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# Inter Sport Transfer: Experiences of High Performing Australian Adolescent Athletes

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## Abstract

A recent strategy by national sport governing bodies to maximize success at global levels has been through talent transfer (TT) programs. TT occurs when a high performing athlete's involvement in a sport—in which they have invested substantial time, effort, and resources—comes to an end, and they transfer this experience to a new sport. Research exploring the facilitators and barriers to successful TT in elite sport is surprisingly limited. This is particularly the case for high performing adolescent athletes. Little is known about when, why, and at what stages of their careers they choose to transfer from one sport to another and their consequent experiences of doing so. Through semi-structured interviews, this study explored motives for why eight, high performing Australian adolescent athletes transferred sports and identified factors which facilitated or hindered the ensuing successful inter sport transfer. Based on our findings, we propose the Adolescent Sport Talent Transfer Stage model (ASTT- four stage model): (1) Primary Sport Rejection Stage; (2) Transfer Sport Susceptibility Stage; (3) Transfer Sport Acknowledgement Stage; (4) Internalization and Acceptance of Transfer Sport Stage. The model conceptualizes how talent transfer may occur and focuses on explaining the process of how to become a successful youth and adult elite athlete in another sport. Practical implications, further research avenues and limitations are presented.

## Keywords

Adolescent athlete, high performing, inter sport transfer, transitions

## Introduction

As standards and competition levels on the international stage continue to increase, policy makers, coaches and athletes involved in high performance sport continually search for more effective methods to aid in detecting, selecting, and developing talent (Collins et al., 2014; MacNamara & Collins, 2015; Seifert et al., 2019). A recent strategy employed by national sport governing bodies to maximise global level success has been through formal talent transfer (TT) programs (Collins et al., 2014).

TT is a recently formalized process used to

identify, select, then capitalize on the abilities of talented athletes who have already succeeded in one sport and transfer the abilities to another sport in which they may excel and achieve elite success (Collins et al., 2014; MacNamara & Collins, 2015). TT occurs when a high performing athlete's involvement in a sport, in which they have invested significant effort and resources over substantial periods of time, comes to an end, and they try to transfer their experiences to a new sport (Rea & Lavallee, 2015). TT most commonly occurs informally with athletes themselves initiating

the switch between sports which generally have comparable physiological requirements, tactical components, and movement patterns (MacNamara & Collins, 2015).

In an era where governments set globally demanding sporting success targets (e.g., World Championships and Olympic Games), many nations now allocate financial investment and resources towards high performance TT programs (Collins et al., 2014). To illustrate, UK Sport and several national governing bodies including GB Taekwondo, British Basketball, GB Rowing, and GB Canoeing have worked in partnership since 2007 to develop, implement, and finance several TT initiatives. These include Sporting Giants, Fighting Chance, Girls4Gold, Pitch2Podium, and Tall and Talented. Of the 7000 applicants, 100 athletes have successfully progressed into the World Class system in their new sports with significant success rates at major international events (MacNamara & Collins, 2015).

It is well recognized how multiple physical and psychological attributes are critical for achieving elite international level of sport performance (Baker et al., 2019; Bjørndal & Ronglan, 2018; MacNamara et al., 2010a; Morgan et al., 2017; Taylor & Collins, 2019; Tedesquia & Young, 2018). While previous research identified the importance of physical factors in TT success (e.g., Collins et al., 2014), the psychosocial and environmental factors which contribute to the transfer process must not be undervalued (MacNamara & Collins, 2015). MacNamara et al. (2010b) and MacNamara et al. (2010a) further argued that a senior athlete's potential to perform at an elite level goes beyond physical attributes alone and is also heavily reliant on psychological attributes including perseverance, commitment, conscientiousness, and determination.

Presently, there are few published TT specific studies within the talent development literature. Collins et al. (2014) provided some insight into the mechanisms and processes influencing successful transition in athletes representing 2010 and 2012 GB, Canada, USA, and Australia Olympic teams. The study explored opinions of sport science support specialists with working experience within applied TT settings into what they considered either hindered or facilitated

successful transfer. Several themes were derived that participants felt were important in TT processes, including skill transfer, psychosocial assets, previous experiences, and physical mechanisms (i.e., physical assets and incorrect recruitment principles).

Bullock et al. (2009) captured the sport transfer journeys of several senior female Australian athletes who, with the sole aim of competing at the 2006 Winter Olympic Games, transferred from their primary sports into the skeleton discipline. After successfully completing an initial selection camp, ten athletes were invited to enroll in an intensified skeleton training program. The single athlete who went onto represent Australia at the Games, finishing in sixth place, did so after a 14-month period of intensive skeleton-specific training. This finding lends strong support to targeted TT approaches which identify successful senior athletes (>18 years) from sports that have similar attributes believed important in the sport that the athletes are transferring to.

