Paralympic pathway

remains limited. This dissertation directly responded to that gap by exploring how retired para-athletes navigated the U.S. Paralympic pipeline. The first research question asked: How do retired para-athletes experience the developmental pathway toward the Paralympic Games? The intent of this question was to understand how participants described the key stages and transitions that shaped their athletic journeys.

Participants in this study described the developmental pathway toward the Paralympic Games as non-linear and contingent upon circumstances. Participants commonly narrated their journeys using term "luck" and highlighted the importance of being in the right place at the right time. Across narratives, entry into sport occurred without formal talent identification procedures. Moreover, the advancement in the pipeline depended on a combination of personal motivation, supportive relationships, and access to geographically available resources. Participants' experiences revealed that earlier stages of the U.S. Paralympic pipeline tended to be informal and unpredictable. However, their later experiences suggest a gradual shift toward more defined developmental pathways. Additionally, participants who first competed in the 2012 Paralympic Games described a pathway that felt improvised, individualized, and largely dependent on personal initiative. In contrast, those competing in 2024 Paralympics noted increased access to resources and structured training opportunities which reflected gradual system development over the past decade.

Several participants noted various levels of institutional support, particularly in comparison to athlete development found in able-bodied sports. These findings support and expand observations of Patatas and colleagues (2021), who argue that para-athlete

development diverges fundamentally from able-bodied sports due to the presence of disability-specific factors.

Participants in this study, especially those who were involved in the collegiate level competitions, mentioned several disparities regarding allocated resources for athletes with and without disabilities. Limited funding opportunities and gear were commonly discussed by the participants as they reflected on college years. This study also supports the complexity outlined by Pinder and colleagues (2022), who describe parasport pathways as unpredictable and varied. Although, participants in this study advanced through multiple levels such as community-based grassroots programs, high school teams, collegiate training groups, national team camps, and ultimately international competition. It is important to note that progression through these stages was often uneven and required support.

Both Labovian analysis and narrative thematic analysis revealed multiple barriers to participation in adaptive sports. Existing research identifies a wide range of challenges that athletes with disabilities face when attempting to initiate or sustain participation, including limited awareness of programs, inaccessible facilities, and financial demands (Ballas et al., 2022; Jaarsma et al., 2014; Lape, 2018; Orr et al., 2020). The experiences of retired para-athletes in this study illustrate how these barriers accumulate over time and interact with an athlete's age and surrounding environment. For many, these challenges were not one-time obstacles but recurring conditions they encountered throughout their development. One of the strongest findings of this study relates to the structural and geographic inconsistencies that shaped access to early sport involvement.

Consistent with McLoughlin et al. (2017), many participants described early entry into parasport as a matter of chance; finding a program, meeting a coach, fundraising, or encountering a mentor who recognized their potential. When accessible programs or coaches were present in their region, participants progressed naturally from recreational experiences to competitive opportunities. Where programs were absent, participants reported delayed entry or reliance on family initiative to identify options. These results align with Moran and colleagues' (2017) assertion that lack of programs and limited coach expertise remain controllable but still persistent barriers within adaptive sports. Findings of this study confirmed that these barriers continue to restrict who enters the Paralympic pipeline and when, especially for para-athletes living outside major metropolitan areas.

Participants repeatedly highlighted financial limitations as another factor shaping their experiences in the U.S. Paralympic pipeline. Similar to findings from Coates and Howe (2023), participants in this study emphasized that families played a key role in sustaining athlete development. In many cases, families covered the majority of costs, including travel expenses, equipment purchases, program fees, and, at times, organizing informal fundraising events to help offset expenses. Participants described how parents frequently traveled with them to qualifying competitions and often provided logistical support when coaches could not attend. For some participants, it was simply them and their family members navigating traveling and competition which demonstrates how family commitment functioned as a foundational element of athlete development. This was especially evident for participants with congenital impairments and those who

acquired their disability at a young age as their family's supported involvement in sport from early childhood.

Consistent with literature, knowledge gaps and lack of awareness function as structural barriers in athlete development (Pate et al., 2023; Whaley et al., 2023). Several participants reported that neither they nor their families had ever heard of the Paralympics before they encountered disability. These findings highlight the consequences of what Pitts et al. (2022) identify as a systemic failure to integrate disability sports into sport management or coaching education.

Lundberg et al. (2011) found that participation in sport with able-bodied athletes can enhance feelings of equality among individuals with disabilities. In their study, the authors examined adaptive sports programs and found that individuals with disabilities felt socially equal when involved in sport alongside able-bodied peers, which contributed to improved self-concept and confidence. Participants in the current study echoed these experiences. Several described integrated training environments, particularly at youth and high school levels where teammates treated them "just like everyone else" which reinforced their identity as athletes first rather than as individuals defined by impairment. At the same time, others followed a different trajectory. Several participants noted that inclusivity sometimes felt dependent on the attitudes and awareness of able-bodied teammates, which meant that integration could quickly shift from supportive to uneasy.

Social Ecological Model (SEM)

The findings of this study illustrate how para-athletes' experiences are influenced by an ongoing interaction across multiple ecological layers. This aligns with

Bronfenbrenner's (1994) claim that human development reflects "reciprocal interaction" (p. 38) between the individual and their environment over time. Specifically, the experiences described by participants reflect the cumulative influence of individual, interpersonal, organizational, community, and policy levels which confirm the value of the SEM in understanding developmental pathways in Paralympic sports.

At the individual level, findings aligned with the literature on SEM and demonstrated that internal factors shape engagement in sport (Iso-Ahola, 1995; Terry, 2014). As participants often mentioned: love of movement, passion for competition, desire for independence, and evolving athletic identity. Congenital disabilities often enabled gradual identity development through childhood sport involvement, whereas athletes with later acquired disabilities described periods of physical and emotional rebuilding before entering sport. Importantly, several participants described changes in how they understood their disability once competing at the Paralympic level and receiving recognition for their athletic achievement. As Henry noted, being acknowledged for his performance helped him become "more proud of my disability."

The interpersonal level emerged as the most consistently influential factor across the pipeline. Consistent with Moran et al. (2017) and McLoughlin et al. (2017), participants in this study highlighted: family investment in travel and emotional support; parents acting as informal coaches; peers and teammates as belonging and confidence builders; and the essential role of individual coaches who "took a chance" or encouraged athletes into new roles. Importantly, many participants had no formal coaching early on which required them to self-train or rely on non-adaptive sport coaches. This aligns with

existing scholarship on the scarcity of trained adaptive sport professionals (Kim et al., 2025). Interpersonally, the findings strongly support SEM's assumption that close relationships either facilitate progress or close pathways altogether.

At the organizational level, participants described presence or absence of adaptive sport teams as one of key factors that determined their further progression in the pipeline. Among the eight sports that participants represented, wheelchair basketball had one of the few fully structured college sport pipelines. Whereas participants in other sports described relying on clubs or independent training rather than university programs. These findings align with prior scholarship which documented the limited and uneven availability of collegiate adaptive sport opportunities (Whaley, 2024; McCarty et al., 2023).

Community aspect was very prominent among participants' narratives. At this level, participants described how relationships and communication between schools, rehabilitation hospitals, community recreation centers, and nonprofit sport organizations determined whether opportunities were available. Therefore, community-level networks, not centralized systems, currently act as the primary entry into adaptive sport in the United States. This affirms SEM's claim that the community layer functions as main transition between individuals and institutions. It also reveals unequal access depending on how well (or whether) community organizations coordinate and collaborate.

The policy level includes international, federal, state, and local regulations that influence para-athlete development (Salihu et al., 2015). This is a particularly important layer in this study given that participants competed across different Paralympic cycles.

The U.S. Paralympics division was formally established in 2001 (Batts & Andrews, 2011). Participants who competed in the 2012 Paralympics and Games prior that described navigating the early years of this restructuring. Their stories highlighted limited funding and slow formalization of athlete support. In contrast, participants preparing for Tokyo 2020 or Paris 2024 spoke about a different policy landscape, including the adoption of equal medal payouts for Paralympic and Olympic athletes, a reform not available to early-cycle participants. For many participants, when they entered the pipeline mattered as much as how they progressed through it.

