Myths and Mysteries of Athlete Development: Parents' Perspectives

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Abstract

Sport Wales are shifting their focus from winning medals to the development of athletes, and with it recognise that parents are key stakeholders who may influence the effectiveness of this new initiative. Previous research has discovered that parents can influence athlete development both positively and negatively, but parents' perceptions of athlete development and how such perceptions are developed is unknown. Therefore, the purpose of the current study was to examine parents' perceptions of athlete development, and how they developed such perceptions, to understand how parents may aid or impede Sport Wales' new initiative. Specifically, this study sought to understand areas of parent's perceptions of athlete development that may require particular attention or focus when moving forwards in implementing the new initiative designed by Sport Wales. This study was conducted using a Mixed Methods approach. A survey was conducted with 116 participants (M age = 46.6yrs, SD = 7.3yrs). Six categories of factors were included in the survey (the athlete's skills and characteristics, parental involvement, coaching, training, socio-environmental factors, and demographics). Data collected through the survey was analysed using IBM SPSS (version 24.0). Thereafter, semi-structured interviews were conducted with 10 participants (M age = 48.7yrs, SD = 4.9yrs). Interviews were audio recorded and transcribed verbatim. Subsequently, transcripts were analysed using data analysis procedures detailed by Miles, Huberman, and Saldaña (2020). The data collected across the interviews were analysed within the pre-determined categories that provided the structure of the survey. Results revealed significant differences in the perceptions of importance between the categories in relation to their influence on athlete development. The athlete's skills and characteristics, parental involvement, and the coaching the athlete receives were viewed as having a statistically stronger (perceived) influence on athlete development. Conversely, training, socio-environmental factors, and demographics were perceived by parents as being significantly less influential on athlete development. Such was further supported by the qualitive results.

Declarations

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed. [redacted] .....

Date..... 29/04/2024 .....

This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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I hereby give consent for my thesis, if accepted, to be available for electronic sharing

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The University's ethical procedures have been followed and, where appropriate, that ethical approval has been granted.

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Contents

Introduction

Following the Birmingham 2022 Commonwealth Games, Sport Wales (the national organisation responsible for developing and promoting sport and physical activity in Wales) introduced a new initiative, shifting their focus from producing medal winners to the development of athletes, impacting more athletes, and developing them as people as well as performers, through the fulfilment of thriving environments. To achieve this, Sport Wales along with the Sport Wales Institute (a team of professionals from multiple disciplines) implemented five principles: provide those who have a desire to improve with opportunities to progress in sport; encourage young athletes to participate in as many sports as possible, for as long as possible; create thriving environments where all athletes can develop and feel like they belong across the system; sport participation playing a part in developing the athlete as a person, not just a performer; and finally, transparency of athlete development, impacting the system more widely.

Athlete development is often referred to as the long-term development of a child into an athlete (Baker et al., 2022; Balyi & Hamilton, 2004; Balyi et al., 2013; Ford et al., 2011; Lloyd & Oliver, 2012) and is often considered through a range of related topics; for instance, athletic, talent, psychological, social, academic, and vocational development (Wylleman & Lavallee, 2004). Many factors may influence an athlete's development and so, considerable attention has been given to identifying such factors. Specifically, previous research has discussed the influence of relative age effect (Gil et al., 2014; Romann et al., 2018; Wattie et al., 2015), genetics (Naureen et al., 2020; Rees et al., 2016), physical and psychosocial skills (Henriksen et al., 2009; MacNamara et al., 2010; Rees et al., 2016), deliberate practice vs. play (Cote et al., 2012; Ford et al., 2013; Moesch et al., 2013), sampling vs. specialising (Hayman et al., 2014; Hayman et al., 2011; Coutinho et al., 2014), coaches (Kipp, 2018; Knight, 2019), and parents (Côté, 1999; Harwood et al., 2019; Pankhurst et al., 2013; Sweeney et al., 2022) on athlete development.

Parents of young people involved in sport are recognised by Sport Wales as key stakeholders who will ultimately influence the implementation and effectiveness of their new initiative, and it becomes clear as to why when reviewing the research surrounding parental involvement in sport, and more specifically, parental involvement in athlete development. For instance, the role in which a parent takes in their child's sporting life significantly influences the athlete's

overall experience in sport (Knight et al., 2023), and such influence can be positive or negative (Fraser-Thomas & Côté, 2009; Knight et al., 2010; Wolfenden & Holt, 2005; Wuerth et al., 2004). Specifically, higher parental involvement often benefits an athlete's success rate (Coté, 1999; Fredricks & Eccles, 2005; Smoll & Smith, 2012; Wuerth, Lee, & Alfermann, 2004) and can significantly influence well-being (Berrow, Knight & Hudson, 2018; Bois, Sarrazin, Brustad, Trouilloud, & Cury, 2002; Horn & Horn, 2007). Moreover, parental encouragement and praise increases intrinsic motivation and enjoyment, as well as physical competence (Atkins et al., 2013; Collins & Barber, 2005; Fraser-Thomas & Côté, 2009; McCarthy et al., 2008; Ullrich-French & Smith, 2006). In comparison, parental pressure, such as a parent who focusses on winning and criticises or punishes poor performance has been linked to reduced self-confidence and perceptions of competency, increased performance anxiety, burnout, and discontinuation from sport (Bois et al., 2009; Collins & Barber, 2005).

Previous research has consistently emphasised the influence parents have within the development of athletes (Côté, 1999; Harwood et al., 2019; Pankhurst et al., 2013; Sweeney et al., 2022). Parents play a role in their child's development throughout their sporting life and adapt their involvement to further benefit the athlete where necessary (Côté, 1999; Wylleman et al., 2007), highlighting the importance of parental involvement in all stages of athlete development.

In this case, a parent's involvement may either advance or suppress athlete development depending on the practices the parent uses with their child and the support they provide their child throughout their sporting life (Fraser-Thomas & Côté, 2009; Knight et al., 2010; Wolfenden & Holt, 2005; Wuerth et al., 2004). For instance, parental encouragement prior to, during, or post training can increase the athlete's intrinsic motivation to continue to attend sessions and exert maximal effort, developing their skills further and therefore, enhancing physical competence, that in turn, results in a higher success rate at competitions (Atkins et al., 2013; Collins & Barber, 2005; Fraser-Thomas & Côté, 2009; McCarthy et al., 2008; Ullrich-French & Smith, 2006).

However, Sweeney et al. (2022) suggested that parents often appear unaware of their role in their child's development as an athlete. Subsequently, the extent to which parents are able to engage with their children in informed ways regarding development or make developmentally appropriate choices regarding their child's sporting involvement (a key tenant of sport parenting expertise; Harwood & Knight, 2015) may be limited, which creates a significant barrier to long-term athlete development (Sweeney et al., 2022). For instance, if a parent was punishing the athlete following a poor competition performance, it is likely that the athlete

would consequently suffer from reduced self-confidence and increased performance anxiety, ultimately experiencing burnout and the discontinuation of any further development as an athlete. (Bois et al., 2009; Collins & Barber, 2005).

If parents were to gain a thorough understanding of athlete development, it is possible their positive influence on such could increase. To optimise parents' knowledge, an understanding as to how parents perceive athlete development and how they access such information is required to provide tailored and specific guidance that explicitly addresses any areas of misunderstanding. Therefore, if such information or guidance is informed by an understanding of why parents possess such perceptions or what has influenced the development of their perceptions, the support that can be provided can be further enhanced.

Subsequently, the purpose of the current study was to examine parents' perceptions of athlete development, and how they developed such perceptions, to understand areas that may require particular attention or focus when moving forwards in implementing the new initiative designed by Sport Wales.

Literature Review

This chapter provides an overview of: (a) Sport Wales approach, (b) athlete and talent development, (c) models of athletic development, (d) factors influencing athlete development, (e) parents' perceptions of athlete development, and (f) the research aims.

Overview of Sport Wales Approach

Historically, Sport Wales has focused on providing resources to a limited number of sports (Sport Wales, 2022). However, gaining insight from across the Sport Wales institute has highlighted that many athletes are experiencing environments that are not thriving and the longer an athlete remains within that sport, the less likely they are to recommend it to others (Sport Wales, 2022). Therefore, Sport Wales (2022) aimed to encourage collaboration across the sporting system in Wales, providing governing bodies of different sports with the opportunity to learn from one another and share resources to focus on creating excellent environments where athletes can thrive.

In 2022, Sport Wales Institute introduced a new approach to providing support. Specifically, they shifted their focus from only supporting athletes who were likely to produce medals at international events, to focusing upon the development pathway and distributing support to children and young people throughout the performance pathway (Sport Wales, 2022). To do this, Sport Wales (2022) identified five key elements to focus on: Provide opportunities to progress in sport to those who have a desire to improve; encourage young athletes to participate in as many sports as possible, for as long as possible; creating thriving environments where all athletes can develop and feel like they belong across the system; sport participation playing a part in developing the athlete as a person, not just a performer; and transparency of athlete development, impacting the system more widely.

Sport Wales (2022) introduced such principles because they believe that whilst winning medals is important, how medals are won should be prioritised. Therefore, Sport Wales focused on encouraging a system that puts the individual at the heart of decision making, supporting environments where there are equal opportunities to pursue athletic goals, and ensuring a positive experience in sport (Sport Wales, 2022). Hence, Sport Wales (2022) aspire to create a system where people collaborate and learn from one another, directly impacting the experiences of people involved in sport.

With regards to principle one - to provide opportunities to progress in sport to those who have a desire to improve (and ensure the only barrier to sporting success is potential) - Sport Wales (2022) are encouraging people from all communities to explore their sporting potential. Sport

Wales (2022) aim to focus equally on those with sporting potential that have had the opportunity to progress in sport and those with sporting potential that have not had the opportunity to progress in sport. Resultantly, engagement in sport would be representative of the Welsh population (Sport Wales, 2022).

Related to principle two, Sport Wales (2022) aim to retain athletes' participation in as many sports as possible, for as long as possible. To achieve this, early specialisation will be avoided with increased exposure to multi-sport experiences, as well as appropriate competition experiences. Overall, therefore, providing an increased number of opportunities in sport in order to prepare people for a lifetime of physical activity and exercise (Sport Wales, 2022). Ultimately, Sport Wales (2022) wish to encourage individuals to experience multiple sports, reporting positive experiences in training and competitions, increasing the likelihood of remaining in sport for an extended period, and encompassing the shift of focus from creating successful youth athletes, to the development of youth athletes.

The third principle relates to a thriving environment. A thriving environment in which all athletes can succeed and develop is an environment where individuals perceive themselves to be developing as an athlete in a supportive environment, with a sense of belonging regardless of background (Sport Wales, 2022). Ultimately, allowing people to express their true self without fear of judgement. Accordingly, Sport Wales (2022) believe such an environment should be characterised by individuals possessing autonomy, whilst simultaneously building rapport with other stakeholders, and resultantly experiencing enjoyment.

The fourth principle recognises that sporting experiences play a part in developing the athlete as a person, not just as a performer, and that sport enables people to achieve their highest potential in life (Sport Wales, 2022). Sport Wales (2022) acknowledge that every person, and their sporting journey, is unique, but all should progress in or dropout of sport with a clear understanding of the skills and behaviours they have developed as a result of such experiences. Such an aim requires key stakeholders within sport to demonstrate to athletes the skills and behaviours that they have developed throughout their experience in sport, in order for individuals to apply such skills and behaviours into all other areas of their life.

Finally, transparency and sharing of athlete development information and strategies are perceived to impact the wider system within Sport Wales. Therefore, Sport Wales (2022) has a desire for different sports to collaborate and share environments, thereby creating a transparent system. Open access to information will be provided to all interested stakeholders (e.g., parents, coaches, and athletes), creating opportunities for stakeholders to expand their knowledge surrounding athlete development (Sport Wales, 2022).