In contrast to the findings of Collins et al. (2014), MacNamara and Collins (2015) identified a range of psycho-social and environmental factors that were key to seven elite athletes' successful transfer from one sport to another and achievement of international success. They specifically discussed how a positive learning environment (e.g., individual attention, encouragement, and an unstructured pathway), suitable TT process timeframe (e.g., provided with sufficient time and resources to adjust to the transfer sport and lack of early pressure for results), previous sporting experiences (e.g., understanding demands of elite competition plus the ability to learn and reflect on past experiences), physical and physiological characteristics (e.g., athletic ability), and psychological factors (e.g., coping skills, discipline, goal setting, and realistic performance evaluation) were key to the TT success. These findings further support the theory that deliberate practice and training and learning skills in a sport context may be an alternative pathway for transferring expertise (Baker, 2007; Coleman, 2007; Runco, 2007).

A key finding from the limited TT literature

tells us how sport transfer tends to be self-instigated and stimulated by one or a combination of reasons, including persistent injuries in their primary sports, plateau in performance, decline in motivation, retirement, or wishing to experience, try, and compete at the equivalent level or higher in a new sport (Bullock et al., 2009; Rea & Lavallee, 2015). Unfortunately, little empirical evidence is currently available to explain best the specific facilitators and barriers to successful TT of high performing adolescent athletes. Little is also known about when, why, and at what stages of their career adolescents choose to transfer from one sport to another and their consequent experiences of doing so. Extending the work of Collins et al. (2014) and MacNamara and Collins (2015), the primary aims of this exploratory study were as follows: (1) determine motives for why high performing Australian adolescent athletes transferred sports and (2) identify factors that facilitated or hindered the ensuing successful inter sport transfer.

The study is justified because identifying how best to select, develop, and retain the next generation of world class adolescent athletes is a strategic priority for national sport governing bodies worldwide. The study findings will make timely contributions to the existing TT literature. Primarily, it will provide high performance coaches, sport scientists and talent developers

with practical implications on how best to promote optimal physical, psychological, and social development of talented adolescent athletes when they transfer between sports.

## Methodology

### Participants

This study included 8 (male = 4, female = 4) high performing Australian adolescent athletes (mean age = 15.8 years). All were full-time secondary education students based at a sports academy school in Victoria, Australia. Experts have been defined within the extant literature as those who compete at international levels (e.g., Helsen et al., 1998). In this study, the term “high performing adolescent athlete” was used to categorize participants aged between 13 and 16 years, all of whom had greater than six months experience of competing internationally for Australian Junior representative sports teams at a global level across various disciplines and age classifications (e.g., under 15’s, 16’s, 17’s and 18’s). Although developed for older athletes, our sample was classified as competitive elite in their respective sport, as defined by Swann et al. (2015). Within 12 months of data collection, all participants had successfully transferred from their primary sport to the equivalent level in their transfer sport (see Table 1).

**Table 1:** Participant Information<sup>1</sup>

Participant	Primary Sport	Transfer Sport	Age of Transfer
1	Team Based Ball	Individual Power	15
2	Track and Field	Individual Power	15
3	Team Based Ball	Water Based	16
4	Water Based	Team Based Ball	14
5	Team Based Ball	Water Based	16
6	Team Based Ball	Team Based Ball	15
7	Acrobatic	Aerial Skiing	13
8	Team Based Ball	Track and Field	15

<sup>1</sup> Gender withheld to protect anonymity.

In all cases, participants encountered a diversified introduction to several sports during early and late childhood within a non-competitive, autonomy supportive learning climate, which could be explained by Deliberate Play Theory (Côté, 1999). All had specialized in their primary sport by age 11 and competed regularly across a range of standards up to their transfer (e.g., regional, national, and international competition levels). Participants sporting histories were verified by the school Head of Sport who interviewed them and their parents on two separate occasions as part of the recruitment and enrolment process. Table 1 provides an overview of participant demographic information.

### Procedure

Following approval by the school's Principal, the research team was granted permission to send a letter to prospective participants and their parents. This provided a brief overview of the study aims and objectives. Specifically, it explained how the research team wished to interview pupils who had competed for Australian junior representative sports teams in the past 12 months but had transferred and were now competing at the same level but in another sport about their inter-sport transfer experiences. We used purposeful sampling to ensure that the athletes could be classified as semi-elite or competitive elite according to the framework developed by Swann et al. (2015). Higher levels of achievement are difficult to obtain for adolescent athletes who have engaged in sport transfer in this model. To enable participant recruitment, ethical approval was granted from a local University and Department of Education of Victoria, Australia.