Dehghansai and colleagues (2017b) compared the developmental pathways of wheelchair and able-bodied basketball players to determine whether Paralympic athletes progress through the sport system in the same way as their able-bodied peers. Able-bodied athletes tended to reach early milestones sooner, while athletes with congenital disabilities progressed more gradually but reached similar markers by mid-career. Interestingly, athletes with acquired disabilities often entered the system later but still achieved national and international milestones at comparable ages. As the authors pointed out, these diverse trajectories signal gaps in the way current athlete development models represent Paralympic progression (Dehghansai et al., 2017b). Similar patterns emerged in this study when participants were navigating their progression through the developmental pathway. The following section evaluates the findings in relation to the American Development Model.

Americal Development Model (ADM)

The American Development Model provides a five-stage framework intended to guide long-term athlete development in the United States (USOPC, n.d.). Although initially the ADM was created for able-bodied sports, its stages have been adapted to acknowledge disability-specific considerations (Martel, 2015; USOPC, n.d.). However, findings from this study show that while elements of ADM were visible within the participant narratives, para-athlete development in the United States rarely followed the structured or sequential pathway.

Participants' stories demonstrated experiences that paralleled several core ADM transitions. Grassroots programs (ADM Stage 1) aligned with the Discover, Learn, and Play component, where participants first encountered parasport through community-based adaptive sports programs, rehabilitation programs based at hospitals, or inclusive opportunities within able-bodied local sport clubs. High school involvement (ADM Stage 2) reflected growing skill development and early informal competition, particularly among participants who played wheelchair basketball or competed in community track teams. Collegiate experience (ADM Stage 3-4) corresponded to increasing specialization and intensified training. Participants described relocating to universities with adaptive sport teams, joining national development camps, and receiving competent coaching which reflects the ADM's emphasis on structured development opportunities leading to high performance. These examples demonstrate that while ADM's structure appears applicable to para-athlete development, it only aligned when opportunities existed.

Evidence of alignment tended to be strongest for participants embedded within formally structured adaptive sport for certain sports.

While elements of the American Development Model were visible within participants' narratives, their pathways diverged from ADM's intended developmental sequence. The most notable differences stemmed from disparities in access, delayed or disrupted entry, disability timing, and uneven resource distribution. More structured progression started once participants qualified to represent the national team. First of all, the ADM assumes that youth can move from Stage 1 through Stage 5 because developmental opportunities exist. In contrast, participants in this study experienced a different landscape where not all developmental stages were available in their communities; movement between stages relied on chance encounters, geographic location, or family resources. Although the ADM does acknowledge that contextual factors such as geographical location and resource availability may shape access, the model does not offer guidance on how athletes facing those barriers might still navigate between stages. Second, the ADM's sequencing presumes discovery, gradual skill development, and eventual specialization. However, participants' narratives reflected pathways that did not always follow this order. For example, some entered sport after adolescence or adulthood; bypassed ADM Stage 1 and 2 altogether; jumped directly into competitions (Stage 4) or rapidly ascended to national team. Several participants first encountered parasport only after rehabilitation which posits an additional layer of complexity. Thus, these experiences sit outside the ADM framework, as it does not account for injury-related disruption or late-life sport discovery.

Third, the ADM stated that athlete support, developmentally appropriate coaching and accessible facilities, increases as athletes move from Stage 3 (Train and Compete) to Stage 4 (Excel for High Performance or Participate and Succeed). Moreover, coaches and sport administrators must be properly trained to help athletes with disabilities as they navigate their athletic journey. However, participants described: minimal access to adaptive sport coaching until reaching national team and uneven access to competition. Thus, ADM Stage 4's description was only accurate at the national team and Paralympic level, with a few sport-depended exceptions at the collegiate level (wheelchair basketball and wheelchair track). Finally, the ADM explains Stage 5 (Thrive and Mentor) as a late-career phase in which athletes stay active, mentor others, and give back to sport. Interestingly, participants reported assuming mentoring roles long before retirement. For some, this stage served as a transition between Paralympic cycles.

Overall, these findings demonstrate that ADM provides a useful conceptual foundation and ensures inclusion for athletes with disabilities but does not fully represent para-athlete pathways as they developed in the United States. If ADM is to guide parasport development, it may require systematic intervention at early developmental stages, explicit adaptations based on disability origin and timing, policies that reduce reliance on family finances and geographic location, and continued collaboration between community sport organizations, high school teams, coaches, collegiate sport, and educators in sport-related academic fields.

Research Question 2

The second research question guiding this study was: In what ways do these experiences differ based on whether disabilities are congenital or acquired? As Patatas et al. (2021) noted, athletes with disabilities follow a multi-dimensional developmental pathway, one that develops through and depends on many interacting factors rather than in a standardized sequence of stages. Findings from this study strongly reinforce that argument. Participants' narratives revealed that the origin of disability played an important role in shaping para-athletes' developmental pathways in Summer Paralympic sports. While congenital or acquired disability influenced early motivations and exposure to sport, origin alone did not determine the trajectory. Instead, the timing of disability, particularly when impairments were acquired, directly influenced how, and when, participants discovered parasport, entered and continued through the pipeline.

For participants with congenital disabilities, early exposure was often facilitated through school, rehabilitation networks, or family connections to community-based adaptive programs. These programs allowed participants to explore multiple sports and develop foundational skills. Interestingly, participants who acquired disabilities often shared a similar developmental pattern, particularly those who sustain their injuries or diseases during or before adolescence. Many had already identified as athletes prior to injury, and their transition into parasport leveraged existing sport identities and competitive drive. However, participants who acquired disabilities later in life (around their twenties) described a markedly different trajectory. They frequently entered parasport after a period of physical rehabilitation and emotional adjustment, and their

progression relied heavily on individual initiative. Because they were older, they were obligated to manage additional responsibilities of being adults. Participants reported needing to seek information independently, manage work or family responsibilities alongside training, and actively search for coaches or programs. Ultimately, these conditions created a more isolated and self-directed entry into the pipeline.

Participants' narratives highlighted additional factors that impacted their development through the U.S. Paralympic pipeline. Geographical location was cited repeatedly as a determining factor. Athletes who lived near established adaptive sport opportunities or collegiate sport clubs were able to access coaching and equipment more readily. However, participants who lived in rural areas had to relocate or commute long distances which often required relying on others. Family involvement emerged as another critical determinant. Several participants reported that emotional encouragement, which included parents who believed in the athlete’s potential, was essential to early sport participation. Others emphasized financial support and noted that consistent access to transportation and specialized equipment was only feasible because family members contributed by providing significant financial resources.

Findings from this study also intersect with emerging work on athletic identity in parasport (Rougeau et al., 2025). Rougeau and colleagues (2025) examined whether athletes with congenital and acquired disabilities differed in their strength of athletic identity. The author’s hypothesis was that individuals who sustained impairments later in life might struggle to adopt or sustain an athletic identity due to the psychological transition associated with injury. Notably, their findings did not support this assumption;

athletic identity did not vary significantly between congenital and acquired groups. Instead, athletic identity appeared to decrease with age and with time lived after an acquired disability.

Participants in this dissertation provide complementary but more nuanced understanding to those conclusions. Similar to the participants in Rougeau et al.'s (2025) study, many participants of the current study (whether born with disabilities or acquiring them later) described defining themselves as athletes first and foremost once they fully engaged in sport. Several participants emphasized that the moment they were recognized in sport (e.g., selected to a collegiate team, receiving national team gear) solidified their athletic identity in ways that transcended impairment origin. Consistent with Rougeau et al.'s (2025) findings, this indicates that athletic participation and recognition may be more consequential for identity formation than the origin of impairment itself. In other words, identity seems to be shaped through doing sport and being seen as an athlete, not by when or how disability occurred.

Scholars who focus on disability identity emphasize that identity formation is shaped by the social environment in which disability is experienced (Gilson & DePoy, 2004; Forber-Pratt et al., 2017). In line with Dunn and Burcaw's (2013) claim that disability identity evolves in relation to community and environment, participants' narratives reflected identity negotiation and reconstruction over time. Participants who acquired their disability described acute disruption to self-concept followed by a gradual rebuilding process. For example, Aaron, who lost his sight in childhood explained,

When you go blind, I didn't realize it at the time, but it is a traumatic experience… as a kid, you don't really understand what that word means. But as an adult, as a 32-year-old, I look back and go, wow, this was life-changing. And it got thrown at me all at once.