In considering the key stakeholders within youth sport, Sport Wales recognises the critical influence of parents (Côté, 1999; Harwood et al., 2019; Pankhurst et al., 2013; Sweeney et al., 2022). Specifically, Sport Wales understand that the extent to which parents perceive principles of athlete development more broadly, will influence the implementation and effectiveness of this new initiative. Subsequently, it is essential to discover parents' current perceptions of athlete development, and how they developed such perceptions, to understand areas that may require particular attention or focus moving forwards. Prior to this, it is first important to consider what literature is available pertaining to athlete development and specifically how this research aligns with the underpinning philosophy of Sport Wales.

What is Athlete Development?

Athlete Development vs. Talent Development

Athlete development is often referred to as the long-term development of a child into an athlete (Baker et al., 2022; Balyi & Hamilton, 2004; Balyi et al., 2013; Ford et al., 2011; Lloyd & Oliver, 2012). That is, a child beginning to participate in sport, and over time developing the necessary physical and emotional characteristics, increasing their ability and skill level within a sport or multiple sports, and continuously evolving into a competitive athlete.

In comparison, talent development refers to the quality (or qualities) identified at an earlier time that promotes (or predicts) exceptionality at a future time (Cobley, Schorer, & Baker, 2012). Specifically, emphasising talent discovery, with the focus surrounding the assessment of the prerequisites for athletic excellence (Gould et al., 2002; Hohmann and Seidel, 2003; Holt and Dunn, 2004; Howe et al., 1998; Lidor et al., 2009) or the training required to reach top-level performance (Côté et al., 2009; Stambulova, 2009). Baker et al. (2022) suggested that athletes may be selected through the demonstration of enhanced performance or a desirable, sport-specific marker (e.g., early success in performance shows potential). Alternatively, athletes may be selected for characteristics that are desirable to the recruiter making the selection (e.g., by appearing 'coachable') (Baker et al., 2022). Therefore, talent development is the development of such desired sport-specific markers.

However, athlete development is often considered through a range of related topics, such as talent development (Baker et al., 2023). Baker et al. (2022) highlighted the relationship between athlete and talent development when explaining that in many sports, athlete development involves a series of talent identification and talent selection decisions to reach subsequent phases of development. Contrastingly, athlete development and talent development vary in terms of their emphasis on personal growth, lifelong sport involvement, sport-specific

expertise, and performance excellence (Baker et al., 2023). The differences in approaches to understanding the development of sport participants highlights the need for further research.

Models of Athletic and Talent Development

In considering the development of athletes or talented athletes, numerous models have been produced. One of the first models of athlete development was introduced by Sanderson in 1989, who considered the growth and maturation processes of young, development athletes and suggested that developmental age is a crucial factor in athlete development. This created a shift in the literature, recognising that athletes develop at different rates, which is dependent upon their biological and psychological attributes (Sanderson, 1989). Subsequently, numerous models of athlete development have been created (Balyi et al., 2013; Cote & Vierimaa, 2014), typically with a focus on the needs of participants at their individual stages of development. Moreover, these models typically recognise that at each stage, physical (e.g., genetics), psychological (e.g., self-efficacy), social (e.g., parental involvement) and other environmental factors affect a person's ability to participate, train, and compete in sport (Balyi et al., 2013). This broadly aligns with Bronfenbrenner's (1977) bioecological theory, which explores the relationship between genetics and the environment and how this impacts development. Bronfenbrenner's (1977) model suggests that the parent-child relationship is the most influential to an athlete's development, and that these relationships are affected by various levels of environmental contexts.

Two athlete development frameworks or models that have gained considerable attention are the Developmental Model of Sport Participation (DMSP) (Cote & Vierimaa, 2014) and the Long-Term Athlete Development (LTAD) framework (Balyi et al., 2013), both of which focus on athletes in earlier stages of development.

DMSP

Expanding on this, the Developmental Model of Sport Participation (DMSP) identifies two distinct developmental pathways, composed of elite performance through early specialisation in a single sport, as well as elite performance through the sampling of several sports. Reaching elite performance through sampling involves athletes passing through three developmental phases: the sampling years (6–12 years of age), the specialising years (13–15 years of age) and the investment years (16+ years of age), with a progressive narrowing of sport focus during these stages (Côté, Baker, & Abernethy, 2007). Despite this, it is equally important to recognise that in sports, such as gymnastics, where peak performance is achieved before biological maturity, early specialisation may be necessary to reach elite level (Rees et al., 2016). Early specialisation occurs when individuals engage in their primary sport at a very young age (e.g.,

6 years of age) and are subjected to an extensive number of hours of deliberate practice, which continues into adulthood, rather than sampling other sports throughout their childhood (Côté et al., 2007).

Law et al. (2007), produced evidence supporting this early specialisation pathway, where it was discovered that Olympic gymnasts had averaged participating in less than two other sports between the ages of 6 and 12 years, whereas lower-skilled international gymnasts participated in an average of three other sports. Consequently, by 16 years of age, the Olympic gymnasts had accumulated almost three times the amount of deliberate practice in gymnastics compared to the international gymnasts (Law et al., 2007). However, the research study by Law et al. (2007) was conducted retrospectively, and these methodologies require the participants to recall their experiences, which becomes prone to error, inference, and generalisation on the part of the participants (Ford et al., 2009).

A limitation of the DMSP model is that the general focus is centred around athlete development and fails to take talent development into account, nor the relationship between the two. Moreover, there is little mention of the effect of the surrounding environment on such factors they have identified as influential to athlete development, highlighting a gap in the literature.

LTAD

Balyi and colleagues (1995) developed the LTAD model which at the time encompassed four stages, with the aim of enabling all participants in sport to reach their potential through positive experiences. Balyi and colleagues (2007) evolved the model into a practical pathway, the aim of which being to guide the participation, training, competition, and recovery within sport from infancy to adulthood. The model focusses on the athlete's needs across individual stages of development, for those participating in physical activity or performance sport, whilst recognising the physical, psychological, social, and environmental factors that may impact athlete development (Balyi et al., 2013). The model was developed to encompass seven stages of the framework for an optimal sporting pathway; active start; fundamentals; learn to train; train to train; train to compete; train to win; and active for life (Balyi et al., 2013).

Although the LTAD is centred around previous research regarding human development, there is difficulty in assessing the effectiveness of the framework (Balyi et al., 2013). Therefore, there is a distinct lack of experimental data to support the long-term model. Balyi and colleagues (2004) underline that the LTAD is based on empirical observations, which although well informed, lack scientific validity. Subsequently, the model received criticism from practitioners (e.g. Bailey et al., 2010), highlighting the need for a scientific examination of the LTAD model.

Ford et al. (2010) conducted a review of the LTAD model with the aim of examining the physiological components associated with the trainability aspect of the model to directly evaluate the overall concept. The authors discovered that the LTAD model succeeds in offering practitioners a coaching framework and advancing their understanding of physiological principles and biological maturation within the training of young athletes (Ford et al., 2010). However, when reviewing physical literacy, aerobic, and anaerobic performance, there is little evidence to support the model, possibly due to the number of physiological factors that influence performance (Ford et al., 2010). In addition, it is essential to consider individualisation when developing an effective training programme (Norris & Smith, 2002), which Ford and colleagues (2010) discovered to be a further limitation of the LTAD model.

Holistic Approaches to Athlete Development

Holistic Athlete Career Model

In contrast to the aforementioned models, which typically focus explicitly upon the sporting development of athletes, a series of models relating to both athlete and talent development have taken a more holistic approach to development. Specifically, in 1999, Wylleman and colleagues discovered that there are numerous stages and transitions that athletes may face through their development across various aspects of their life. Recognising that these factors overlapped and influenced athletes' experiences and development, Wylleman and Lavallee (2004) subsequently highlighted the need to consider athletic, psychological, social, academic, and vocational development to better understand athlete development. This Holistic Athletic Career (HAC) model (see Figure 1) has received substantial research attention (e.g. Henriksen et al., 2010; Huffman, 2016; Vasileiadou, 2016) and has subsequently been developed by Wylleman and colleagues over time (2011, 2013, 2016).

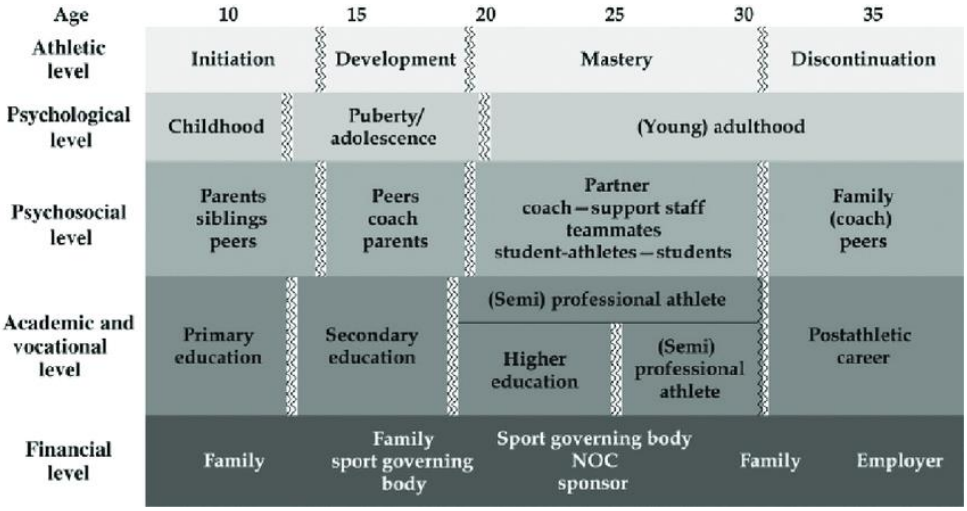


Figure 1. *A developmental perspective on transitions faced by athletes at athletic, individual, psychosocial, and academic/vocational levels.*

The first level of the HAC model represents the numerous stages and transitions that an athlete might face during their athletic development, including: (a) the initiation stage during which the young athlete is introduced into organized competitive sports (six to seven years of age); (b) the development stage during which the athlete is recognized as being athletically gifted and training and competition intensify (12 to 13 years of age); (c) the mastery stage in which the athlete participates at the highest competitive level (18 to 19 years of age); and (d) the discontinuation stage which describes the elite athlete's transition out of competitive sports (28 to 30 years of age) (Wylleman & Lavallee, 2004). The model has since been further developed by elaborating the discontinuation stage into four within-stages (i.e. planning the career end, the actual retirement, the start of the post-athletic career and the reintegration into society) and by adding stages of financial development (Wylleman et al., 2011). The second level of the developmental model reflects the normative transitions which may occur psychologically, such as the developmental task of becoming psychologically ready for competition during childhood (Wylleman & Lavallee, 2004; Wylleman et al., 2013a). The third level is representative of the changes that may occur as the athlete develops psychosocially and denotes those individuals who are perceived by athletes as being significant during that transition (e.g., parents, coach). (Wylleman & Lavallee, 2004; Wylleman, Reints, & De Knop, 2013a). The academic and vocational levels, which for some is education and a vocational career but for elite athletes, may be a professional occupation in the field of sport and, thus, may concur with the athletic mastery stage (Wylleman & Lavallee, 2004; Wylleman, Reints, & De Knop, 2013a). Athletes will also face transition at a financial level (Wylleman, 2016). As previously discussed, an

athlete may enter the mastery stage and secure a professional occupation in the field of sport (Wylleman & Lavallee, 2004; Wylleman, Reints, & De Knop, 2013a), but that does not ensure the athlete is financially self-sufficient (Wylleman, 2016). Many athletes require continued financial support from significant others (e.g. parents) (Reints, 2011).