All consenting participants were provided further verbal and written information on the procedure to be followed, told they could withdraw from the study at any point should they wish to do so, and were assigned a numerical pseudonym to protect anonymity. All participants were under the age of 18, so parental consent permitting the child's involvement was obtained in all instances prior to the commencement of any data collection.

Interviews were undertaken at a convenient time, date, and location for each participant. In each case, the location was within a safe, private, comfortable room within the grounds of a School Sports Academy in Victoria, Australia.

When undertaking qualitative research, it is important that the interviewer build rapport and trust with the interviewee and make them feel as comfortable and relaxed as possible. The lead author was previously an elite junior athlete. This meant he possessed contextual knowledge concerned with the demands and terminology used in such settings which he used to aid the process of establishing a positive and empathetic bond with participants (Patton, 2002). The proposed interview schedule was pilot tested by an adolescent athlete with experience of successful inter sport transfer at state level. This confirmed duration of approximately 45 minutes and strengthened the lead author's interviewing skills and techniques.

Eight face to face, semi-structured qualitative interviews lasting between 35 and 50 minutes each were undertaken by the first author and were audio recorded. Participants were guided through a series of questions which probed their reasons for transferring sports and their consequent experiences. To ensure participants felt at ease to share personal and sensitive information, each interview started with an informal discussion on how they first became involved in their primary sport (Rapley, 2004). At all stages, the lead author undertook the role of "active listener" to assist participants in telling their unique stories in their own way.

The interview guide was based on the previous work of MacNamara and colleagues (2010a; 2010b; 2015), which has identified barriers and facilitators to talent transfer albeit in adult athletes, as well as on the research teams' experience in working and conducting research with adolescent athletes. During stage one of the interviews, questioning focused on identifying the participants' primary reasons and motivations for transferring between sports. In stage two, the interviewer focused on exploring the specific challenges participants encountered during the successful transfer. Example questions included "were there any significant

barriers you faced in your new sport” and “what did you do to try to reduce this problem.” To elicit richer data, supplementary probing was used, such as “what alternatives did you have at this time,” “what was the reason for doing that,” “can you describe further what that incident made you feel like,” “why did this specifically hinder your progression,” and “why do you think you behaved in this way.” This flexible questioning approach ensured participant centeredness, making it possible to follow up conversations where appropriate (Lincoln & Gubba, 1985). Rather than following a standardized list of questions, the interviewer’s every attempt was to follow participants’ stories and to understand their exclusive experiences and accounts of their inter sport transfer.

**Data Analysis.** Each interview was transcribed verbatim and subjected to similar thematic analysis guidelines published by Braun and Clarke (2006). All eight transcripts were read multiple times by the first and last author with notes reflecting theme statements and their meanings placed within margins. The same authors then independently annotated each interview transcript with their personalized thoughts and interpretations of the data. Thematic coding employed an inductive approach to allow for lower order themes to be derived. There were several minor differences between the two separate coding results, with discrepancies discussed and agreed. Primary associations and connections based on similarities and patterns between derived themes were made, resulting in the development of four main themes. When finalized, interview extracts representing each theme were selected. The final analysis stage involved developing written accounts from identified themes. These were reviewed and redrafted several times.

**Trustworthiness and Validity.** To ensure qualitative rigor (Smith & McGannon, 2018), we used member checking and critical friend procedure. In terms of member checking, three weeks post-interview, six participants undertook a brief (approximately ten minutes) face-to-face member-checking conversation with the first

author to establish if they were satisfied that the findings that had emerged were accurate reflections of their inter-sport transfer experiences (Lincoln & Gubba, 1985). In all cases, each participant corroborated their personal journey within the wider context of the finalized data set, confirming the research team’s effectiveness in successfully establishing participants inter-sport transfer experiences. The third author acted as a critical friend to the first author. After presenting findings to the third author, they provided reflections and challenged interpretations through critical feedback. This was an iterative process and resulted in relocation of codes and minor changes in categorization.

## Results

Findings are presented under four key themes which reflect the experiences and views of the study sample. Participant numbers are presented in parentheses (e.g., **P1** reflects participant 1).