Thus, consistent with longstanding theories, acquiring a disability involves identity reconstruction and negotiation (Charmaz, 1995; Frank, 1993).

Limitations

This study had several limitations that should be acknowledged. First, the purpose of this research was to explore the experiences of retired para-athletes within the U.S. Paralympic pipeline. As such, the findings reflect the perspectives of the individuals who participated and should not be assumed to represent all Paralympic athletes. Moreover, this dissertation focused exclusively on para-athletes from the United States. The structure of the Paralympic pathway and funding systems vary considerably across nations, for example, USOPC operates as a non-profit corporation. Therefore findings may not apply directly to para-athletes in other countries where government support and sport cultures differ.

Another limitation relates to the diversity of sports represented. Although seventeen participants who competed in eight Summer Paralympic sports took part in the study, representation across sports was uneven. For several sports such as para fencing, wheelchair rugby, para-cycling, and Paralympic soccer, only one para-athlete participated, while others (e.g., wheelchair basketball, para swimming, para track and field, para judo) were represented by multiple participants. This uneven distribution

matters because sport-specific pathways differ substantially. Consequently, patterns observed among participants in more resourced sports may not fully reflect the realities of participants in sports with smaller or less organized structures.

Recruitment strategies also shaped who was able to participate in this study. Narratives were gathered from individuals who responded to invitations distributed via social media, professional networks, and organizational contacts. Retired para-athletes who are less connected to digital platforms or no longer active in Paralympic spaces may not have encountered recruitment materials. Additionally, the use of purposeful and snowball sampling may have introduced bias. Because participants recommended others from their own networks, the snowball sampling approach may have unintentionally limited the range of voices included. While this method was effective for reaching a hard-to-access population, para-athletes with more negative or divergent experiences may not have been represented.

Finally, reliance on participants' memories of earlier stages introduces a retrospective limitation to the narratives. Participants were asked to recall experiences that, for many, occurred years or even decades earlier. While retrospective reflection provides valuable insights into understanding participants' experiences, it also introduces the possibility that some details were forgotten or condensed.

Practical Implications

The findings from this study offer several practical implications for stakeholders involved in athlete development across the U.S. Paralympic pipeline, including national governing bodies, community adaptive sports programs, higher education, coaches, and

rehabilitation professionals. Although this dissertation focused on retired para-athletes, the insights extend to current and future para-athletes. Practical implications revealed from the findings are listed below.

- **Strengthen grassroots entry and early exposure to adaptive sports.**

  Participants repeatedly emphasized that initial entry into parasport was contingent on being found. This underscores the need for outreach beyond established programs which can be achieved through partnerships with rehabilitation hospitals, pediatric clinics, school districts, sport organizations, and disability organizations.

  Participants also identified rehabilitation professionals as potential points of connection to adaptive sport opportunities. Occupational and recreational therapists frequently interact with individuals with disabilities and their families in clinical and rehabilitation settings, where sport may be introduced as a form of physical activity and social participation. Therefore, strengthening collaboration between rehabilitation providers and adaptive sport organizations, as well as providing rehabilitation professionals with information about local programs, may increase awareness of available opportunities and support entry into the pipeline.

  Another important element of outreach could involve family engagement. Family members acted as the primary support for children and adolescents, particularly those with congenital disabilities and who acquired disability at a young age. USOPC and NGBs could invest in educational parent-focused digital resources and starter guides. Furthermore, participants noted they “didn’t know

what existed" which indicates a need for a centralized and frequently updated resource. One potential strategy would involve developing national visibility portals for Paralympic sports that allow individuals and families to identify adaptive sport opportunities based on geographic region and sports available.

- **Support adaptive sport participation in K-12 education.**

Findings from this study indicated that participants' progression during the high school years was often highly dependent on the knowledge and support of physical education (PE) teachers regarding adaptive sport opportunities. Therefore, K-12 schools may represent a critical step for introducing and supporting adaptive sport participation. Particularly, the integration of adaptive sport activities into physical education curricula may expose all students to inclusive sport practices and help students with disabilities become aware of available pathways in parasport. In addition, educators could benefit from professional development opportunities that increase their familiarity with adaptive sports which, in turn, may strengthen their ability to guide students toward parasport opportunities.

Efforts to expand adaptive sport opportunities in K-12 education may also reflect broader policy commitments. In the U.S. Department of Education's Dear Colleague Letter (2013), public schools were called to provide equal access to athletic opportunities for students with disabilities. Thus, greater exposure to adaptive sport within K-12 education may support the growth of the Paralympic pipeline and efforts to promote equitable sport participation.

- **Expand adaptive programming at universities.**

  Collegiate opportunities remained scarce for athletes with disabilities, with only selected sports providing programs that influenced movement toward elite competition. As a result, universities may consider expanding institutional support for adaptive sports. For example, athletic departments and campus recreation programs may explore transitioning adaptive teams into athletic departments and connecting able-bodied peers with adaptive athletes. Universities may also support para-athlete development through increased intramural and club sport opportunities that are open to a broader population of students.

  In addition to expanding participation opportunities, universities may also play an important role in developing professionals who contribute to adaptive sport development. Participants noted that they sometimes entered the athlete development pipeline before working with coaches who had formal training in adaptive sport. One potential solution may involve integration of parasport-focused modules within sport management, kinesiology, sport studies, and coaching education programs.

- **Reduce financial barriers across the Paralympic pipeline.**

  The study revealed that family financial contributions such as equipment costs, travel, hotels, and fees were foundational to athlete progression. Participants noted that some grants existed through foundations and local programs; however, such opportunities were limited and inconsistently accessible across sports and regions. One practical implication to reducing financial

constraints may be the development of travel and equipment microgrant programs at the earliest stages. In addition, sport organizations, community programs, and national governing bodies could establish loan or rental equipment systems for wheelchairs, racing frames, prosthetics, and other specialized equipment necessary for participation.

At more advanced stages of the pipeline (e.g., national team, Paralympic-level competition), para-athletes may also benefit from educational resources related to personal branding and sponsorship development. Participants across both earlier and later Paralympic cycles noted that navigating sponsorship opportunities often required considerable personal initiative and informal learning. Focused workshops or seminars on sponsorship acquisition, social media storytelling, and athlete branding, potentially organized through Team USA programs, could help para-athletes better access corporate partnerships and reduce long-term financial constraints.

Recommendations for Future Research

This doctoral dissertation represents one of the first comprehensive qualitative studies to explore athlete development in Paralympic sports and provides a foundation for future research. There are multiple approaches that scholars can pursue to gain a better understanding of para-athlete pathways. First, future research should narrow its scope to examine specific stages of participation and the lived experiences associated with each. For example, examinations of athletes with disabilities who compete at the collegiate level or national team level could provide more nuanced understanding of that specific

stage. Research could be strengthened through partnerships with Team USA training centers, Lakeshore Foundation, Move United member organizations, or national governing bodies that oversee specific sports. In addition, it may be beneficial to explore perspectives of individuals who engaged in grassroots or recreational adaptive sports as they may offer insight into early entry points and barriers that restrict progression. Importantly, studies should also capture the experiences of para-athletes who exit the pathway prior to the national team level in order to understand what enables participation and what prevents long-term development.

Second, the role of families requires systematic scholarly inquiry. This dissertation highlighted the extent to which family members substituted for formal structures by funding early participation and managing logistics. Research that directly examines parents or other family members' experiences may clarify the pressures placed on households, as well as differential impacts for families with limited resources.

Third, given the inconsistent structure of collegiate involvement, future studies should examine adaptive sport in higher education more intentionally. Inquiry focused on varsity and club programs could evaluate how institutional policies shape advancement into elite parasport.

Fourth, additional research is needed to explore timing and origin of disability more deeply. Although this study revealed distinct pathways between athletes with congenital and acquired impairment, further work should investigate identity development and motivation, with attention to impairments of different types and ages. Comparative studies across Paralympic sports, especially those with strong collegiate

pipelines versus those with limited structures, may further distinguish pathway contingencies. Moreover, although classification was not a central focus in this dissertation, participants consistently described it as central to their athletic experience and development. Future work should examine classification uncertainty as psychological phenomenon. Studies may investigate how rule changes affect training planning and how athletes navigate the emotional risk of disqualification or event removal. Research that captures the perspectives of classifiers, coaches, and policy administrators would be especially useful in understanding classification system.