The HAC model became the dominant framework to study athletes' dual careers (DCs). An athlete with a DC has a focus on sport whilst also in studies or work (Stambulova & Wylleman, 2014), and consists of DC transitions. The HAC model is used in research surrounding DCs and pathways as DC transitions are inevitably associated with challenges and changes in all other domains of an athletes' development (psychological, psychosocial, physical, and financial; Stambulova & Wylleman, 2015). Vasileiadou (2016) utilised the HAC model to conduct a review into the main benefits associated with participation in Dual Athlete Career Programmes (DACPs) internationally, and found that to successfully develop and implement DACPs, further research into coordinating stakeholders' involvement is needed as continuous communication and cooperation among stakeholders may increase the effectiveness of programmes. In addition, Vasileiadou (2016) found further evidence to support that DCAPs are heavily dependent on the economic situation of a country (Stambulova and Ryba, 2013b).

The HAC model aligned with earlier research confirming that athletes encounter different transitions throughout their athletic career (e.g. Côté, 1999). It also introduced the need to take a developmental approach in combination with a holistic approach when considering athlete development. However, whilst the model recognises the complexity of athlete transitions, a limitation is that it does not take into consideration the fluidity of cultural contexts of which the athletes are part of and should be adapted specific to the nation to further facilitate to development (Wylleman & Rosier, 2016).

Talent Development Environments (TDEs) and Athletic Success Factors

Considerable literature highlights the importance of implementing effective talent development environments throughout athlete development pathways (Hauser et al., 2022; Henriksen, et al., 2010; Henriksen, et al., 2011; Larsen et al., 2013; Martindale et al., 2010). However, as highlighted above, much of the early research in this space focused on athletes only (i.e., without consideration of factors outside of sport). Thus, in 2010, Henriksen and colleagues took a holistic approach to considering talent development, with a particular emphasis on the environment in which this was occurring. Drawing upon the bioecological model (Bronfenbrenner, 1985), the authors conducted a case study surrounding talent development in sailing. This resulted in the development of the Athletic Talent Development Environment working model (see Figure 2).

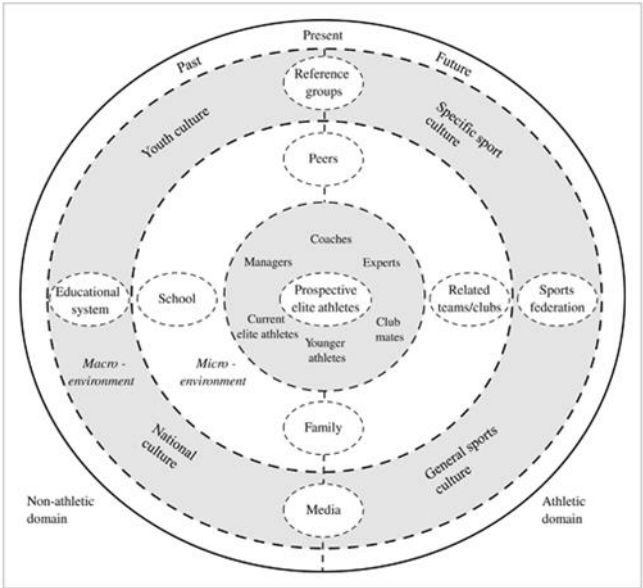


Figure 2. *The athletic talent development environment working model.*

The young athlete is at the centre of the model, and other components of the ATDE are structured into micro-levels and macro-levels, and athletic and non-athletic domains. The micro-level refers to the environment surrounding the athlete, thus, characterised by communication within the club environment, including coaches, peers, and other key stakeholders such as family, as well as school (Henriksen et al., 2010). The macro-level refers to social settings, which affect but do not contain the athletes, as well as to the culture to which the athletes belong such as sport governing bodies and the media (Henriksen et al., 2010). The athletic domain covers the part of the athletes' environment that is directly related to sport (Henriksen et al., 2010). Some of the components clearly belong to one level and one domain (e.g., school), whereas others (e.g., the family) may transcend levels or domains (Henriksen et al., 2010). The outer layer of the model presents the past, present and future of the ATDE, emphasising that the environment is dynamic, and the athletes are constantly changing, and regards the development of an athlete as influenced by the context in which such development takes place (Henriksen et al., 2010). The model is holistic as it includes both the athletic and the non-athletic domain; the micro-level and the macro-level; and the development of the environment.

In addition to the ATDE model, Henriksen and colleagues (2010) also proposed the environmental success factors (ESF) model (see Figure 3), which summarises factors influencing its effectiveness, both representing the holistic perspective of talent development

(Henriksen et al., 2010). Henriksen et al. (2010) identified a micro-environment, which is characterised by the interactions the prospective elite athletes undergo and the way in which they communicate, as well as a macro-environment, which refers to social settings that affect but do not contain the athletes, and to the values and customs of the cultures to which the athletes belong.

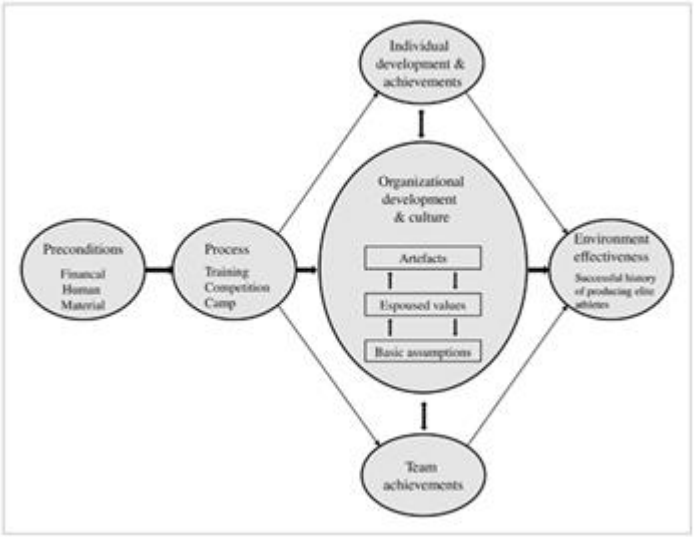


Figure 3. *The environment success factors working model.*

The ATDE and ESF models were tested by Henriksen et al. (2010) in a case study of the successful Danish national 49er sailing team. Henriksen and colleagues (2010) conducted a case study where data were collected from in-depth interviews with administrators, coaches, and athletes, as well as completing observations of training, competitions, and meetings. The study resulted in two empirical models (ATDE and ESF) reflecting the unique characteristics of the environment, which was characterised by a high degree of cohesion, with the relationship between current and prospective elite athletes at the centre (Henriksen et al., 2010). In addition, it was discovered that there was a strong organisational culture, characterised by co-operation, responsibilities, and a focus on performance process (Henriksen et al., 2010). Similarly, Henriksen and colleagues (2009) also applied the models to a successful track and field club. The research method was directly comparable with that used when investigating the sailing team which resulted in two unique empirical models (ATDE and ESF). It was highlighted that the environment was again characterised by a high degree of cohesion, by the organisation of athletes and coaches into groups and teams, and by the important role given to elite athletes (Henriksen et al., 2009). Furthermore, the results showed the track and field club had a strong

organisational culture, characterised by co-operation, with a focus on performance process which overall provided an important basis for the environment's success (Henriksen et al., 2009). Therefore, it is clear to see that there are many consistencies across these two environments, of which both have brought about the development of very successful athletes, highlighting the importance of the environment within athlete development.

The holistic ecological (HEA) approach of the ATDE and ESF models allows the researcher to gather both qualitative and quantitative insights into sporting environments, resulting in the collection of sufficient data to identify key factors contributing to successful sporting environments and facilitating the understanding and replication of such environments. In addition, the ESF model considers preconditions, processes, individual/team development, and achievements that provide a structured framework for understanding a successful ATDE, as well as identifying strengths and weaknesses of specific ATDEs to help to improve upon future environments. However, the HEA approach considers the interplay of various intricate environmental factors, requiring a thorough understanding and analysis. Moreover, it is argued that the ESF model does not display the complexity of talent development environments as each component is multifaceted.

Summary

In considering both the Holistic Athlete Career Model (Wylleman et al., 2016) and the ATDE and ESF models (Henriksen et al., 2010, 2011), it is clear that holistic approaches to considering athlete development are beneficial. Specifically, they highlight the need to consider how individual, social, and environmental factors may influence athletes' opportunities to develop and progress within sport. Thus, this body of research provides support for the revised approach being adopted by Sport Wales. However, whether such an approach is understood by key stakeholders (i.e., parents) remains relatively unknown. Furthermore, what specific individual, social, and environmental factors influence athlete development requires consideration.

Factors Influencing Athlete Development

Over the last few decades considerable attention has been given to identifying the specific factors that may influence athletes' development. Aligned with the approach above, consideration of factors related to the athlete (i.e., the individual), their support network (i.e., parents, coaches), and broader environmental factors have been examined.

The Athlete: Individual Factors

In 2016, Rees et al. (2016) constructed a review of talent development literature, largely centred around the performer themselves, but including both physical and psychological aspects that contribute to the skill set of an athletically talented individual. This review has been used as the basis for this section but has been extended with more recent research.

Relative Age Effect

One factor that was identified as contributing to athletic success was birthdate, due to the relative age effect (RAE). Children and adolescents are often separated into annual age groups to account for developmental differences and, thus, to allow for equal opportunities in a particular sport (Roman et al., 2018). There remains, however, a potential gap of up to 12 months in chronological age between individuals (Romann et al., 2018). Consequently, RAE refers to a biased distribution of athletes' birthdates, with an over-representation of those born at the beginning of any given competitive year, and an under-representation of those born towards the latter end of any given competitive year (Rees et al., 2016). This effect occurs during the early development of youth athletes (Cobley et al., 2009; Musch & Grondin, 2001). RAE may lead to early-born athletes developing further advanced physical abilities compared to their late-born peers, and are, therefore, more likely be identified as talented and more likely to receive intensive training as a result (Cobley et al., 2009; Delorme et al., 2010; Gil et al., 2014; Hancock et al., 2013; Wattie et al., 2015). In comparison, those who are born late in the competition year are more likely to drop out of sports compared to their peers who are born early in the competition year (Delorme et al., 2010; Delorme, et al., 2011).

Although there is evidence to support the fact that relatively older children may have greater chances to succeed in sport (Cobley et al., 2009; Delorme et al., 2010; Gil et al., 2014; Hancock et al., 2013; Wattie et al., 2015), this is not always the case (Law et al., 2007; Rees et al., 2016). For instance, it has been argued that at elite level, the risk of RAE decreases due to differences in physical maturity becoming redundant once a senior level is reached (Cobley et al., 2009; Levfvre et al., 1990). In addition, in gymnastics, where height and mass gain impede flexibility, rotational speed and the strength to mass ratio, delayed maturation has been observed in more highly skilled gymnasts (Baxter-Jones, 1995) and a greater number of younger gymnasts has been reported in high performance contexts (Ste-Marie et al., 2000), portraying that RAE may not be applicable across all sports or ages. Previous research has discovered that higher RAE is most evident in nationally popular team sports (e.g., rugby and football; Doncaster et al., 2020; Gil et al., 2021; Romann et al., 2018) in which competition is greater (Musch & Grondin, 2001).