### Primary Sport Rejection

Among participants, early childhood sport experiences were found to be fun and pleasurable with all engaged in several school and grassroots teams. During this period of their sports careers, all participants displayed high sporting ability levels, across multiple activities. When study participants were questioned further, it was clear that all had decided to stop participation in their primary sport during the early-mid teenage years because it failed to satisfy their needs and ambitions. Sport became no longer about enjoyment and camaraderie with peers but instead a strategic maneuver towards a sport they believed held the most possibility for them to make the grade as a high-performance athlete immediately and become a full-time professional senior athlete. The following quotes emphasize these points further:

*I was not improving anymore in swimming and if I had not quit and changed sports then I am certain I would have remained unhappy because I am very competitive and like to beat people and I was not doing this in swimming anymore,*

*so things had to change. (P4)*

*Well, I know that acrobatics is not an Olympic sport but my new sport is so I just hope by changing sports will help me to go onto competing internationally as a senior and ultimately get paid for doing so. (P7)*

All participants were highly motivated, goal orientated, impatient for sporting success, and placed heavy emphasis on being successful at an international level in their sport and the need to feel competent. From early age, they seemed to have displayed a determination to get to the top in sport. Thus, we argue that most participants went through a systematic and strategic reconsideration process of how best to achieve sporting success on the international stage. The majority had now realized that achieving this life goal was highly unlikely unless they redeveloped their sport career road map and transferred sports immediately. They needed another pathway to reach the top. The nature of the sport seemed not to matter anymore so long they went on to “make it” and could represent Australia. Then they were happy to close the door on their primary sports. The passages below illustrate the essence of such comments further:

*I always wanted to be a professional athlete and figured out that that I did not have to choose my most favorite sport to do so but the one I stood out the most chance in. (P3)*

*I was about 14 when I started thinking seriously about changing sports. It was hard for me at the time both physically and mentally because I was going from netball training to hockey training on the same night and it was just getting hectic. I had two sports that were both competing for my time so at the end of that year I started to think about what I really wanted to do in my life and decided hockey because I thought I had more*

*chance of making a professional career out of it than netball. (P6)*

*When I was younger, I competed in athletics sometimes and then I received first place in some competitions we had with other schools and that sort of in the back of my mind told me that that I should pursue athletics instead of basketball, so I decided to go with that and give it a real go. (P8)*

For most participants, it was noticeable how their primary sport performance levels either deteriorated or plateaued during the early teenage years. For example, several discussed how they could no longer rely on their previous performances to win and outperform fellow teammates and opposition. The passages below elaborate on this point:

*I was fast for my age and had this fitness and tenacious element to just win. So, I think that is what initially helped me to shine on the pitch, but I did not have the technical skills that everyone else had and when I was 12 or 13 and when the others caught me up physically my lack of skills really started to show. (P1)*

*As time progressed playing football, things kind of evened out and it started to take more effort to become better and I would say that my improvement then only started to become gradual [sighs] so that is when I started to think seriously about what other sports was I more likely to be able to excel in. (P3)*

*When playing basketball as a kid, I had always found it easy because I was more athletic during that time compared to the other players and I dominated games by myself but this kind of evened itself out and it became much harder to stand out anymore in my training and matches. (P8)*

For some participants, another contributing factor to transfer was because of the difficulties they encountered in maintaining regular fitness and performance levels following a long-term injury. The following narrative by participant six reinforces this attitudinal change:

*The four months I had off with a long-term illness played a real factor in my decision to swap between sports, as with being out of action for so long it felt like I was playing catch up and having to work much harder than ever before just to maintain and reach the levels where I used to be at. (P6)*

### Transfer Sport Susceptibility

It was apparent that all participants initially resisted the transfer suggested by their coach and school on the basis of the participants' observed and measured skills. They wanted to compete for Australia, but they struggled connecting with their new sport. The majority experienced immediate reservations, uncertainties, and a fear of letting go. They found the transition to be problematic, encountering consequent identity issues. Their passion for their new chosen pursuit was initially very low as reflected by their limited early buy-in and engagement. The following quotes highlight how they initially struggled with adjustment to their new sport and had yet to internalize fully the consequences of their decisions and actions:

*I only committed a few hours towards my training because it was boring and my early performances in competitions were so awful. (P1)*

*I definitely missed the bigger team in AFL (Australian Rules Football) because with rowing it is very individual, and I did miss the sense of the game and everyone being there and working together and the banter. (P3)*

*The constant repetition was hard, and I soon started getting tired of doing the same things over and over*

*again. With staring at that black line as you keep swimming up and down doing, the long boring sets were so tedious. (P5)*