Finally, future scholars may benefit from research that takes a system-level approach to parasport development. Mixed-method studies could assess community partnerships and high-performance training centers which can help identify nuances in structures and expand access to developmental opportunities. A national survey of adaptive sport organizations would provide valuable insight into where and why opportunities are concentrated or absent. Research involving athletes and families could be particularly impactful in regions without established programs.

Conclusion

This study contributes to the literature on athlete development in parasport and identifies stages, gaps, and transitions that exist within the U.S. Paralympic pipeline. Previous literature highlighted the significance of classification (Patatas et al., 2021), early exposure (McLoughlin et al., 2017), intercollegiate sport disparities (McCarty et al., 2023), and identity formation in parasport (Rougeau et al., 2025; Guerrero & Martin, 2018). Additional research has demonstrated that para-athlete trajectories differ from

able-bodied pathways (Dehghansai et al., 2017b; 2020; 2022). Building on those foundations, this dissertation examined the lived experiences of retired para-athletes in the U.S. Paralympic pipeline. Participants' stories revealed the formal and informal structures that guided their development, as well as the barriers and transitions embedded within each stage of the pathway.

In particular, analysis of the participants' narratives revealed five stages of the U.S. Paralympic pipeline: grassroots programs, high school sport involvement, collegiate experience, national team, and Paralympic-level competition; and two overarching themes that shaped movement across the stages: access to opportunity and capacity to advance. Access to opportunity theme was reflected by entry barriers, accessibility, and awareness; capacity to advance theme consisted of limited coaching support, isolation, and financial constraints. While the identified stages resemble contextual foundation of the American Development Model (USOPC, n.d.), participants lived experiences demonstrated that progression was rarely linear or equitably available. Instead, the advancement occurred through a complex interplay of opportunity, geography, family resources, community, and sport-specific factors.

Ultimately, strengthening the U.S. Paralympic pipeline requires coordinated efforts at multiple levels such as schools, universities, community clubs, sport organizations, rehabilitation hospitals, national governing bodies, and policymakers to ensure that access, coaching, facilities, and financial supports do not remain opportunities that depend on luck or location. As the visibility of the Paralympic Movement continues to expand, so will the responsibility to create systems that identify athletes earlier,

support them more consistently, sustain them throughout their competitive careers, and enable lifelong participation across multiple levels of sport.

Findings from this dissertation offer practical guidelines for coaches, sport administrators, adaptive sport professionals, rehabilitation practitioners, and sport development leaders with guidance on how to navigate the complexities of strengthening athlete development across the Paralympic pipeline.

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APPENDICES

Appendix A

Tables

Table 1

USOPC Official Training Centers and Training Cites

	Name	Location	Website	Designation
1	Lakeshore Foundation	Birmingham, Alabama	Lakeshore.org	Training Site
2	VELO Sports Center	Carson, California	StubHubCenter.com	Training Site
3	Chula Vista Elite Athlete Training Center	Chula Vista, California	TrainAtChulaVista.com	Training Site
4	World Arena Ice Hall	Colorado Springs, Colorado	WorldArena.com	Training Site
5	University of Illinois – Disability Resources and Educational Services	Champaign, Illinois	Disability.Illinois.edu	Training Site
6	Turnstone	Fort Wayne, Indiana	Turnstone.org	Training Site
7	University of Central Oklahoma Sport Performance	Edmond, Oklahoma	UCOTrainingSite.com	Training Site
8	RIVERSPORT	Oklahoma City, Oklahoma	Riversportokc.org	Training Site
9	Utah Olympic Legacy Foundation	Park City, Utah	UtahOlympicLegacy.com	Training Site
10	Colorado Springs U.S. Olympic & Paralympic Training Center	Colorado Springs, Colorado	https://www.usopc.org/training-centers/colorado-springs	Training Center
11	Lake Placid U.S. Olympic & Paralympic Training Center	Lake Placid, New York	https://www.usopc.org/training-centers/lake-placid	Training Center

Table 2

Levels of the Social-Ecological Model

	Name	Description
1	Individual	Characteristics of the individual such as knowledge, attitudes, behavior, self-concept, skills, etc.
2	Interpersonal	Formal and informal social net-work and social support systems, including the family, work group, and friendship networks.
3	Organizational	Social institutions with organizational characteristics including school, universities, and work settings.
4	Community	Relationships among organizations, institutions, and informal networks within defined boundaries
5	Policy	Local, state, and national laws and policies.

Note. Adapted from "An Ecological Perspective on Health Promotion Programs," by K. R. McLeroy, D. Bibeau, A. Steckler, & K. Glanz, 1988, *Health Education & Behavior, 15*(4), p. 351–377

Table 3

Representation of Military Para-Athletes on Team USA between 2008 and 2024

Year	Paralympic Games	Location	Number of Military Para-Athletes	% of Total U.S. Delegation
2024	Summer	Paris, France	16	7.1
2022	Winter	Beijing, China	22	17.9
2020	Summer	Tokyo, Japan	18	9.0
2018	Winter	PyeongChang, China	18	24.3
2016	Summer	Rio De Janeiro, Brazil	33	12.4
2014	Winter	Sochi, Russia	18	22.5
2012	Summer	London, Great Britain	20	8.8
2010	Winter	Vancouver, Canada	5	10.0
2008	Summer	Beijing, China	16	7.5

Note. Adapted from Team USA Military Paralympians, by U.S. Olympic & Paralympic Committee, n.d. (https://www.usopc.org/team-usa-military-paralympians).

Table 4

10 Eligible Impairment Types Recognized in the Paralympic Movement

	Impairment	Brief Explanation
1	Impaired muscle power	Athletes with impaired muscle power have a health condition that either reduces or eliminates their ability to voluntarily contract muscles in order to move or generate force. Examples include complete and incomplete spinal cord injury.
2	Impaired passive range of movement	Athletes with impaired passive range of movement have a restriction or a lack of passive movement in one or more joints. Examples include chronic joint immobilization.
3	Limb deficiency	Athletes with limb deficiency have total or partial absence of bones or joints as a consequence of trauma (for example, traumatic amputation), illness (e.g. amputation due to bone cancer) or congenital limb deficiency.
4	Leg length difference	Athletes with leg length difference have a difference in the length of their legs as a result of a disturbance of limb growth, or as a result of trauma.
5	Short stature	Athletes with short stature have a reduced length in the bones of the arms, legs and/or trunk.
6	Hypertonia (muscle tension)	Athletes with hypertonia have an increase in muscle tension and a reduced ability of a muscle to stretch caused by damage to the central nervous system. Examples may include cerebral palsy, traumatic brain injury, and stroke.
7	Ataxia	Athletes with Ataxia have uncoordinated movements caused by damage to the central nervous system. Examples may include cerebral palsy, traumatic brain injury, stroke, and multiple sclerosis.
8	Athetosis	Athletes with Athetosis have continual slow involuntary movements.
9	Vision impairment	Athletes with a vision impairment have reduced or no vision caused by damage to the eye structure, optical nerves or optical pathways, or visual cortex of the brain.

Table 4 continued

	Impairment	Brief Explanation
10	Intellectual Impairment	Athletes with an intellectual Impairment have a restriction in intellectual functioning and adaptive behavior which affects conceptual, social and practical adaptive skills required for everyday life. This Impairment must be present before the age of 18.

Note. Adopted from *Explanatory guide to Paralympic classification: Paralympic summer sports* (p. 2-3), by International Paralympic Committee, 2019, https://www.paralympic.org/classification.

Table 5

Empowerment Model: Examples of Continuum of Participation Opportunities

Group make-up	Setting	
	Segregated	Integrated
Specialized (*Only for participants with disabilities)	Aquatics program for participants with disabilities in a venue closed to the public during programming.	Aquatics program for participants with disabilities at the local wellness center (while other programs occurring).
Reverse inclusion (*Mostly participants with disabilities, but a few peers without disabilities are enrolled as role models and participants)	Gross motor sensory program for young children with disabilities (few children without disabilities join as role models) in a university OT clinic closed to the public during programming.	Gross motor sensory program for young children with disabilities (few children without disabilities join as role models) in a local daycare (other children/ programs present).
Full inclusion (*Participants with and without disabilities are enrolled)	Golf program, available for participants with and without disabilities, run at specialized school.	Golf program, available for participants with and without disabilities, run at First Tee (open to public).