Genetics

Genetics can be responsible for up to 80% of the variance in numerous sporting abilities such as strength, speed, reaction time, flexibility, balance, and VO2max, and can therefore affect athletic development (Naureen et al., 2020; Rees et al., 2016). Despite a strong influence of heritability on the probability of becoming an elite athlete (> 70%, depending on the sport) (De Moor et al., 2007) or on the phenotypes (characteristics of an individual resulting from the interaction of genotype with the environment) typically associated with performance (Alonso et al. 2014; Simoneau & Bouchard 1995), the search for genetic variants contributing to success in sport has been challenging (Holdys et al., 2013; Tucker et al., 2013; Maciejewska-Skrendo et al., 2019b). With genotyping and deoxyribonucleic acid (DNA) sequencing, several studies have been published focussing on the relationship of genetics and elite athlete status (Ahmetov & Fedotovskaya, 2015; Pickering & Kiely, 2020; Varillas-Delgado et al. 2019). Pickering and Kiely (2020) compared endurance (68 genetic variants) and speed-power (48 genetic variants) genotypes of elite athletes to those of non-elite athletes and discovered that deciphering between the two based on genetic information was not possible, highlighting that the use of such information is not necessary in talent identification.

Physical and Psychosocial Skills

When reviewing the research pertaining to talent development, it is abundantly evidenced that psycho-social aspects of an athlete's skillset contribute heavily to their talent development, as well as atypical physical attributes of an elite performer (Henriksen et al., 2009; MacNamara et al., 2010; Rees et al., 2016). In terms of an athlete's psychological skill, Rees et al. (2016) highlighted that compared to their non-elite counterparts, elite athletes display self-determined forms of motivation, as well as higher levels of confidence, –perceived control, mental toughness, resilience, and a greater resistance to choking. Furthermore, higher performing athletes tend to possess a task motivation orientation and interpret their anxiety as facilitative to their performance, rather than a threat (Rees et al., 2016). Retrospective (e.g., MacNamara et al., 2010a) and longitudinal (e.g., MacNamara & Collins, 2010) studies of athlete development have identified a range of psychological factors that aid the realisation of potential (i.e., Psychological Characteristics for Developing Excellence). Specifically, studies highlighted that the employment of psychological processes (e.g., goal setting, planning, and performance evaluation) aided athletes in benefitting maximally from the opportunities they received to develop. However, research illustrated that young athletes who were engaged in individual sports were more likely to employ these skills themselves from a much younger age,

whereas athletes involved in team sports were found to be older when employing such skills to overcome developmental challenges (MacNamara et al., 2010b). Therefore, it is important to recognise that the application of psychological characteristics of developing as an athlete may vary considerably along different developmental trajectories (MacNamara & Collins, 2012).

More recently, this area of research has gained further attention (e.g. Dohme et al., 2019; Harwood et al., 2015; Pankow, 2021). Specifically, Dohme and colleagues (2019) conducted a review to identify the psychological skills and characteristics perceived to facilitate the development of talented youth athletes. Through thematic analysis, nineteen psychological skills were identified as facilitative of athlete development, eight of these were categorised as psychological skills (e.g., goal setting, social support seeking, and self-talk) and eleven as psychological characteristics (e.g., self-confidence, focus, and motivation).

Pankow et al. (2021) conducted a study to examine the development of the psychological skills and characteristics among National Hockey League (NHL) players. Six NHL players participated in semi-structured interviews, which were subjected to a reflexive thematic analysis (Pankow et al., 2021). Younger hockey players developed interpersonal (teamwork, leadership, and accountability) and individual (work ethic, discipline, and commitment) psychological characteristics within a supportive social environment. During junior hockey, participants developed performance-oriented psychological characteristics (coping, emotional regulation, and confidence) and psychological skills (viewing adversity as a challenge) arising from experience. Finally, professional hockey players developed and refined performance-oriented psychological skills (visualisation, self-talk, and reflection). Pankow and colleagues concluded that building foundational psychological characteristics may facilitate the later development of performance-oriented psychological skills.

In addition, Harwood and colleagues (2015) identified a 5C (commitment, communication, concentration, control, and confidence) intervention to facilitate the improvement of such psychological skills/characteristics. When implementing the intervention with five youth soccer players, players completed self-assessments of their behaviour during training, triangulated with observation-based assessments by the coach and the players' parents (Harwood et al, 2015). Following the intervention, participants indicated psychosocial improvements with cumulative increases in positive psychosocial responses (Harwood et al., 2015).

Training

Deliberate Practice vs. Play

The existing literature indicates that the amount of deliberate practice, or relevant activities completed with the specific goal of improving performance (Ericcson et al., 1993), is a key factor in attributing athletes to a skill level. However, deliberate play, or intrinsically motivating activities that provide immediate gratification and are designed to increase enjoyment (Cote et al., 2007) are also important in the development of expertise in sport (Davids & Baker, 2007; Cote et al., 2007; Cote et al., 2012; Ford et al., 2013; Moesch et al., 2013). Deliberate practice and play are not the only activities that contribute to athlete development and others should, therefore, be considered in further research to obtain a more complete understanding of the development of an athlete (Cote et al., 2007). For instance, researchers have struggled with identifying 'deliberate practice', which has led to the interchangeable use of this term with 'sport-specific practices' (Davids, 2000) when they are in fact different concepts (Coutinho et al., 2016). In fact, in their review, Rees et al. (2016) suggested that there is evidence that more successful athletes have averaged larger amounts of organised sport-specific training (Rees et al., 2016).

Sampling vs. Specialising

Previous studies illustrate that both early specialisation (i.e. investment in one activity and in deliberate practice from a young age) and sampling (early participation in a wide variety of sports with high levels of deliberate play and low levels of deliberate practice) are suitable pathways to reach expertise in sport (Davids & Baker, 2007; Cote at al., 2007; Cote et al., 2012; Ford et al., 2013; Moesch et al., 2013). However, despite the evidence for early specialisation in other literature (Davids & Baker, 2007; Ford et al., 2013; Moesch et al., 2013), Rees et al. (2016) concluded that the key to reaching an elite standard in sport may be for the athlete to be involved in a diverse range of sports during childhood (known as sampling), before specialising in one sport and participating in considerable amounts of sport-specific practice in late adolescence through to adulthood. In addition, a focus on specialised training during the early stages of development has been associated with several negative consequences (Baker, 2003; Baker et al., 2009). Evidence suggests that the intensive training required during early specialisation can increase an athlete's risk of specific types of injury as well as decrease sport enjoyment (Law et al., 2007; DiFiori et al., 2014) and delay psychosocial development as there are reduced opportunities for growth in such areas (Cote et al., 2009; Ward et al., 2007).

A considerable amount of evidence has demonstrated that athletes who had a diversified early sport experience could achieve an elite level of performance in sport (Hayman et al., 2014; Hayman et al., 2011; Coutinho et al., 2014). Therefore, given the negatives associated with early specialisation and the fact that sampling is thought to encourage intrinsic motivation that

stems from the fun, enjoyment and competence children experience through their sporting involvement (Cote et al., 2007; Cote & Hay, 2002; Cote et al., 2009), it is typically suggested that the athletes should not be encouraged to invest in only one sport before they develop the necessary physical, cognitive, social, and emotional skills required to reach an elite level of sport (Henriksen et al., 2009).

Social Influences

When considering the development of athletes, for instance through the HAC or the ATDE model, it is clear that other individuals can influence athletes' development. These include among others, coaches, parents and broader family, and peers/teammates. Other individuals such as agents, sport science support staff, and teachers may also have an influence (Henriksen et al., 2010). However, for the purpose of addressing the research aim of this study, I have focused on coaches and parents as the major influencers.

Parents

In 1999, Côté conducted a study with the aim of assessing the role of family in the development of talent in sport. Specifically, through fifteen open-ended interviews with parents, athletes, and siblings, Côtè identified that during the sampling years, parents provide opportunities for their children to enjoy sport, as well as recognising that their child is talented. Successively, parents make a financial and time commitment to their child's sporting life, therefore, develop a growing interest, and begin to emphasise both school and sporting achievements during the specialising phase. This is then followed by the investment years, where parents show great interest in their child's sport, and help the athlete to fight setbacks that may otherwise hinder talent development. However, parents may also begin to demonstrate different behaviours toward each of their children.

Similarly, Wylleman, Knop, and Verdet (2007) also highlighted the importance of parental involvement throughout athlete development, aligned with the athletic level of the Holistic Athlete Career model (Wylleman & Lavellee, 2004). For instance, during the initiation stage (6-7 years of age) parents introduce the athlete into organised competitive sport, when parental influence has the greatest and most lasting effect on children's sporting involvement (Wylleman et al., 2007). This is because the parents begin providing the young athlete with sporting experiences, introducing the values of sport, which will consequently stimulate and sustain the interest and discipline of the child in sport utilising fun, affection, and pressure to motivate the child. Subsequently, during the development stage (12-13 years of age), parents begin to recognise the athlete's talent, while training and competitions intensify, meaning emotional

support and advice from parents is required to sustain the child's interest in the sport. This is then followed by the mastery stage (18-19 years of age), during which parents are less essential to the athlete's participation, but their moral and increasing financial support remains to be crucial. Finally, Wylleman, et al. (2007) identified that during the discontinuation stage (28-30 years of age), the elite athlete transitions out of competitive sport, and so parents assist their child in coping with this transition.

Overall, it is clear that parents play an important role in the development of talented athletes. However, as research in this area has developed, it has become apparent that parents' involvement in sport is not always straight forward (Fraser-Thomas & Côté, 2009; Knight et al., 2010; Wolfenden & Holt, 2005; Wuerth et al., 2004). Drawing on Eccles' Expectancy Value Theory, Fredricks and Eccles (2004) proposed that parents fulfil three key roles in their child's sporting experience. Firstly, parents are facilitators in providing their children with opportunities in to participate, including financial support and through transportation. Furthermore, parents provide emotional support throughout their children's sporting life, which is regulated by the parents' beliefs regarding value, competency, and enjoyment. Lastly, parents demonstrate appropriate sporting behaviours to their children.

The role that a parent takes significantly influences children's overall experience in sport (Knight et al., 2023), both positively and negatively (Fraser-Thomas & Côté, 2009; Knight et al., 2010; Wolfenden & Holt, 2005; Wuerth et al., 2004). Existing research highlights how parental encouragement and praise increases intrinsic motivation and enjoyment, as well as physical competence (Atkins et al., 2013; Collins & Barber, 2005; Fraser-Thomas & Côté, 2009; McCarthy et al., 2008; Ullrich-French & Smith, 2006). In comparison, parental pressure, such as criticism or punishment of poor performance and focussing on winning has been linked to reduced self-confidence and perceptions of competency, increased performance anxiety, burnout, and discontinuation from sport (Bois et al., 2009; Collins & Barber, 2005). However, such literature suggests parental pressure directed towards an increased effort in sport has the potential to facilitate the athlete (O'Rourke et al., 2011). Therefore, not all parental behaviours can be considered as uniformly negative or positive, and instead depends on how the behaviour are received, which is likely to be dependent upon the child's personality and the parent-child relationship (Knight et al. 2023).

Coaches

Coaches can have a positive or a negative impact on an athlete and their experience in sport (Henricksen et al., 2009; Jowett, 2017; Kipp, 2018; Mageau & Vallerand, 2003; Martindale et al., 2007). Many factors of coaching impact an athlete's experience in sport. For instance, the

coach-athlete relationship is one of the most important influences on athlete motivation and subsequent performance (Mageau & Vallerand, 2003). In addition, the style of coaching that is implemented and the motivational climate created by coaches can also influence athlete development (Mageau & Vallerand, 2003; Knight, 2019). As well as impacting the physical skill of the athlete, such factors of coaching can influence athlete development through impacting an athlete's psychological skills and characteristics (e.g., motivation; Mageau & Vallerand, 2003). In addition, it is argued that the role of the coach becomes increasingly more important as an athlete progresses (Kipp, 2018). Therefore, it is clear that a coach has the potential to influence the development of an athlete (Erickson et al., 2007).