Interviews further revealed that the process of inter sport transfer for a competent elite adolescent athlete seemed overwhelming. Some felt underprepared, demotivated, and generally not sure whether they had made the right choice. Most participants chose to transfer to another sport in the first place, based purely on their own free will. However, some started to question and regret their decisions. Participants also discussed how the transition was even more challenging since they and their families had invested substantial resources over a sustained period into their primary sports. It is where their collective enjoyment and passion lay, deeply rooted, and firmly established, despite the realization that they would not make a successful transition at an international level to adult elite sport. They decided to change in order to achieve their goal of representing Australia in the new sport. The following quote by participant four explains parental displeasure in transferring sports:

*Well, my mum did not speak to me for like two weeks after leaving swimming [smiles and giggles] and she just said that I had just wasted all my time and it was pointless changing sports. So, yes, she was not happy about it [transfer from swimming to lacrosse] but I think she is sort of over it now. (P4)*

For most participants, there was a reluctance to let go of the dream of achieving world class status in their primary sport despite knowing that they are very unlikely to be able to do so. This created further tension, turmoil, and confusion for them, which is highlighted in the following quotes:

*I was a footie player at the end of the day [AFL]. That was me and who everyone viewed me as and I could not get to grips with the new regime and really missed the banter with my old teammates. (P1)*

*There were periods in the early days of my transfer where I wanted so much to just to get back on the footie pitch [AFL]. (P5)*

*There were times in some early days of my new sport when I thought to myself, what have I done. (P7)*

When questioners probed further, several participants discussed transferring only because they thought it might benefit long-term performance in their primary sports. Some participants who had a strong sport identity in their primary sport had difficulties in rationalizing their choice to themselves:

*I only really participated in weightlifting [transferred sport] at the start to aid my football [primary sport] (P1)*

*The training was far tougher than what I was used to, but I could see signs I was getting stronger again and thought how maybe I could return to track and see how I got on. (P2)*

Several participants explained openly that their decision to change sports was based purely on extrinsically motivated factors and the increased likelihood of achieving future sporting success. This significant finding was clearly the case for participants three and six, who said:

*I was doing some good performances and improving each year in AFL, but the rowing offers so much like the Olympics route and competitions overseas so that's why I went with it. (P3)*

*For me, it came down to the point where I had to choose which sport I was most likely to make it in, otherwise things were going to start colliding, and I did think I had made the wrong decision in the first few months after switching. (P6)*

## Transfer Sport Adoption

Participants found adapting to their new sports

to be a very solitary and demanding experience at first. But as time passed, they started displaying gradual signs of transfer acceptance, attraction, and affinity which helped support the transition and played a key role in nurturing a developing sense of connection with their new sports.

Participants enjoyed a newfound sense of adventure and independence, began engaging more proactively and enthusiastically, and became intrinsically motivated towards their new sports. As their skills sets grew, participants started displaying excitement again for competition and particularly liked testing themselves against peers in their transfer sport. The comments below highlight how the new sports careers provided participants with greater opportunities for experiencing again high levels of autonomy, competence, and relatedness within their lives.

*I realized that I was getting pretty good at it [new sport] and kind of starting to like it more because of that. I can remember thinking I could really use this sport to get somewhere in my life. I compared it to closing one door and then going through another. (P1)*

*I began to realize that I was not going to make it in track because I did not really have the right body for long distance running, but for weightlifting it was much better suited to my muscular frame, so was logical to pursue and after some early settling in issues I never looked back. (P2)*

This improved general engagement fostered a growing sense of restored sport belonging and identity. Participants were quickly acclimatized to their new sports, becoming progressively more responsive and accepting towards the transfer which impacted positively on their self-esteem. These following quotes emphasize this point:

*It [new sport] was so different from athletics because you would be doing distance and repetitions*

*all the time, whereas with weightlifting you just lift then sit down, and it was just simple and easy to see what you had achieved. (P2)*

*It became all about the recognition and getting selected on international teams, and I thought so what if I am getting success in a less popular sport. (P8)*

Some study participants achieved almost immediate national level success with limited effort in their new sport. For example, participant two set a new age-specific state record within three months of switching sports.