Note. Adapted from "The Empowerment Model: Turning Barriers into Possibilities," by T. E. Moran, D. C. Gibbs, and L. Mernin, 2017, *PALAESTRA, 31*(2), p. 22.

Table 6

Empowerment Model: Examples Support

	Role	
Type of participation	Participant	Instructor
Direct (untrained)	During a soccer program, a participant with autism needs a 1:1 assistant to keep them on task - no specific training needed.	During a gymnastics program, instructor needs support to successfully include participant with down syndrome. Volunteer has gymnastics, but no disability experience.
Direct (trained)	During a soccer program, participant with autism needs a 1:1 assistant to minimize meltdowns – specific training is needed.	During a gymnastics program, instructor needs support to modify activities for a participant with spastic hemiplegia. Adapted physical education teacher agrees to co-instruct.
Indirect (untrained)	During aquatics program, participant with spinal bifida does not need support in the water, only needs a volunteer to help with flotations.	During fitness program, participant with hearing impairment joins and instructor consults with mentor who has worked with individuals with hearing impairments.
Indirect (trained)	During aquatics program, participant who has seizures does not need a mentor in the water; just someone trained to handle seizures if needed.	During fitness program, a participant with visual impairment joins and instructor consults with a vision specialist so they can provide the workout schedule in braille.

Note. Adapted from "The Empowerment Model: Turning Barriers into Possibilities," by T. E. Moran, D. C. Gibbs, and L. Mernin, 2017, *PALAESTRA, 31*(2), p. 23.

Table 7

10 Key Factors of Long-Term Athlete Development Model 2.1

	Factor	Brief Description
1	Physical Literacy	Focused on developing basic movements (locomotor skills, object control skills, balance movements), knowledge, and motivation.
2	Specialization	Some sports require early specialization due to performance peaking before maturation (e.g. gymnastics, figure skating), while others benefit from broader sport sampling during early developmental stages (e.g. cycling)
3	Development age	Degree of physical, mental, moral, cognitive and emotional maturity. Often estimated by peak height velocity (PHV).
4	Sensitive Periods	Biologically optimal windows during which children are most responsive to developing specific physical and technical skills such as stamina, skill, strength, speed, or flexibility.
5	Mental, cognitive, and emotional development	Emphasis on ethics, fair play, and character building throughout the various stages.
6	Periodization	Periodization involves the strategic organization of training over time, balancing intensity, duration, and frequency to align with developmental stages and seasonal goals
7	Competition	Designing a competition schedule that aligns with each stage of development, incorporating appropriate training-to-competition ratios
8	Excellence takes time	Athlete development is understood as a long-term process with the emphasis on the 10,000-hour rule which means a minimum of 10 years are needed to excel in any field.
9	System alignment and integration	LTAD must be aligned and integrated into health and education systems.
10	Continuous improvement	The LDAT model is grounded in the principle of ongoing adaptation and learning.

Note. Adapted from *Long-Term Athlete Development 2.1*, by Sport for Life, 2016, and *Youth Athlete Development Models: A Narrative Review* (Varghese et al., 2022). This table was modified to incorporate elements from both sources.

Table 8

Personal-level factors of long development of LTAD model 3.0

Level	Factors
Personal	1. physical literacy, 2. quality environment, 3. developmental age, 4. sensitive periods, 5. predisposition, 6. excellence takes time, 7. for life

Note. Adapted from *Long-Term Development in Sport and Physical Activity 3.0* (Sport for Life, 2019).

Table 9

Organizational-level factors of long-term development of LTAD 3.0

Level	Factors
Organizational	1. Framework 2. Fully embedded 3. Awareness and first involvement 4. Different activities 5. Appropriate specialization 6. Periodization 7. Competition 8. Transitions

Note. Adapted from *Long-Term Development in Sport and Physical Activity 3.0* (Sport for Life, 2019).

Table 10

System-level factors of long-term development of LTAD 3.0

Level	Factors
System	1. Collaboration 2. System alignment 3. Safe and welcoming 4. Diversification 5. Long-term development 6. Continuous improvement 7. Evidence-based

Note. Adapted from *Long-Term Development in Sport and Physical Activity 3.0* (Sport for Life, 2019).

Table 11

10 Pillars of Support for Athletes with Disabilities (referred to as diverse abilities)

	Pillar	Description
1	Coaching	It refers to the qualifications, experience, and knowledge coaches bring to working with athletes with disabilities. It includes understanding sport-specific techniques as well as strategies for adaptation, classification systems, and athlete safety. Coach education may involve formal certification, mentorship, or practical experience in disability sport settings.
2	Competition	In addition to regular competitive opportunities, it involves the structure of events, frequency of competition, classification procedures, and alignment with development pathways.
3	Funding	Long-term development requires consistent funding that needs to be distributed across all stages of the framework.
4	Equipment	While all sport requires the use of equipment, for many athletes and participants with diverse abilities specialized equipment makes sport participation possible.
5	Facilities	Affordable, accessible facilities allow persons with diverse abilities to participate in sport.
6	Training & Competition Partners	For optimal development, athletes with diverse abilities need training and competition partners. While many able-bodied athletes like to train with a partner for additional encouragement, a training partner may be an absolute necessity and integral part of the sport for some athletes with diverse abilities. For example, cyclists who are blind cannot train or race without a sighted pilot.

Table 11 continued

	Pillar	Description
7	Sport Science	Sport scientists can make major contributions at the FUNdamentals and Learn to Train stages through research in the areas of optimum acquisition of skills, establishment of effective learning environments, and the identification of activities and teaching methods that enhance the learning of FUNdamental movement skills.
8	Officials Support	At each stage of LTD, athletes need reliable support and direction from officials. These include sport-specific officials such as referees, umpires, and technical officers, generic sport officials such as doping control officials, and officials unique to sport for athletes with diverse abilities such as interpreters and classifiers.
9	Athlete Support	Athletes at all levels require access to professionals who can provide services in the area of injury prevention, sport nutrition, sport medicine, and rehabilitation. Counseling services are also important for optimal development, particularly in the areas of educational, personal, and career decisions. For young people with diverse abilities, early identification of functional abilities and adaptive techniques can lead to more enjoyable sport and recreation participation and help to guide them into a range of sports and activities for which they are best suited.
10	Talent Development	Not all persons with diverse abilities aim for high performance competition and medals. For many athletes, their goal is simply to enjoy physical activity, interact socially, or improve their quality of health. Each athlete may have a unique definition of a "personal best". However, for those athletes who are inclined to pursue competitive achievement, a logical system of talent development can help to propel them along the path to high performance.

Table 11 continued

Note. Adapted from *No Accidental Champions*, by Canadian Paralympic Committee & Sport for Life, 2024, [PDF], https://sportforlife.ca/wp-content/uploads/2024/01/No-Accidental-Champions_2024_EN_WEB.pdf.

Table 12

Elements of the Labovian Narrative Analysis Model

	Element Name	Questions to be answered	Description
1	Abstract (A)	What is the story about?	This is an optional element; depending on the context in which the story is told, narrators may or may not provide a summary of the story to come.
2	Orientation (O)	Who, when, where?	Provides the context of the story, who was involved, when and where it took place.
3	Complicating action (CA)	Then what happened?	Describes the sequence of events that form the core of the narrative. The series can be added to, indefinitely, as if in response to 'and then what happened?' as long as the events are related in chronological order.
4	Result (R)	So what?	Indicates the resolution or outcome of the complicated action.
5	Evaluation (E)	What finally happened?	Explains the significance of the story or why it is worth telling. It mediates the crucial 'point' of the story, thereby justifying its telling, and it reveals the narrator's perspective on the events being told.
6	Coda (C)	N/A	If present, the coda occurs at the end of the narrative when the narrator returns to the present time of the narration, clearly indicating that the story is over.

Table 13 continued

Note. Adapted from Narratives of Events: Labovian Narrative Analysis and Its Limitations, by Patterson, W., Squire, C., Andrews, M., & Tamboukou, M., 2013, in *Doing Narrative Research* (2nd ed., pp. 27–46), *SAGE Publications*. https://doi.org/10.4135/9781526402271.n2.