Although many factors of coaching may impact athlete development, the coach–athlete relationship is one of the most important influences (Jowett, 2017) and impacts athlete motivation and subsequent performance (Mageau & Vallerand, 2003). Specifically, Jowett and colleagues (2005) conceptualized the coach–athlete relationship within individual sports as the 3 + 1 Cs model, which comprises of closeness (e.g. the extent to which value, support, and care for each other), commitment (e.g. the coach and athlete's intent to maintain the relationship), complementarity (e.g. how the behaviours of the coach and athlete correspond to each other), and co-orientation (e.g. the coach and athlete establishing common views regarding the athlete's progression).

Corkery and Fletcher (2023) applied the 3 + 1 Cs model in research by conducting semi-structed interviews and observations with female student athletes and their coaches to discover the quantity to which closeness, commitment, complementarity, and co-orientation was experienced in developing the coach-athlete relationship in a team sport. The author's findings highlight that although both the coach and athletes demonstrated how ideas such as closeness and commitment were crucial to the functioning and performance of their team (Davis, et al., 2018; Gano-Overway, 2023), there was evidence of fluidity and contradictions within and between each of the constructs of the 3 + 1 Cs framework (Corkery & Fletcher, 2023) and therefore, reveals both benefits and limitations of the model when applied in a team environment.

Furthermore, Mageau and Vallerand (2003) introduced the Coach–Athlete Motivational Model (CAMM), comprising of four-stages (personal orientation of coaches, contextual factors, perceptions of athletes' behaviour and motivation, and coaching behaviours), where coaches' behaviours influence athletes' intrinsic and self-determined extrinsic motivation through their impact on athletes' perceptions of autonomy, competence and relatedness. At the core of the CAMM is the interpersonal coaching style of autonomy support. Mageau and Vallerand (2003)

outlined that an autonomy-supportive coaching style implies that coaches acknowledge the athlete's perceptions by providing them with choices. The authors identified that such coaching behaviours are linked to enhanced intrinsic motivation and self-determined extrinsic motivation of the athlete (Mageau & Vallerand, 2003). This is because supporting autonomy contributes to the fulfilment of an athlete's basic psychological needs, optimising motivation (Deci & Ryan, 2002; Reeve, 2006; Tessier, Sarrazin, & Ntoumanis, 2010). Furthermore, it has been suggested that support for autonomy consequently internalises motivation (Deci & Ryan, 2002) and motivation has been recognised as a fundamental element of sport which can influence athlete development (Paskevich et al., 2007). In contrast, the more controlling the coaching style implemented, the more likely it is for an athlete to display non-self-determined types of motivation, forcing coaches to rely on such controlling behaviours, which consequently undermines an athlete's intrinsic and self-determined motivation (Mageau & Vallerand, 2003).

Pope and Wilson (2015) applied the CAMM in their study, by examining the four-stage motivational sequence with over 200 female rugby players and discovered that interpersonal coaching styles of autonomy, support, and involvement positively predicted the athlete's basic psychological needs, with autonomy significantly predicting self-determined motivation, which moderately predicted the athlete's performance in rugby. These results support the CAMM as the structure and involvement provided by the coaches were positively associated with optimising the athletic experience (Pope & Wilson, 2015). However, only three of four stages in the CAMM were tested, meaning the model was not examined in its entirety and due to the cross-sectional nature of the present study, the causality of the sequence of relationships proposed by Mageau and Vallerand (2003) cannot be inferred.

Similarly, the motivational climate created by coaches will most likely facilitate the athlete's talent development pathway (Knight, 2019). Specifically, Henriksen and colleagues (2009) examined factors influencing success in developing prospective elite track athletes and identified that coaches who tend to focus on the athletes' long-term development can positively influence athletic talent development. Across the literature, coaches focussing on the long-term development of an athlete and implementing aims based on this, as well as prioritising other aspects of the athlete's physical or psychological progressions, rather than solely their extrinsic successes is seen as essential (Henricksen et al., 2009; Martindale et al., 2007)

Meanwhile, when there are issues in the coach-athlete relationship, it can have negative consequences (Davis & Jowett, 2014; Kassing & Infante, 1999; Lafreniere et al., 2008; Nicholls et al., 2016). For instance, mistrust, dominance, and a lack of respect were found to

be factors that hinder the coach-athlete relationship (e.g., Blanchard et al., 2009; Burke, 2001; Jowett, 2003). If there is a lack of cohesion within the coach-athlete relationship, it is likely that the athlete could experience a lack of enjoyment and therefore, motivation, resulting in a decrease in performance and possible discontinuation of sport (Davis & Jowett, 2014; Kassing & Infante, 1999; Lafreniere et al., 2008; Nicholls et al., 2016).

Parents' Perceptions of Athlete Development

As indicated above, there is clear evidence that parents' play a role in the development of athletes. Recognising the influence parents can have on talent development, substantial research has focused on understanding and enhancing parental involvement (e.g., Coté, 1999; Fredricks & Eccles, 2005; Smoll & Smith, 2012; Wuerth et al., 2004). Given the breadth of research that has been conducted regarding parents, numerous reviews have recently been published. One such review was that by Harwood et al. (2019). The aim of the review was to critique the literature surrounding parental influence on the experiences and psychosocial development of young athletes. Within this review it was identified that the provision of sport-specific information (in relation to technical feedback) from parents enhances the athlete's enjoyment, concentration, and confidence within sport, which are all active agents in developing an athlete. Underpinning this, numerous studies (e.g., Furusa et al., 2018; Knight et al., 2010; Elliott et al., 2018) have highlighted that children want their parents to understand their sport and to engage in conversations with them regarding their sport. Similarly, studies with parents have highlighted their desire for information regarding their child's sport (e.g., Knight & Holt, 2013; Thower et al., 2017) and indicated that a lack of information and understanding can negatively influence their involvement in their child's sport and their own experiences (e.g., Harwood & Knight et al., 2009a, Newport et al., 2021).

However, although parents may want information, and children may want their parents to be knowledgeable about their sport, parents are unlikely to have access to the scientific literature surrounding talent identification and development, or an awareness of how to access such literature (Pankhurst et al., 2013). Thus, the extent to which parents are able to engage with their children in informed ways regarding development, or make developmentally-appropriate choices regarding their child's sporting involvement (a key tenant of sport parenting expertise; Harwood & Knight, 2015) may be limited given that parents indicate attempting to source information online or learning through trial and error (e.g., Burgess et al., 2013; Knight & Holt, 2013).

Existing literature has suggested that parents' understanding of talent development is somewhat limited. For instance, researchers sought to understand similarities or differences in perceptions of talent development between different stakeholders (i.e., coaches, parents, and sports organisations; Pankhurst et al., 2013). Using a questionnaire developed from a thorough review of the talent identification and development literature, Pankhurst and colleagues (2013) surveyed 23 parents who had a son or daughter who had been selected to participate in the Lawn Tennis Association's Talent Identification and Development programme. Overall, the findings showed that talent identification and development research was not familiar to many parents. Specifically, parents felt they were a part of a system with which they were not familiar, but they felt that questioning the system may not be seen to be in the best interests of their child.

Pankhurst and colleagues (2013) further identified that parent's perceptions were based on their observation of their children's experiences in sport. Parents indicated that although they were not previously familiar with the research, they did agree with the key constructs of talent development but believed that the coaches did not (Pankhurst et al., 2013). The coaches' responses indicated that they did support the research view, but the coaches believed that the parents did not (Pankhurst et al., 2013). Therefore, suggesting parents and coaches have different understandings of talent development, thereby indicating a lack of communication between the two groups.

Most recently, a qualitative study was conducted to explore stakeholders' views of talent development (Sweeney et al., 2022). Sweeney et al. (2022) conducted semi-structured interviews with key stakeholders (including parents) within Irish football to identify their perceptions of, and alignment to, talent development principles. The results of the research highlighted that those stakeholders displayed a lack of understanding of the purpose of the talent development pathway (Sweeney et al., 2022). In addition, Sweeney and colleagues (2022) found that those stakeholders demonstrated incohesive relationships between groups (e.g., parent-coach relationships) which was impacting the development of the footballers. These results suggest the need to uncover how stakeholder's current perceptions of athlete development may have changed over time, how they are developing such perceptions, and how this differs across the various groups of stakeholders.

In considering the findings of these studies, it is important to recognise that different methodologies have been used, which may have influenced the insights gained. Specifically, the use of interviews by Sweeney and colleagues (2022) may have provided more opportunities to seek clarification around thinking and to follow the lead of the participants compared to

questionnaires. However, questionnaires will have provided more explicit opportunities for comparison of knowledge and perspectives across stakeholder groups compared to interviews. Therefore, further research is needed to examine how parents access information surrounding talent identification and development to ultimately enable parents to support their child's development as an athlete. Sweeney et al. (2022) suggested that parents often appear unaware of their role in their child's development as an athlete and highlight the need for academies and organisations to implement regular educational workshops for parents to build more positive working relationships tailored toward optimising their influential role. Numerous education programmes have been conducted (see Burke et al., 2021 for review). However, except for a few (i.e., Dorsch et al., 2017; Thrower et al., 2018, 2019) who touched on this briefly, these have not often included information regarding the principles of athlete or talent development. Moreover, they have not been informed by an understanding of the specific knowledge of the parents to whom they are seeking to provide education.

If parents were to gain a thorough understanding of athlete development, it is possible their positive influence could increase. Specifically, such knowledge is essential, as it has been unveiled that an incoherent player pathway and the disjointed relationships between stakeholders are a significant barrier to long-term athlete development (Sweeney et al., 2022). However, if we are to optimise parents' knowledge, providing tailored and specific guidance that explicitly addresses areas of misunderstanding is required. Generic insights may be beneficial, but specifically debunking myths or misinformation is likely to be more beneficial. Moreover, if such information or guidance is informed by an understanding of why parents' have the perceptions they have, or what has influenced the development of their perceptions, the support that can be provided can be further enhanced.

Research Aims

Taken together, the aforementioned evidence shows that athlete development is complex, with numerous factors influencing opportunities for development. Moreover, it is clear that parents play an important role in influencing athletes' development. The extent to which parents are a positive influence in this regard is likely influenced by their knowledge and perceptions of athlete development. To-date, few studies have explicitly examined parents' knowledge of athlete development. Further, little consideration of how parents' have gained this knowledge or developed these perceptions has occurred. Such information is needed so that organisations, such as Sport Wales, can provide targeted and tailored support to parents to enhance their positive influence in their child's sporting development. Therefore, the aim of this study is to

examine parents' understanding of athlete development and identify factors that influence their understanding and perceptions.

Method

Methodology and Philosophical Underpinning

The philosophical underpinning of the current study was based upon both the postpositivist and constructivist paradigms – a dialectical perspective (Greene, 2007; Greene & Caracelli, 1997; Greene & Hall, 2010). Post-positivism is typically associated with quantitative approaches and a singular reality. In comparison, constructivism is typically associated with qualitative approaches and works from a different assumption, that understanding is formed through participants and their subjective views, which are shaped by social interaction and personal experiences (Denzin, 2012). The research study began from the perspective of post-positivism to measure variables and assess statistical results throughout the quantitative phase of the study. The paradigm then shifted to constructivism once the qualitative phase began, valuing multiple perspectives and in depth-description. Therefore, the overall philosophical assumption changed as multiple philosophical positions are used. This dialectical perspective recognises that different paradigms may produce contradictory ideas and these contradictions can contribute to new insights. The final interpretation of the two sets of results is then based on a dialectic involving both sets of assumptions (Greene, 2007; Greene & Caracelli, 1997; Greene & Hall, 2010).