*I was asked by the coach if I wanted to do a weightlifting competition, and I said oh well why not because some others who used to be in the athletics team had tried it out a couple of months before, and they said it was really fun, so I said I would go, and I did it, and I broke the state youth record for the under 15's weight category, and everyone was saying that is so cool. (P2)*

Initially, adolescent elite athletes in this study saw transferring to a new sport as a rational choice that would help them achieve their life goal of becoming an adult elite sport performer. However, within six months most participants genuinely thrived in their transfer sports. Several discussed enjoying the attention they received as an emerging talented athlete in their transfer sport when competing at national level. They also loved winning again. The following passages provide further insights into these experiences:

*I actually really liked the simplicity of rowing. First across the line wins. You cannot hide. It is competitive in the way that you always know who exactly wins. You know who was 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> which for me is the most important thing. (P3)*

*I pretty soon just stopped missing*

*swimming. Well, I did really miss the people pretty much but nothing about the sport itself, nothing at all, and I just got over it, moved on, and was soon competing in lacrosse at a higher level that I had ever done in swimming. (P4)*

*After taking up swimming, I quickly progressed from competing in local competitions to making national age finals where I was up against all the best across Australia. (P5)*

*It was tough. It was a hard decision because from a young age I had such passion for both sports, but I suppose netball for me was the one that I really thought I could make the grade in at the highest levels and I had no time to waste anymore so decided I had to fully buy in and start getting used to the day-to-day training and competition protocols. (P6)*

### **Internalization and Acceptance of Transfer Sport**

Every participant had now successfully navigated their “career crossroads” and committed fully to their transfer sport. They had made the decision to invest fully in their transfer sports and no longer were persisting with their primary sports. They perceived themselves to be once again a happy, satisfied and contented athlete. All were again highly intrinsically motivated, single minded and fully engaged in securing sporting excellence in their new sports. Their transition from their primary to the transfer sport was now complete and they each had strategic plans in place to accomplish their vision and ambitions. For example, participant eight could see a clear path to achieving elite adult sport status:

*I have the very best coaches and teammates to work with and to push me to reach my dream; and how to best use them to help me reach my goals is very much at the*

*front of my plans. (P8)*

Another important finding was that the transfer sport was fully endorsed and encouraged by the participants' inner circle of family and close friends. This strong sense of support helped them considerably with the transitioning into their new sports:

*Well, most of my family think it is funny, so yes, they make jokes about how big my legs are, and oh you are so strong, and oh let's get the weightlifter to do it, and so it is kind of a joke in my family, but I just laugh it off. (P1)*

*Well, mum and dad are proud of me, and they keep spreading the word about how well I have done, and they tell my family overseas, and they say well your cousin is doing weightlifting really well now, and I get embarrassed by the fuss. (P2)*

*Lacrosse is the perfect type of sport for me as it is high intensity, it is high work rate, it is in the team environment, so I think that well matches the type of person I am. I am happy and so are my family and friends. (P4)*

The significance of quick success to adolescent elite sport status and being selected for national and international competitions in the new sport was motivational for all participants. It was clear how such opportunities played a leading role in participants' final decisions to ultimately transfer:

*Thinking purely in terms of making international teams and going on and competing in global competitions, then I totally made the right decision to switch from footie [AFL] to swimming. (P5)*

*My sole aim and motivation is now to represent my country in high jump at the Commonwealth and Olympic Games. The feeling that I would get in representing Australia at this level would be quite something. (P8)*

## Discussion

This may be the first study to focus specifically on high performing adolescent athletes who successfully navigated the TT process during their adolescence. Beyond providing purely descriptive accounts of what participants perceived to be facilitators and barriers to their transfer success, the study extends current knowledge of the TT process by focusing on the capture of rich and detailed accounts of their underlying motivations for transferring from one sport to another. The study carefully considers and relates personal stories of adolescent athletes who successfully transitioned from elite status in one sport to another on the international level.

All participants encountered early success in their primary sports as adolescents, yet this early potential and national level of success soon plateaued (Ford et al., 2011). In this study, we were able to highlight how several participants were early developers who had relied heavily on their physical maturity and attributes to outperform opponents. They peaked early, but their peers soon caught up by the early teenage years (Viru et al., 1999). The majority struggled with this transformation with consequent dips in motivation, performance, and confidence levels (Brady, 2004).

For all, realization came that securing elite senior level sporting status may be more likely accomplished by transferring into another sport. It was noticeable how participants at all stages of their early sports careers were outcome focused and especially savored success and winning (Gaudreau et al., 2009). It was as young teenagers that their approach to sport became progressively strategic and considered (Hayman et al., 2019). With the full support of close family and friends, they ceased participation in their primary sports for purely extrinsically motivated reasons; they wanted to make a successful transition into elite international sport performers. In this study all participants had deep-rooted extrinsic motives to compete at the highest possible levels in sport. Their efforts were now focused towards achieving immediate success in their new sport.

Transferring to a new sport was initially

challenging for all, with several struggling to find their identities in the new sport. A key finding was that the internalization process took some time and that the participants felt unskilled and no longer sure they had made the right choice. However, early competition performance improvements and positive feedback about their sporting potentials from significant others helped the transfer process to the new sport, even though in the participant's narratives their athletic identity was still associated with their primary sport. We argue that this was because they could see that it was now again possible to achieve their life sporting goals of representing Australia at international competitions.