Table 14

Participants Demographics

	Pseudonym	AD/CD	Age	Age when acquired disability	Gender	Sport	Games
1	Dylan	CD	46	-	Male	Wheelchair Basketball	2012, 2016, 2020
2	Sarah	AD	66	58	Female	Para Fencing	2020
3	Lauren	AD	41	7	Female	Para Track and Field	2012*
4	Olivia	AD	39	5	Female	Para Track and Field	2012, 2016*
5	Emma	CD	51	-	Female	Para Swimming	2012*
6	Liam	AD	40	20	Male	Wheelchair Rugby	2012, 2020
7	Noah	CD	34	-	Male	Para Track and Field	2012
8	Josh	CD	36	-	Male	Wheelchair Basketball	2016
9	Amelia	CD	27	-	Female	Para Track and Field	2016
10	Chris	CD	25	-	Male	Para judo	2020
11	Aaron	AD	32	15	Male	Para Swimming	2016
12	Henry	CD	30	-	Male	Para Track and Field	2012, 2016, 2020
13	Mel	AD	52	16	Female	Para Cycling	2012*
14	Ava	CD	39	-	Female	Para judo	2012, 2020
15	James	CD	35	-	Male	Paralympic Soccer	2012, 2016
16	William	AD	41	8	Male	Para Track and Field	2012, 2016, 2020
17	Christina	CD	29	-	Female	Para Swimming	2016

Note. An asterisk (*) indicates that the participant competed in Paralympic Games held outside the 2012–2024 study timeframe.

Appendix B

Figures

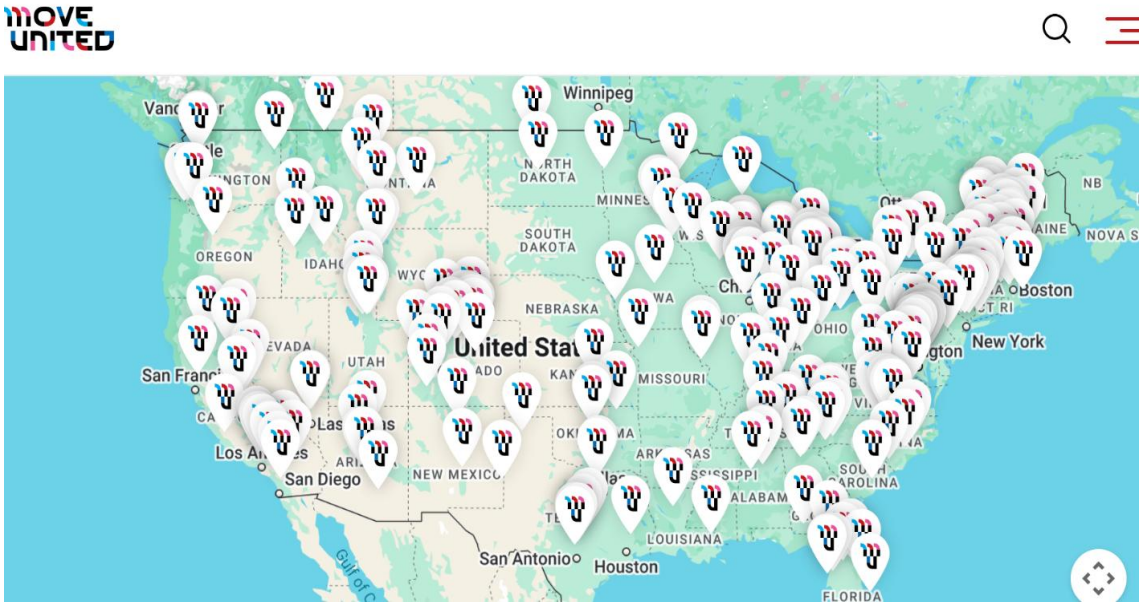

Figure 1

Interactive Map of Move United Member Organizations (as of May 2025)

Note: Retrieved from Move United, 2025, *Move United Locations*.

https://moveunitedsport.org/locations/?page_=1&search=&location=&sport_=&view_type=map#posts

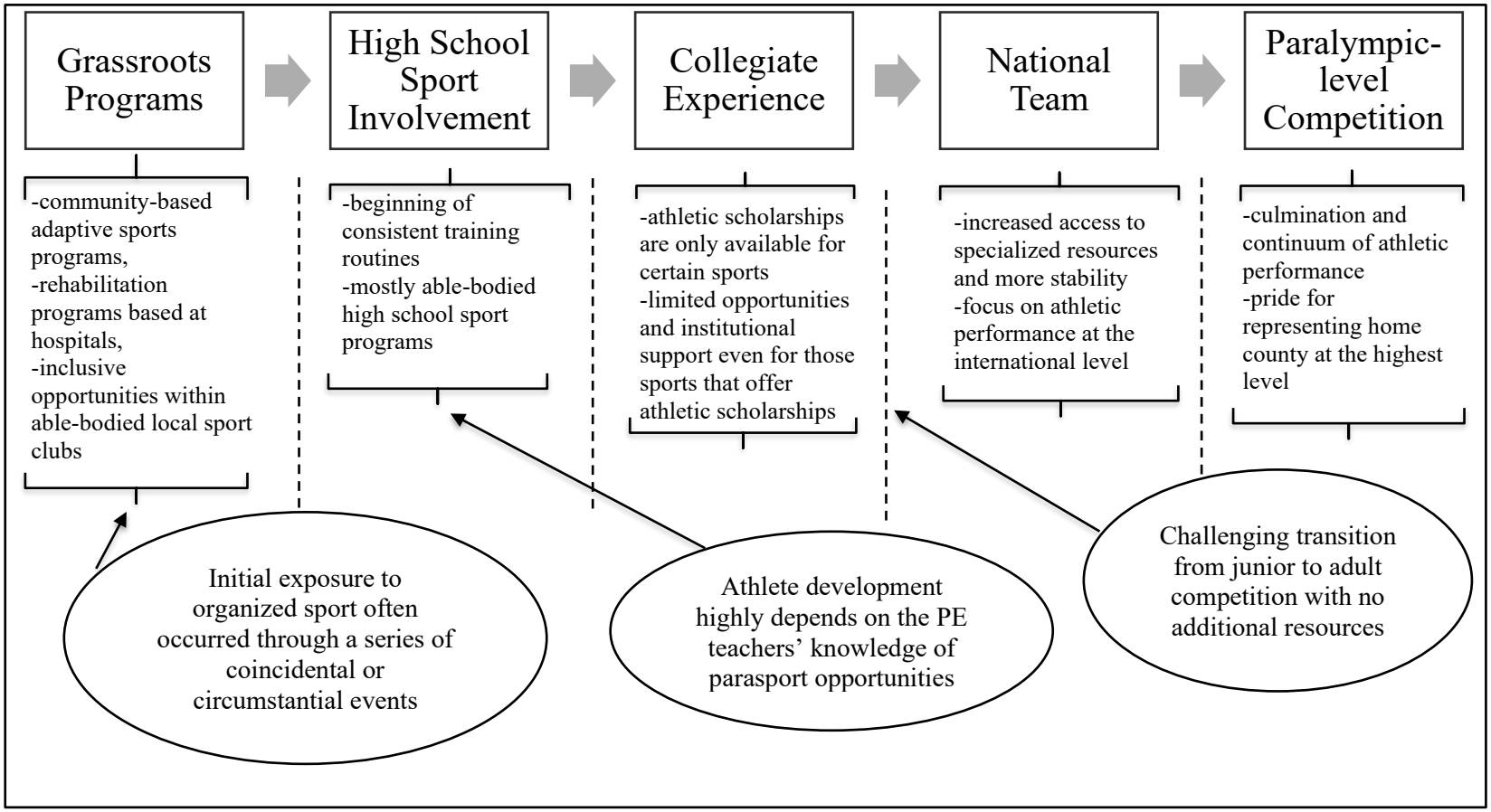

Figure 2

The Stages of the U.S. Paralympic Pipeline and Associated Transition Gaps as Constructed through Participant Narrative

