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A Comprehensive Analysis of the Factors Affecting the Development of Expertise in Athletes with Impairments

Project Summary

The aim of this research program was to develop a more comprehensive understanding of the current Canadian and Australian Paralympic systems. Results indicated that there are differences in developmental pathways athletes take to reach the peak of their careers. More specifically, impairment-related factors including impairment-onset can impact athletes' sporting trajectories. This knowledge extension not only contributes to the glaring gap in the literature pertaining to this cohort, but also informs key practical decisions on policy formation, resource allocation, and staff development to better support the pathway and optimize the environment to maximize athletes' sporting developmental potential.

Research Methods

Utilizing a mixed-methods approach, a four-phased research program was conducted to examine the Canadian and Australian Paralympic sport structures to better understand athletes' experiences across the system including recruitment and initiation (a. semi-structured interview with coaches and high-performance staff to identify key indicators for athlete selection and development and b. distribution of a survey to examine demographic and characteristics of participants attending the Paralympic Search), development (comprehensive questionnaire filled out by athletes capturing their athletic career histories), and transfer between sports (semi-structured interviews with athletes and coaches on their experience and perspective of transfer between sports).

Research Results

Findings suggest that athletes' impairment plays a key role both in recruitment opportunities as well as sporting development. More specifically, coaches highlighted athletes' impairments along with their familial demographics and experiences in sports as indicators for selection and potential success in their respective sport. In addition, athletes' impairment onset influenced athletes' developmental trajectories, their training structures and

experiences in organized sports. More specifically, athletes with late-onset impairments (i.e., acquired during early adulthood/adulthood) reached milestones and started training at a later chronological age; however, from the point they started participation in their main sport, these athletes progressed through the milestones and incorporated different types of training more quickly in comparison to athletes with early-onset impairment (athletes with congenital impairment or acquired during pre-adolescence). Furthermore, the majority of athletes with acquired impairments reported having experience in able-bodied sports prior to acquiring their impairment, mostly in sports that are similar to the type of sport they are currently specializing.

Policy and Program Implications

The results from this research program suggests that athletes with impairments acquired at different stages of their careers will require different types of resources when entering sport. For example, athletes with early-onset impairments could benefit from additional sport sampling opportunities to explore different environments and social settings. This would allow athletes to familiarize with their abilities and better conceptualize the demands of various sports while learning the social elements of sports (i.e., communication with different types of coaches, teammates, etc.). On the other hand, the 'quick progression' for athletes with late-onset impairment suggests that athletes currently entering sport later in their careers are seasoned athletes and perhaps would benefit from a more tailored approach that would accelerate their development. This includes more robust training programs working with experienced coaches, access to support staff, specialized equipment, high-performance training facilities, and financial support.

There are also recruitment implications as most athletes with acquired impairments reported experience in sports prior to their injury. This suggest either athletes who are interested in sports are seeking opportunities in the Para-setting, or current recruitment strategies are tailored to this cohort (as alluded to by coaches in one of our studies as being an indicator for athlete selection). However, there are lost opportunities for athletes looking to explore Para-sport and perhaps develop into either life-long participants or expand their potential in a high-performance stream. Therefore, sport organizations and community programs may benefit from re-evaluating the messaging pertaining to their recruitment strategies and explore factors that may be hindering participation opportunities. There were also low number of females attending the Search events and coaches reported this to be a challenge from a recruitment perspective. Therefore, it is necessary to explore any unique barriers that impact opportunity and subsequent sporting experience for female athletes.

Next Steps

As alluded to in the implications section, there is important work to be considered pertaining to recruitment and opportunity for various cohort of athletes (e.g., female, no prior sporting

experience). In addition, there are numerous impairment-related factors that influence athletes' trajectories that we were not able to control for due to the complexity of the interactive factors that impact development. For example, each sport contains a classification system that dictates athletes' eligibility to play in that respective sport based on their impairment. The community at large (e.g., athletes with impairments, coaches, practitioners, researchers) would benefit from knowing more on how athletes' impairment type (e.g., spinal cord injury, spina bifida) interacts with the impairment-onset to better tailor recommendations for athletes in specific sports and classifications within each sport.

Knowledge Translation

Considering this was a collaborative project with the Canadian Paralympic Committee (CPC) and Paralympics Australia (PA), there has been numerous internal reports provided to each organization through out the developments and progression of each project. Two reports were shared with CPC for the project that examined the demographic and characteristic of participants attending the Paralympian Search events (attached here). Another in-depth report was provided to CPC and PA pertaining to the comprehensive quantitative review of athletes' sporting trajectories (report attached here). This report was also tailored for each sport as we provided a sport-specific report card for each sport that participated in this study. The interviews which provided insight to coaches' approach to selection and development of athletes produced a general report which identified key factors that impact recruitment and development. Last, the transfer-project informed of the gap currently in the Canadian Paralympic system which led to a CPC-led initiative and an on-going task force to better formalize athlete transfer (infographic and policy paper that was drawn from this which led to recruitment and subsequent task-force development are kept in-house for parties involved, with rights reserved to CPC on who to share with).