Although initially their motivation to participate in the new sport was externally driven, rapid skill learning and competition successes led to perceptions of higher levels of self-efficacy. Such a finding is similar to the educational literature in which higher levels of self-efficacy are associated with increased intrinsic motivation. This enhanced intrinsic motivation in turn was shown to have increased task engagement and learning (Bandura, 1993).

Although participants reported increased enjoyment in their new sport, their motivation in this period could be characterized as introjected or identified extrinsic motivation (Vallerand & Ratelle, 2002). Vansteenkiste and Deci (2003) showed that introjected motivation can result in high levels of persistence and commitment akin to intrinsically motivated individuals. Identified extrinsic motivation in the present context refers to the acceptance and valuing of sport duties and responsibilities. This would include the acceptance of long training hours and monotonous repetition of motor movements. It became clear that the participants were prepared to do this because of the realization that this would lead to achieving their life goal of successful transition to adult elite sport performer with the associated social status and recognition. To date it is unclear whether such motivational orientation is developmentally appropriate and whether affinity for the sport is required for its long-term engagement.

Most TT studies have been exploratory and

a-theoretical in nature. The findings of the present study on TT in adolescents suggest that several existing theories might be useful in explaining the TT process. This includes Self-Determination Theory (e.g., Ryan & Deci, 2007) and Social Cognitive Theory (Bandura, 1997). Hence, participants' motivational orientation appears to determine whether they chose to transfer to another sport in early adolescents and also their continued motivation in the transfer sport. In this study, adolescent elite athletes' motivation for sport participation appeared to be influenced by extrinsic reward of winning and approval by significant others. Particularly, early success and perception of physical self-efficacy were likely to be a determinant to engage in significant training in terms of volume and effort in the transfer sport.

We considered the above theoretical assumptions and based on those considerations and our findings we propose The Adolescent Sport Talent Transfer stage model (ASTT-stage model; see Figure 1), which describes the transfer processes of adolescent elite athletes from their primary sport to another. This four-stage model is framed by adolescent elite athletes' overarching long-term goal of becoming a successful adult sport performer with a desire to represent their country (Australia).

The first stage is called *Primary Sport Rejection Stage*. In this study, most participants were successful early on in their career in their primary sport due mainly to being an early developer. The maturation of other competitors and peers resulted in decreased sporting success. Together with repeated sport injuries, adolescents in this stage realized that their life goal of becoming a successful athlete would be thwarted. This made them susceptible to transfer to another sport.

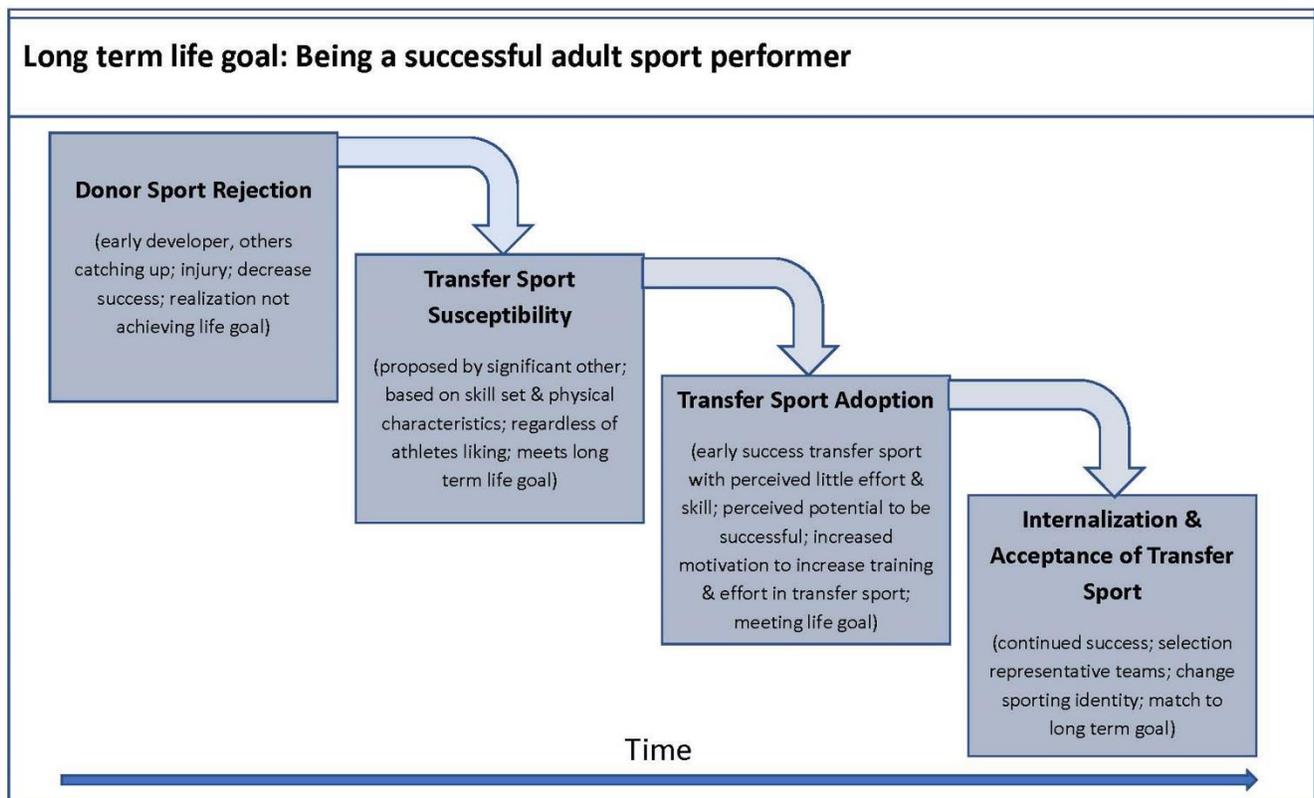
The second stage, the *Transfer Sport Susceptibility Stage*, will help researchers identify what factors makes adolescent elite athletes consider transfer. In this unstable state, significant others (e.g., coaches, parents) propose to the athletes that they transfer to a different sport. This advice appears to be based on significant others' view of the skills set and