This study was conducted using a mixed-methods approach, which is defined as research in which the researcher collects and analyses data, integrates the findings, and draws conclusions using both qualitative and quantitative methods in a single study (Tashakkori & Creswell, 2007). Specifically, aligned with Creswell (2015), within the current study, a fixed mixed methods design was used, whereby the use of quantitative and qualitative methods was predetermined and planned. Specifically, an explanatory sequential design was adopted. The explanatory sequential design occurs in two distinct interactive phases, beginning with the collection and analysis of quantitative data, followed by the collection and analysis of qualitative data in order to explain or expand on the quantitative results (Creswell & Plano Clark, 2018).

Integration in this explanatory sequential study involved connecting the results from the initial quantitative phase to help plan the follow-up qualitative data collection phase. This plan included what questions need to be further probed and which individuals should be sampled to best help explain the quantitative results and gain a deeper understanding of participants' personal experiences. Despite the quantitative methods occurring first, the emphasis of the study was placed on the qualitative methods, as qualitative data provides rich descriptions of

participant's experiences. This consequently depicts the case-selection variant of explanatory sequential designs (Creswell & Plano Clark, 2018). This variant arises when priority is placed on the second, qualitative phase and is used when the research is focused on qualitatively examining an idea but needs initial quantitative data to identify and provide an opportunity to explore ideas in more detail (Creswell & Plano Clark, 2018).

A mixed-methods design was selected because it draws on the strengths of both and overcomes the weaknesses related to each when used individually (Creswell & Plano Clark, 2018). More specifically, within the current study, the combination of quantitative and qualitative approaches was desired to enable a broad understanding of parents' general perceptions of athlete development to be obtained while also gaining specific insights from parents regarding the reasons underpinning and influencing these perceptions. Such information was deemed necessary to enable Sport Wales to utilise the insights from the study to inform their subsequent guidance and engagement with parents.

Phase 1

Sampling and Participants

Participant recruitment for the quantitative phase, being a survey, initially occurred through the Sport Wales institute, using purposeful sampling (Patton, 2002); whereby potential participants were sampled against specific criteria. Purposeful sampling refers to selecting only the potential participants who have experienced the central phenomenon explored in the study (Creswell & Plano Clark, 2018), which in this case, was having a child or multiple children who are involved in sport within the UK. Selection criteria were based upon whether potential participants were proficient in English so they could understand and complete both phases of data collection, as well as having a child who was involved in sport. This enabled a comprehensive representation of the parents' perspectives of children involved in a range of sports, of different ages, and at different sporting levels. The final sample comprised 116 participants, 86 females and 30 males, aged between 31 and 74 (M=46.6yrs, SD=7.3yrs), across a variety of team and individual sports.

Procedure

Institutional ethics approval was obtained prior to participant recruitment commencing. Subsequently, performance directors and coaches across the key sports (e.g. basketball, swimming, skiing, and shooting) within the Sport Wales institute were contacted, via emails from the Sport Wales relationship managers. Within the email was a brief overview of the study, a link to the survey and the information letter. This email was then sent directly from

performance directors/coaches to parents. It was made clear in the email that no one outside the research team would know who had participated in the study. Additionally, information about the study was included within the Sport Wales institute newsletter that was sent directly to parents whose children are within their pathway and shared via Sport Wales social media.

Data Collection

In order to discover parents' perceptions of athlete development, and how they developed such perceptions, data were collected through participants responding to an online survey hosted on SurveyMonkey. Prior to distribution, the survey went through an extensive review process. To begin, existing literature was extensively reviewed to identify the fundamental factors of athlete development. Numerous meetings were then conducted with both the lead researcher and supervisor present, along with the lead of Athlete and Participant Experiences at Sport Wales and a Sport and Exercise Science lecturer based in Bangor University, to discuss and refine the key topics to be included within the survey. Feedback was provided by all members of the research team following each stage of the survey production. This resulted in six topics (the athlete's skills and characteristics, parental involvement, coaching, training, socio-environmental factors, and demographics) which the research team felt aligned with the fundamental factors of athlete development as displayed within existing literature. These topics were then formed into questions and presented appropriately in SurveyMonkey. The survey was then piloted with a small number of individuals, who shared similarities with the potential participants, to discover if the questionnaire was understandable and how long it might take to complete. Once the survey had been distributed, between one and three follow up e-mails were sent at intervals of between two and three weeks, to ensure that enough responses were collected.

Prior to starting the survey, participants were asked to provide their consent to participate in the study, as well as answering several demographic questions. The definition of athlete development was communicated to participants in writing before the questions began. Athlete development was defined as "the long-term development of a child into an athlete". The survey then began with two open-ended questions (what factors do you think may positively influence athlete development? What factors do you think may negatively influence athlete development?). The open-ended questions were then followed by several questions which required participants to rate the influence different factors within the pre-determined topics may have on athlete development on a Likert scale of 1-7 (1 being a very negative influence, 2 being negative, 3 being slightly negative, 4 being no influence, 5 being slightly positive, 6 being positive, and 7 being a very positive influence). The questions were framed consistently

throughout the survey (i.e., please indicate the extent to which you think the following child-related factors may influence athlete development). The survey comprised 50 questions. The participants were questioned on child-related factors, parental involvement, coaching, training, socio-environmental factors, and demographics (see Appendix A).

Data Analysis

Data collected through the survey were analysed using IBM SPSS (version 24.0). Descriptive statistics were produced examining the factors that parents associated with athlete development. Open ended questions were analysed using content analysis (described in detail in the section on data analysis in phase 2). A One-Way Randomised ANOVA was performed on the data gathered from multiple-choice questions surrounding parent's perceptions of athlete development to determine whether there were any differences in their perceptions of the influence of different factors on athlete development (i.e., between the athlete's skills, parental involvement, coaching, training, socio-environmental, and demographic factors). Greenhouse-Geisser corrected tests are reported when the sphericity assumption was violated in omnibus analyses.

Phase 2

Sampling and Participants

Although the sample size of the qualitative follow-up phase is significantly smaller than the sample size of the quantitative phase, individuals who participated in the qualitative phase were individuals who had also participated in the quantitative phase. Furthermore, the participants in the qualitative phase were individuals who volunteered to participate in the interviews on completion of the survey. This approach provides a connection between the two phases, which is necessary in this mixed-methods study as identifying information cannot be collected from all participants as part of the quantitative data (Creswell & Plano Clark, 2018). Given that more than 10 people volunteered for phase 2 data collection, it was decided that participants would be purposefully sampled to explore extreme cases/variations in the quantitative results, as well as those whose responses fitted with the general pattern of the quantitative results. Invitations to interview were sent to 20 individuals but ultimately only 10 of those who had been purposefully selected completed their interview. The sample was comprised of ten participants, six females and four males, aged between 37 and 53 years (M=48.7yrs, SD=4.9yrs). All but one participant had previously participated in sport themselves. The range of sports the participants' children competed in most regularly included basketball, swimming,

skiing, and shooting. All participants' children competed at the regional level, with 60% competing nationally, and 30% internationally.

Procedure

Within the survey, participants were provided with the option to indicate if they would be willing to discuss their thoughts and experiences surrounding athlete development in further detail. If this was the case, participants were asked to provide their name and contact details (e-mail and/or mobile phone number). These individuals were then contacted, and a date and time for an interview was arranged. Semi-structured interviews provide flexibility, permitting questions to be adapted/modified and probes to be utilised (Smith & Osborn, 2008), while also being an effective method of developing new information grounded in expert knowledge while being sensitive to social and contextual influences (Rubin & Rubin, 2012). Additionally, the semi-structured nature of the interviews enabled the modification or addition of certain questions which permitted probing of answers that required elaboration and/or clarification (McLafferty, 2004). A pilot interview was first conducted, using the interview guide as a foundation, to aid the design of the research whilst allowing the researcher to become comfortable with the questions (Morgan, 1997). No alterations were made to the interview guide following the pilot interview. Data were collected over Zoom for the convenience of the participants. In addition, following the COVID-19 pandemic, many in-person qualitative research interviews have transitioned onto virtual platforms, such as Zoom. This acted as an advantage within the research study as conducting the interviews on a virtual platform enabled an extended recruitment reach, as well as inclusivity, at a reduced cost (Oliffe, Kelly, & Montaner, 2021). Furthermore, it allowed participants to talk freely about their experiences and feelings in the comfort of their own home (Oliffe, Kelly, & Montaner, 2021). As the interviews took place succeeding the pandemic, most participants had experience using Zoom, and appeared comfortable with using the technology at home.

Data Collection

The interviews were structured using the guidance of Rubin and Rubin (2012) and informed by the survey structure and results. Specifically, each interview was tailored in line with the responses provided by the specific participant in the quantitative phase. At the outset of the interview, participants were provided with a verbal explanation of the study and given an opportunity to ask questions. It was emphasised that their participation was voluntary and the information they provided was confidential. Following the collection of verbal consent, the definition of athlete development was communicated verbally to participants before the interview questions began. Athlete development was defined as "the long-term development

of a child into an athlete". The participants were provided with opportunity to discuss the definition and further clarify understanding where desired. The interview then began with general introductory questions to develop the participants trust within the interviewer (i.e., Why did you introduce your child to sport? What are you hoping your child might develop through their participation in sport?), before progressing to transition questions which gradually began to move the conversation towards the main aims of the study (i.e., Can you name any parent-related factors that you think may influence athlete development in a positive way and explain why? Can you name any parent-related factors that you think may influence athlete development in a negative way and explain why?). The main body of questions then specifically looked to address the study aims, exploring the understanding that parents currently possess surrounding athlete development, as well as what influences these perceptions (i.e., What led you to the perception that parent-related factors may influence athlete development? What impact do you think your views on these parent-related factors might have on your child's development as an athlete? What might affect your view on how parent-related factors influence athlete development?). The interviews then concluded with summary questions, reviewing the responses to earlier questions (i.e., Where do you seek information regarding your child's athletic development? Where do you seek information regarding your role within your child's athletic development? What information would be useful to you, as a parent, to support your child's athletic development?) (See Appendix B for an example interview guide). Interviews ranged from 36 minutes to 1 hour and 16 minutes (M=57 mins).

Data Analysis

The data from the interviews were audio recorded and transcribed verbatim. To ensure confidentiality, all identifiable information was removed, and participants names were labelled using pseudonyms. Subsequently interviews were analysed using data analysis procedures detailed by Miles, Huberman, and Saldaña (2020). Specifically, this analysis occurred concurrently with data collection, allowing the researcher to consider the existing data as well as generate new data simultaneously. Analysing the qualitative data began with the use of inductive First Cycle coding methods to summarise segments of data. First Cycle codes are individual codes initially assigned to data units that were identified within the data and were composed of a word or short phrase that assigned symbolic meaning to the descriptive or inferential information compiled during data collection. First Cycle codes were primarily retrieved to categorise similar data into clusters which related to the research aim. Specifically, In Vivo Coding was employed, where direct quotes from the participant's own language in the data were recorded as codes, honouring the participants voice, and often pointing to

regularities. As Miles, Huberman, and Saldaña, (2020) suggest, codes for a unit of data were determined through attentive reading and reflection on the core content and meaning of the data to contribute to interpretive familiarity.

Analysis continued with Second Cycle coding methods, at which point the initial codes were grouped into a reduced number of categories based on patterns in the data (termed pattern codes) (Miles, Huberman, & Saldaña, 2020). Pattern codes consist of inferential or explanatory codes, providing a richer meaning to the data than those identified during the First Cycle coding. During the natural processing of information, the researcher quickly identified patterns in the First Cycle codes, based on recurring phrases or commonalities which arose in the way different participants had answered a certain question.