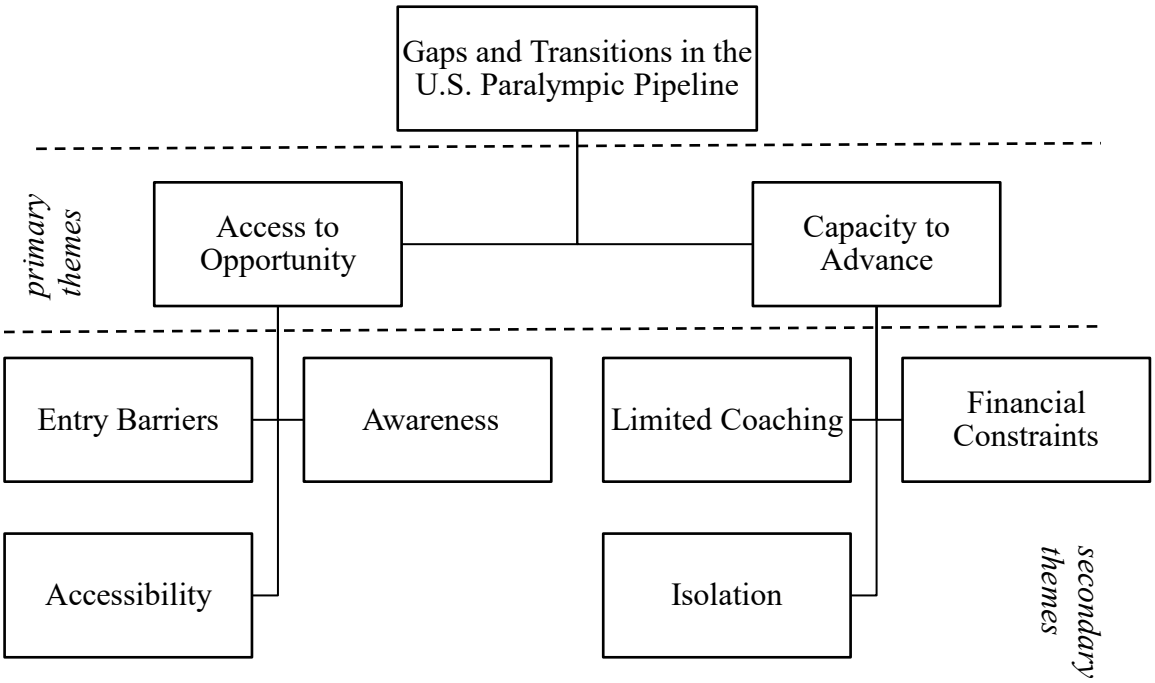

Figure 3

Primary and Secondary Themes that Influence the Progression between the Stages of the U.S. Paralympic Pipeline

Appendix C

Example of Labovian Analysis

My junior year in high school, I was a varsity athlete, and we had a track meet at the [Name] university (orientation). I was jumping, I ended up winning the long jump at that meet (abstract), and then an individual [Name] walked up to me after I was done jumping and handed me a card. I read the card, and it said, "Disability Sports." (complicating action). So, I'm like, 'What?' He was talking to me, and it was going through one ear and out the other. Once [Name] leaves, I literally throw the card in the trash. And then, my coach comes up to me at the track meet and asks if somebody had handed me a card earlier, and I told him I didn't get anything from anybody. That Monday, my jumps coach, [Name], came up to me and said that somebody had reached out to her and said they handed me a card. I told her, "Yes, I got a card, but I have no clue what this is." At that time, I knew nothing about Paralympic sport or sports for individuals with disabilities (evaluation). She began to tell me more and said that they were talking about USA gear, traveling the world, and competing with individuals like yourself. And in my mind, I was like, "Excuse me, BS. No way. This sounds too good to be true." Then she told me that a lady named [Name] wanted to fly me out for a track meet in Arizona (resolution)...So, they flew me and my coach out to Arizona. It was probably one of the most life-changing moments of my life (coda). I felt like I had stepped into a room full of superheroes, seeing individuals with all types of disabilities that I had never seen before.

Code Book for Labovian Analysis

Code (Labov)	Definition	Example
Abstract	Opening of the story and establish what the story is about	"I ended up winning the long jump at a track meet…"
Orientations	Description of the key players, environments, and time frame of the story	My junior year in high school, I was a varsity athlete, and we had a track meet at the [Name] university.
Complicating Actions	Describes the sequence of events and introduces tension; identified by phrase such as "and then"	…an individual by the name of [Name] walked up to me and handed me a card. I read the card, and it said, "Disability Sports." So I'm like, "What?"; Once [Name] leaves, I literally throw the card in the trash. …And then, my coach comes up to me at the track meet and asks if somebody handed me a card earlier, and I told him I didn't get anything from anybody. That Monday, my jumps coach, [Name], came up to me and said that somebody had reached out to her and said they handed me a card. I told her, "Yes, I got a card, but I have no clue what this is."
Evaluations	Reveals the participant's interpretation of the event and why it matters	…At that time, I knew nothing about Paralympic sport or sports for individuals with disabilities. She began to tell me more… in my mind, I was like, "Excuse me, BS. No way. This sounds too good to be true."
Resolutions	Indicates the conclusion of the story	Then she told me that a lady named [Name] wanted to fly me out for a track meet in Arizona…
Coda	Brings the narrative back to the present and signals its lasting significance	It was probably one of the most life-changing moments of my life…

Construction of the U.S. Paralympic Pipeline through Narrative Thematic Analysis

Pipeline Stage	Key Characteristics of the Stage	Indicators in Participant Narratives
Grassroots Programs	Initial exposure to adaptive sports and entry to participation	• Stories focused on early involvement in adaptive sports • Narratives on discovering sports through informal pathways • Emphasis on various entry points depending on the origin of impairment (congenital or acquired) and other factors
High School Involvement	First sustained training within an institutionally organized sport	• Descriptions of training when participants were in high school • Participation often occurred in able-bodied school or club environments
Collegiate Experience	Transition into post-secondary education with or without athletic scholarships	• Narratives of college years • Descriptions of navigating club, informal, or non-existent collegiate parasport pathways • Emphasis on balancing academics and sport with limited institutional support
National Team	Entry into elite and high-performance sport; transition to either Team USA or development team with access to training camps organized by USOPC	• Descriptions of selection and national team involvement • Increased access to centralized resources and coaching
Paralympic-level Competition	Representation at the Paralympic Games and culmination of the athletic journey	• Stories associated with national representation at the Paralympic Games and tryouts • Strong emotional reflections tied to achievement and recognition

Code Book for Narrative Thematic Analysis: Stages of the U.S. Paralympic Pipeline

Pipeline Stage	Categories	Example Codes
Grassroots Programs	• Informal entry to sport • Family support • Community network • Word-of-mouth	• “I got lucky” • “they told my parents she could do sports” • "there was a program through a local hospital" • “a lot of word of mouth”
High School Involvement	• Increased structure and routine • Organized training • Exclusion	• "scheduled consistent training” • "many able-bodied clubs" • "I could practice at the gym with others" • “put in a lane by myself”
Collegiate Experience	• Non-existed collegiate pathways • Uneven institutional support across sports • Limited athletic scholarships • Separation of academics and sport	• "lots of travelling” • “they didn’t have a swim team” • “two separate channels of my life”
National Team	• Performance-based selection • Increased financial support	• "they paid for all the travels" • “fully funded” • “access to a nutritionist”
Paralympic-level Competition	• National representation • Recognition and validation • Culmination of the athletic journey	• “representing the United States” • “I really did it” • “treated the same way as Olympic athletes”

Code Book for Narrative Thematic Analysis: Gaps and Transitions

Theme	Categories	Example Codes
Limited Coaching	• Incidental connections	• “there happened to be a woman there” • “my husband found this young man in a bike shop”
Grassroots Entry Barriers	• Distance to programs • Reliance on family • Travel risks • Transportation	• “finding someone to help with that” • "it was hard to find a guide" • "I could not drive myself" • “you never know if your chair will arrive”
Accessibility	• Lack of accessibility • Limited access to programs	• “it was too steep to push” • “there was nothing offered”
Financial Constraints	• Equipment costs • Fundraising	• “very, very expensive” • “fundraising was part of my training” • "friends, neighbors, I need help!
Awareness	• Limited outreach • Informal exposure	• “kids don’t really know about judo” • "people do not really know much about disabilities" • "at that time, I had no clue what Paralympics were"

Appendix D

Consent Form

Consent for Research Participation

Research Study Title: *Exploring the Paralympic pipeline: The pathway to elite performance*

Researcher(s): *Irina Berry, University of Tennessee, Knoxville*
Dr. Robin Hardin, University of Tennessee Knoxville

• Why am I being asked to be in this research study?