physical capabilities of the adolescents, which proposers see as a relatively easy transfer to the new sport. This advice by significant others in many instances was provided without concern for the athletes' potential liking of the new sport. However, such advice aligned with the athletes' long-term goal of being a successful adult elite sport performer.

The *Transfer Sport Adoption Stage* is characterized by early successes in the newly adopted sport, such as winning key competitions and receiving feedback about their sporting potentials from significant others. Success was achieved despite the athletes' perceptions that they put relatively little effort into the new sport and that their perceived skill levels were still

relatively basic. However, in winning and doing well in the adopted sport elite adolescent athletes in this study realized that they could be successful in the transfer sport and achieve their long-term life goal of transferring to adult elite athlete state. This enhanced their motivation to increase training volume and raise their efforts in their new sport.

The *Internalization and Acceptance of Transfer Sport Stage* was characterized by continued successful experiences, including selection for national and international representative teams. In this stage, participants in this study started to acknowledge that the transfer sport was now more important to their sporting identity than the primary sport.



**Figure 1.** Adolescent Sport Talent Transfer model (ASTT-model): The four transitions talented adolescent athletes travel from their primary to transfer sport

The ASTT-stage model will have some important implications for those working with adolescent athletes, as it provides a testable model for understanding elite adolescent athletes' journey when they transfer to a new sport at this important developmental stage in

their lives. In the Transfer Sport Susceptibility stage of the model, future research should study the social support and sources of motivation from significant others. In the Transfer Sport Adoption stage, successful experiences need to be further understood, in particular what kind of

success exactly are motivating athletes to persevere with the transfer sport. How does their athletic identity alter across this change, in particular, but also through the transfer process?

This study is not without limitations. Although the participants' recall period was short, we relied on retrospective recall to explore the transfer process. Validation of participants' accounts with those of coaches, peers and parents would have further strengthened the study. That said, the TT for the adolescent athletes occurred relatively recent to the commencement of the interviews for this study, potentially resulting in less forgetfulness and bias. However, there is a need for longitudinal studies to investigate TT. In addition, we interviewed only a small number of athletes who made a successful transition, making generalizations difficult.

In conclusion, the study findings provide new information on TT in adolescent elite athletes. We believe that the ASTT Stage model could be used by researchers to understand sport transfer in adolescent elite athletes. Future longitudinal studies of adolescent elite athletes' who transfer should be conducted. In addition, the model has potential practical implications and could help coaches to guide high performing adolescent athletes successfully through the TT process.

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### Author's Declarations

The authors declare that there are no personal or financial conflicts of interest regarding the research in this article.

The authors declare that they conducted the research reported in this article in accordance with the [Ethical Principles](#) of the Journal of Expertise.

The authors declare that they do not have permission to make the dataset publicly available.

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