The pattern codes were subsequently mapped visually to comprehend how the components interconnected and were written up in the form of an analytic memo that expanded on the significance of the code, which, in turn, provided precise parameters for each pattern and strengthened the validity of the pattern. The analytic memos were a narrative intended to document the researcher's reflections on the data, in an attempt to reach a higher-level analytic meaning through synthesis. This enabled the collation of varying extracts of data into a recognisable cluster composed of multiple instances of a general concept. As Miles, Huberman, and Saldaña (2020) suggest, the analytic memos were dated for reference to the analytic history of the research study, titled with the memo type, and subtitled with a more specific description of the content. This was then followed by an inferential process where the code was utilised in succeeding data collection to identify any possible rival explanations.

Proceeding the analytic memos, the need to formalise the researcher's thinking into condensed and coherent explanations emerged. This was achieved through the generation of assertions and propositions, which were statements reflecting the summative findings of the research study (Miles, Huberman, & Saldaña, 2020). Specifically, the assertions were declarative statements of summative synthesis, supported by confirming evidence from the data. Propositions were statements suggested based on a theory surrounding a conditional event (Miles, Huberman, & Saldaña, 2020). The utilisation of assertions and propositions allowed the synthesis of all other analysis, as well as higher level interpretations of the meanings, resulting in six categories of factors (the athlete's skills and characteristics, parental involvement, coaching, training, socio-environmental factors, and demographics) summarising the findings of the research study (Miles, Huberman, & Saldaña, 2020).

Methodological Rigor

Within mixed-methods research, validity is defined as implementing strategies which address possible weaknesses in the research to accurately analyse the data collected (Creswell & Clark, 2018). Consequently, the focus surrounded identifying both quantitative and qualitative approaches to ensure methodological rigor (Tashakkori & Teddlie, 1998). The use of an explanatory sequential design presented numerous potential weaknesses. For example, failing to identify certain statistical results that were particularly important to expand upon (Creswell & Clark, 2018). In an effort to address this issue, all possible explanations for the statistical results, such as significant and nonsignificant predictors, were considered. Furthermore, another fault may have arisen if the follow-up qualitative data did not directly explain the reasoning for anomalies or abnormalities in the quantitative results, which may have also resulted in contradictory results (Creswell & Clark, 2018). Subsequently, the qualitative data collection was designed specifically to probe into said anomalies discovered throughout the quantitative results. Finally, an inadequate relationship between the initial quantitative results and the follow-up qualitative data may have created a weakness in the validity of the study (Creswell & Clark, 2018). However, through the use of the same participants across both stages of the study, a relationship between these two elements were achieved.

Results

The results detail parents' perceptions of athlete development, and how they developed such perceptions. Six categories of factors (the athlete's skills and characteristics, parental involvement, coaching, training, socio-environmental factors, and demographics) were imposed through the survey. The data collected across the interviews were analysed within these pre-determined categories that provided the structure of the survey.

Quantitative Results

The mean and standard deviation for each category of factors influencing athlete development (the athlete's skills, parental involvement, coaching, training, socio-environmental factors, and demographic) was calculated, scoring between 1 (very negative) and 7 (very positive) (see Table 1 and Figure 4). The homogeneity of the data, or spread of scores around the mean, was above the threshold and therefore, not significant as shown by the Levene Statistic.

Table 1

Descriptive statistics showing parent's perceptions surrounding the factors that influence athlete development.

Category of factors	Mean	Std. Deviation
The athlete's skills	5.58	0.43
Parental involvement	5.84	0.42
Coaching	5.95	0.33
Training	5.03	0.39
Socio-environmental	4.17	1.28
Demographic	4.23	0.55

Note. Mean scores are based on a 1-7 Likert Scale (where 1 equates to a 'very negative' perceived influence and 7 equates to a 'very positive' perceived influence.

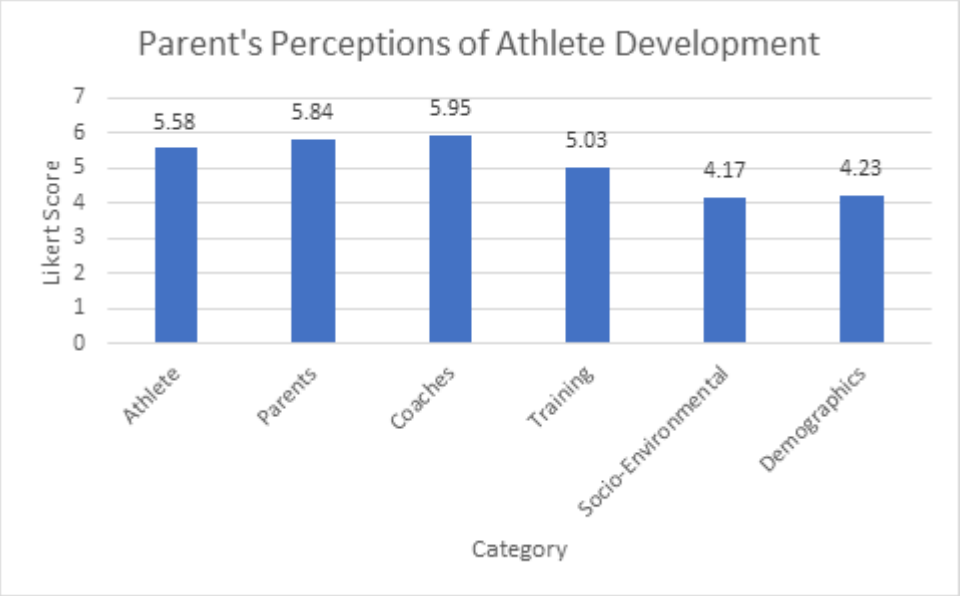


Figure 4. *A graph to show descriptive statistics of parent's perceptions surrounding the factors that influence athlete development.*

Figure 4 clearly highlights that participants perceived the athlete's skills and characteristics, parental involvement, and the coaching the athlete receives had the strongest influence on athlete development, with training displayed as slightly less influential. In comparison, the participants perceived that socio-environmental factors and demographics had no influence on athlete development.

A One-Way Randomised ANOVA was performed on the quantitative data, to determine whether there were statistically significant differences in relation to parental perceptions of importance between the different categories. As a result of Mauchly's Test of Sphericity being violated, I mitigated for this by applying a Greenhouse-Geisser correction factor. Results revealed significant differences in the perceptions of importance between the categories in relation to their influence on athlete development ($F_{1.89}$, 107.72 = 91.56, $p < 0.001$, $\eta^2 = 0.62$). To determine where these differences occurred, Tukeys Post Hoc tests were performed (Turkeys HSD = q(k, N-k) × Sq.Rt. MSe/n). Tests revealed that the athlete's skills and characteristics, parental involvement, and the coaching the athlete receives were viewed as having a statistically stronger (perceived) influence on athlete development. Conversely, training, socio-environmental factors, and demographics were perceived by parents as being significantly less influential on athlete development. Furthermore, the relative importance of training was perceived as being significantly greater than that of socio-environmental factors and demographics.

Qualitative Results

Results from the analysis of the interviews with participants were presented within the six categories of factors (the athlete's skills and characteristics, parental involvement, coaching, training, socio-environmental factors, and demographics).

The Athlete's Skills and Characteristics

Analysis revealed that participants perceived that, overall, the athlete's skills and characteristics can positively influence athlete development (M=5.58, SD=0.43). Specifically, participants considered that the child's physical skills (M=5.70), psychological skills (M=5.70), such as self-confidence (M=5.95) and enjoyment of the sport (M=6.59); success in the sport (M=4.51); and seeking to challenge oneself (M=6.10) were elements related to the child themselves which may have a positive influence on their development as an athlete. A reverse worded question, only attempting skills that they are comfortable with/able to do was (M=3.13) to negatively influence development. This suggests that parents are aware of the importance of a child's desire to engage in sport along with their psychological skills such as self-confidence and motivation, can influence athletic development.

These results were further supported throughout participant interviews, where it became clear that parents believe the children's motivation to participate in sport must come from within themselves, and the subsequent enjoyment they discover from participating in sport results in

their continued motivation and development as an athlete. For instance, participant 2 explained that “it’s [motivation] got to be coming from the child. It’s got to be.” Similarly, participant 4 agreed that “obviously there needs to be some form of drive from the child themselves.” Overall, the participants perceived that a key element to athlete development is that the child themselves is driving their involvement if they are going to remain involved.

To develop such drive or motivation, parents perceived that children must enjoy participating in sport. Specifically, participant 3 explained “you have to have some form of enjoyment. Otherwise, you won’t put up with training or the time and effort it takes to get somewhere.” Particularly, parents acknowledged a link between motivation and enjoyment, specifically perceiving that a lack of enjoyment would result in a lack of motivation to participate and consequently, meaning the children would be less likely to attend training or direct their effort towards developing as an athlete. As participant 10 explained “if they enjoy what they’re doing and they’re interested in it, then they’re more likely to want to progress with it, and more receptive to being coached.” The factors contributing to children’s enjoyment and subsequently motivation was perceived to be complex and included the child’s psychological skills e.g. self-confidence, a willingness for challenge, success in sport, and the formation of friendships within the sport.

Related to above, parents perceived that the possibility of forming friendships with teammates was also a motivating factor for children, and that it creates commitment to the sport, ultimately resulting in athlete development. Participant 8 highlighted “it’s good to have friends and socialise in sport, because that’s another reason for the child to work, to do the sport. Yeah, because his friends are doing it as well.” This was further supported by participant 10 who shared:

> My son plays for a local football team, and his four best friends play, so he wants to go all the time. He never wants to miss a training session. He never wants to miss a football game.

Through the child’s establishment of friendships and the opportunities that sport provides to socialise at both training and competitions, parents perceive that their children’s athletic development benefits because of increased motivation and subsequent commitment, ultimately stemming from increased enjoyment.

Although parents did recognise the value and influence that children’s intrinsic motivation for sport has on athlete development, they also recognised a role of various types of extrinsic motivation. Firstly, parents discussed the value children gain from an athletic development perspective if they seek to challenge themselves and to grow. Participant 5 said “if somebody

is willing to stretch themselves and step outside of their comfort zone, then that helps to stretch their skills, their ability, and give them some confidence." This implies that challenge is an important aspect of athlete development, as it benefits an athlete both physically and mentally, ultimately increasing their overall performance. Participant 4 conveyed that the alternative is "if you never push yourself to do anything more or different, then it stagnates doesn't it? It's just still in your ability or your level." Parents perceive that a lack of challenge leads to a lack of athlete development, causing the athlete's performance to plateau.

It is evident that parents directly related an increase in skill level to the presence of challenge, and that it must originate from the child themselves. Participant 2 alluded "they need to continuously strive to improve… the training has got to develop… the skills have got to develop… they'll never improve if they don't increase their skill level." When discussing children's emphasis on growth and challenge, parents recognised the clear influence the coach can have here, as participant 8 explained "if you have a coach holding you to a high standard, then that is where you will aim." This suggests that parents perceive a coach setting high ideals for young athletes is beneficial in terms of athlete development, as the athlete will be motivated to challenge themselves to meet such aims.

Further, parents also perceived that children are often motivated by their successes in sport. However, whether they perceived this as a positive or negative factor of athlete development varied. Some parents suggested that children are often extrinsically motivated, inspired by the rewards they may receive following a successful competition. For instance, participant 3 shared, "occasionally winning a trophy at the end of the season, or something like that, positively reinforces the idea that actually, if you work hard, you can achieve." Other parents also agreed that winning can positively influence athlete development, particularly as it may lead to pleasurable feelings, which influence children's intrinsic motivation. Participant 6 highlighted:

> When you have success, there's a direct pleasure factor from that… if you were not being successful, the actual competition would hold less appeal… she [the athlete] was winning everything in Wales, and I think that is what encouraged her to keep going.