You are being invited to participate in this research study because of your direct experience with the Paralympic developmental pipeline in the United States. You are eligible to participate if you are a retired athlete who competed for Team USA in one or more Summer Paralympic Games between 2012 and 2024 and are no longer actively competing at the elite level.

• What is this research study about?

The purpose of this study is to explore the developmental pipeline leading to competition in the Summer Paralympic Games. Specifically, the study aims to identify key structural, social, and personal factors that influence athletes' progression through the Paralympic pipeline.

• How long will I be in the research study?

If you agree to participate, your involvement will include a one-hour virtual interview conducted via Zoom (the preferred format), along with optional follow-up communication for clarification, if needed. The interview will be scheduled at a time and in a setting that is convenient for you.

• What will happen if I say "Yes, I want to be in this research study"?

If you agree to participate in this study, you will take part in a singular Zoom interview to discuss your experiences and perspectives related to the Paralympic developmental pipeline. We will conduct the interview on the day and time of your choosing. The interviews will be audio-recorded for accuracy and transcribed for analysis.

- **What happens if I say "No, I do not want to be in this research study"?**

Participation in this study is entirely voluntary. You can decline to participate or withdraw from the study at any time without any penalty. Your decision will not affect your relationship with the researchers or the University of Tennessee.

- **What happens if I say "Yes" but change my mind later?**

You can withdraw from the study at any time, even if you initially agree to participate. If you decide to withdraw, please contact the researcher (Irina Berry – **iperfilo@vols.utk.edu**) to inform them of your decision. Any data collected before your withdrawal may still be used for the research unless specifically requested otherwise.

- **Are there any possible risks to me?**

We do not know of any risks to you from participating in this study. We will protect the confidentiality of your information by assigning pseudonyms and storing the information on a secured computer. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.

- **Are there any benefits to being in this research study?**

While there are no direct benefits to you for participating, your contribution will help researchers gain a better understanding of the developmental pathways for Paralympic athletes. This knowledge may benefit future athletes and coaches by addressing gaps and improving support systems within the Paralympic pipeline.

- **Who can see or use the information collected for this research study?**

We will protect the confidentiality of your information by storing it on the password-protected computer of the researchers. If information from this study is published or presented at scientific meetings, your name and other personal information will not be used.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information or what information came from you. Although it is unlikely, there are times when others may need to see the information we collect about you. These include:

- People at the University of Tennessee, Knoxville who oversee research to make sure it is conducted properly.
- Government agencies (such as the Office for Human Research Protections in the U.S. Department of Health and Human Services), and others responsible for watching over the safety, effectiveness, and conduct of the research.
- If a law or court requires us to share the information, we would have to follow that law or final court ruling.

- **What will happen to my information after this study is over?**

We will keep your information to use for future research. Your name and other information that can directly identify you will be deleted from your research data collected as part of the study. We will not share your research data with other researchers.

- **Will I be paid for being in this research study?**

You will receive a $20 gift card (e.g., Starbucks or a preferred alternative) as compensation for your time upon completion of the interview.

- **Who can answer my questions about this research study?**

If you have questions or concerns about this study or have experienced a research-related problem or injury, contact the researchers:

Irina Berry, **iperfilo@vols.utk.edu**

Dr. Robin Hardin, **robh@utk.edu**

For questions or concerns about your rights or to speak with someone other than the research team about the study, please contact:

Institutional Review Board
The University of Tennessee, Knoxville
2240 Sutherland Drive
Suite 2
Knoxville, TN 37919
Phone: 865-974-7697
Email: utkirb@utk.edu

- **STATEMENT OF CONSENT**

I have read this form and the research study has been explained to me. I have been given the chance to ask questions and my questions have been answered. If I have

more questions, I have been told who to contact. By signing this document, I am agreeing to be in this study. I will receive a copy of this document after I sign it.

Do you agree to participate in this study?

Participant Response: (Record the participant's verbal consent.)

- I agree to participate in this research study.
- I do not agree to participate in this research study

Recruitment Email

Dear [insert name of potential participant],

My name is Irina Berry, and I am a Ph.D. student in Sport Management at the University of Tennessee, Knoxville, under my faculty advisor, Dr. Robin Hardin.

I am conducting research as a part of my dissertation titled **" Exploring the Paralympic pipeline: The pathway to elite performance".** The purpose of this study is to explore para-athletes' experiences in relation to the pipeline for the Paralympic Games. Additionally, the findings aim to identify specific barriers and gaps in the developmental process for athletes with disabilities. You are eligible to participate if you are a retired athlete who competed for Team USA in one or more Summer Paralympic Games between 2012 and 2024 and are no longer actively competing at the elite level.

The purpose of this email is to invite you to participate in the study if you meet these qualifications. Your participation would involve a one-on-one interview lasting approximately 60 minutes. The interview will be conducted virtually (on Zoom). You will receive a $20 gift card (e.g., Starbucks or a preferred alternative) as compensation for your time upon completion of the interview.

If you are willing to participate, I will provide you with an informed consent document to review. Upon confirming your consent, we will arrange a date and time for the interview. Participation in this study is entirely voluntary, and you may withdraw at any time without penalty.

If you do not meet the eligibility criteria but know someone who does, I would greatly appreciate it if you could share their contact information with me or forward this email to them. If you have any questions about this study or would like to participate, please contact me at iperfilo@vols.utk.edu or Dr. Robin Hardin at robh@utk.edu.

Thank you for considering this opportunity to contribute to research that may help improve developmental pathways for Paralympic athletes.

Sincerely,

Irina Berry
Ph.D. Student, Graduate Teaching Associate
Sport Management
Department of Kinesiology, Recreation, and Sport Studies
University of Tennessee, Knoxville

Recruitment Materials

Move United

Subject: Request for Assistance with Participant Recruitment – Dissertation Research on Paralympic Pipeline

Dear [Recipient's Name],

I hope this message finds you well. My name is Irina Berry, and I am a doctoral student in Sport Management at the University of Tennessee, Knoxville. I am currently conducting a dissertation study focused on understanding the developmental pipeline leading to elite competition in the Paralympic Games, with an emphasis on comparing the experiences of athletes with congenital and acquired disabilities.

As part of this research, I am seeking to interview retired athletes who competed for Team USA in the Summer Paralympic Games between 2012 and 2024. I am reaching out to kindly request Move United's assistance in identifying and contacting potential participants who meet these criteria.

All participants will be asked to take part in a one-time, semi-structured interview (conducted via Zoom), and will receive a $20 gift card as appreciation for their time. The study has been reviewed and approved by the University of Tennessee's Institutional Review Board (**UTK IRB-25-08894-XP**).

If possible, I would greatly appreciate any support Move United can offer in either providing contact information for eligible individuals or distributing the study invitation through your networks.

Please let me know if you would be open to supporting this request, or if you need any additional documentation, such as the IRB approval letter or study flyer.

Thank you very much for your time and consideration. I greatly value the work that Move United does and hope this study can contribute to advancing knowledge and equity in adaptive sport.

Warm regards,
Irina Berry
Ph.D. Student, Sport Management
University of Tennessee, Knoxville
iperfilo@vols.utk.edu

VITA

Irina Berry (formerly Perfilova) was born in Moscow, Russia. She attended the Russian State University of Physical Education, Sports, Youth and Tourism, where she earned a Bachelor of Science in Physical Education and Sport. During her undergraduate studies, Irina was a member of the Russian National Cycling Team and competed in tandem para-cycling. After retiring from professional sport, she was awarded a Fulbright Scholarship from the U.S. Department of State to pursue graduate studies in the United States. Mrs. Berry attended James Madison University in Harrisonburg, VA and earned a Master of Science in Sport and Recreation Leadership. During her graduate studies, a faculty member who shared her passion for adaptive sports research introduced Irina to academic inquiry and inspired her to pursue scholarly work at the doctoral level. Mrs. Berry then moved to Knoxville, TN to start a PhD in Sport Management at the University of Tennessee. She was also appointed as a Graduate Teaching Associate and taught multiple undergraduate sport management courses including foundations of sport management, socio-cultural foundations of sport and recreation, sport marketing, and financial aspects of sport. Mrs. Berry research examines the experiences of athletes with disabilities in adaptive sports and recreation.