In comparison, participant 10 said "kids do measure themselves on whether they win or lose, whether they should or shouldn't do that… even though I don't really think I'd want them to focus on that." The potential for this emphasis on success and drive to achieve being perceived as negatively or positively influencing athlete development appeared to be dependent upon the child's personality, including their motivation for the sport and the likelihood of comparing

their own ability and success to their peers. Similarly, such personality characteristics also relate to the child's willingness to challenge themselves to develop as an athlete.

Somewhat related to children's ability and desire to experience challenge and to grow, parents also reflected upon the influence that psychological characteristics and skills may have on athlete development. Specifically, parents recognised that sporting success and development is largely "mental."

Specifically, parents perceived that psychological factors had an influence either through the athlete encountering difficulties and resultantly facing a plateau or decline in athletic performance or benefiting from an increase in development if the athlete is thriving. Participant 1 illustrated "you can't expect people [athletes] to perform when there are things having a massive negative impact on their well-being." Meanwhile, participant 2 shared "it's all a mental game, and if they are having problems psychologically for whatever reason, and things aren't going well, then that will spiral out of control." They further expanded "you [the athlete] have got to be in the right head space." When considering how important this was, there was a need to consider the athlete's coping abilities and resilience as other influential psychological skills to athlete development.

Development of Perceptions

When considering how parents had developed their perceptions regarding how the child's skills and characteristics influence athlete development, it was apparent that personal experiences had the most impact. Specifically, many parents reported that they had gained their knowledge through their children's experiences in sport. For instance, participant 3 explained he had developed the perceptions regarding motivation "through my experience and my daughter's experience… observing her and listening to what she wants to do with sport." Similarly, participant 4 said "the experience of having children and a husband that are active as athletes on a competitive level" had had the most influence on their perception of the impact of the athlete's skills on their development, along with participant 7 who answered "friends and family who have competed. Their experiences and actually watching them." Other parents declared their perceptions developed when they were a competitive athlete themselves, with participant 10 stating:

> As a competitor myself… I also do a bit of coaching with children at the club… so I think it might depend on how much a parent has competitively done a sport themselves, that potentially might then give them a better understanding of what their child is feeling.

In addition, participants also developed their perceptions surrounding the influence the athlete has on their development through individual reading and research. Participant 1 highlighted the impact of readings books and journals surrounding the topic:

> I started to read more about it and explore it. That was really helpful. It's nice to find some validation from science.

Likewise, when asked about the development of their perceptions of athlete development, participant 6 had discovered "some reading materials and reference materials to help." Other parents took it upon themselves to conduct research online. For instance, another participant stated, "I go on the internet to look for answers." These comments highlight that some participants were indeed aware that there was existing research surrounding athlete development which they were able to access, but that parents discovered this themselves and were required to locate such literature.

Parental Involvement

Within the survey, participants depicted that they perceived how parents are involved with their child's sporting life will influence athlete development. Specifically, they perceived that overall parents are an important positive influence on athlete development (M=5.84, SD=0.42) in terms of the quality of the parent-child relationship (M=6.20); encouraging their child's involvement in sport (M=6.04); providing their child with opportunities to develop in sport (M=6.30); managing organisational demands (M=5.73); adapting their involvement based on the child's age (M=5.55); and understanding what their child wants from sport (M=6.26). In comparison, participants perceived that parents putting pressure on their children (M=1.89) and focussing only on the outcomes (M=1.73) can negatively impact athlete development.

Similarly, when discussing parental involvement within the interviews, it became clear that parents viewed parental involvement to have various influences, both positive and negative. This was largely related to the types of involvement that parents were perceived to display. For instance, participants discussed the impact that parents' putting too much pressure on children in sport would have on athlete development. For instance, participant 1 described:

> Young people, 12 years of age, even younger, they lose a game, and they're afraid of what their parents are going to say. That is so negative for everything that child is going to try and do.

As this quote illustrates, parents perceived that parental pressure could lead to children developing a fear of failure and subsequently resulting in reduced confidence, ultimately

affecting their development. Participants perceived that parental pressure may arise because of the high standards and expectations parents have for their children. Participant 5 portrayed "I see all kinds of parents and I think some are very driven to the child succeeding and being the star player." Consequently, participants suggested that the children may feel as if they are required to reach unrealistic expectations and terminating their involvement in sport as a result. Participant 2 added:

> I see parents pushing, pushing, pushing the kids, and then they're not enjoying it, and they quit because of the pressure… If you're putting too much pressure on them, you're not helping them develop anyway.

Similarly, a common perception was that often parents are living through their children's sporting success. Participant 2 suggested:

> People who nearly made it themselves as a child certainly want their child to go where they never could. They're living their dreams through their child, and then they become very pushy, because they want their children to realise these dreams, but it's more about them than it is their children.

Participants suggested that this might mean that the parents lose sight of their children's wishes in pursuit of their own goals, subsequently coercing the child into training and competition despite a lack of personal enjoyment, negatively impacting athlete development. Participant 6 alluded "I've seen parents wanting to relive their success through their children or drive the children to have the successes that they didn't. That's not very helpful." Despite the actions of some parents, these comments highlight that the parents who participated in this study were aware that these behaviours can hinder athlete development and perceived it was a barrier for young sporting children.

In comparison, parents perceived parental support as a crucial factor in facilitating their child's involvement in sport. Participant 7 claimed, "it is the parents who facilitate [involvement]. You have to as a parent… open options and possibilities." Parents perceived it was their responsibility to provide their children with opportunities in sport, enabling them to train and compete, ultimately developing their athleticism. Furthermore, participant 2 described, "I want to try and be the best influence I can and be the best support I can be for my son. I'll do anything and everything I can to support him to achieve what he wants." Such comments highlighted how parents are aware of the benefit of their involvement in their child's development as an athlete, and their wish to provide their upmost support. Similarly, another participant exclaimed "the more I can learn and understand to be able to support my children in a positive way is important." Parents therefore appeared to recognise the importance of their own education in

facilitating their child's development as an athlete and are willing to contribute their time and effort into doing so.

Parents perceived that one of the contributing factors to parents' appropriate or inappropriate involvement and subsequent impact on development was parents' sport specific knowledge. As indicated above, some parents seek information so they can support their children. However, in contrast, another participant underlined how "there will be some parents who are lost when their child starts getting into sport." If a parent engaged in differing sports to their children, or had not been involved in sport previously, there is likely to be an absence of knowledge surrounding how to support their child most efficiently in such a sport. Participant 1 believed "there's fear about it from a lot of parents, because they don't necessarily know the sport." Moreover, participant 5 suggested "there's not a lot of understanding of the game from parents." The result being that parents may offer incorrect technical or tactical advice to their child if they are not entirely familiar with how to compete in that sporting event, ultimately hindering athlete development.

Beyond knowledge, the relationship with coaches was seen as important. Participants agreed "parents should have a relationship with the coach," "fostering that relationship with the coach is good," and that "it's positive for [athlete] development." However, the information gathered throughout the interviews suggested that these relationships often have a negative effect on athlete development due to issues in the relationship. For instance, Participant 7 revealed "I have seen coaching impacted by negative parental behaviour." This suggest that parents may become overly invested in their child's sporting life, particularly the coaching aspect, and may impede the development of their child as an athlete through their resultant behaviours and actions. Aligned with this, another participant added "they've got to be working with the coach, not be the coach," and Participant 8 highlighted "our coach had to speak to parents about them being involved when they don't need to be." From such comments, it became clear that parents perceived that clear boundaries in roles and good communication between parents and coaches may be useful for athlete development.

Finally, it was apparent through the interviews that, despite the perception that parents' may be highly focused on their child's success in sport, this was not the case for the parents interviewed. Specifically, parents indicated that they focused on their child's athletic success more broadly and thought this was beneficial. That is, if the parent has confidence in the young athlete and provides them with encouragement and support to enjoy competition, the athlete will subsequently be more confident and feel more able to relax, increasing enjoyment and overall performance. Participant 2 described "winning for me is not the be all and end all, it's

going somewhere and trying your best, you know, hitting a personal best." Moreover, participant 1 included "I wanted him to grow rather than succeed or fail… what he ends up achieving in basketball is almost insignificant to what he learned about himself as a person." This belief positively contributes to athlete development as parents perceive that the skills you develop through sport can contribute to all other aspects of life in the future, and focussing on reinforcing these skills will ultimately strengthen their performance both in and out of sport.

Development of Perceptions

Participants suggested that they developed their perceptions pertaining to parental involvement and influence on athlete development through observation, as well as by following club guidelines. Many participants highlighted that witnessing how other parents interact with their own child during training and competitions impacts their perceptions. "It's experience of witnessing so many parents"; "I kind of observe other parents around"; "It's from seeing other parents with their children." Participant 1 also discussed how perceptions of parental involvement in athlete development have developed through observation of other parents, of which the interactions would be viewed as obstructive. "You learn as a parent. You look at people and you think I'm not going to be like that because it's not helping the development of the athlete." This suggests that parents perceive there are problems with the ways in which other parents support their young children in sport, and that perhaps their education is through such interactions. Similarly, when participant 5 was asked how they developed these perceptions, "seeing how some parents react versus others because you kind of sit and think I don't want to be that person over there."

In comparison, participant 3 stated that their perceptions surrounding parental involvement in athlete development had developed through the guidance of which the club had provided to them:

> Every club we've been at, there are guidelines for parents. We get little leaflets from our club each year when we renew our membership to say that these are the sorts of conversations that are helpful.

This suggests that participants perceive parents will follow guidelines if laid out by the clubs and shared to members, supported by an additional participant who explained "it's parents' guidelines for when their kids are in sport [that develops perceptions]."

Although available, club guidelines did not appear to be very prevalent; "you actively have to go onto the website to find if there is anything, and it's never very clear"; "we didn't have very clear information"; "they don't give you clear guidance." It should therefore be considered that if several parents are solely being educated on how to support their children in sport through

observation of other parents, perceptions and behaviours that are harmful to athlete development could be transferred. In fact, participants requested for more educational information in this regard. Participant 8 requests "an organisational website informing about parent-coach and parent-child relationships." Meanwhile, when asked what would aid the development of perceptions surrounding athlete development, other participants said, "just a handout to say this is how to help your child [in sport]"and "just a one pager that says as a parent, this is your role, and this is what you can do. It would be really helpful."

Coaching

Coaching was also perceived by participants to be an important part of athlete development, and one which positively influences the athletic development of the child (M=5.95, SD=0.33). Participant's perceptions of how the coach may contribute to development were surrounding the quality of the coach-athlete relationship (M=6.33); the qualification of a coach (M=5.71); the coach engaging in safe practices (M=6.36); the coach holding athletes to a very high standard (M=5.15); quality of instruction and feedback provided (M=6.45); caring about the child as a person (M=6.50); using developmentally appropriate coaching practices suited to the athlete (M=6.48); as well as implementing challenge (M=6.36), skill-based drills (M=6.18), and games/play into training (M=6.12). However, it was perceived that a coach may negatively impact athlete development if favourites are selected (M=1.56) and if the coach cares about the child only as an athlete, not a person (M=2.59).

When exploring qualitatively elements of coaching that were perceived to affect athlete development, one of the key factors was how coaches engaged with children. For instance, parents perceived that the coach has a responsibility to make training enjoyable. Consequently, the child will be more likely to enjoy training themselves, motivating them to attend sessions, and ultimately increasing athlete development through heightened work ethic. Participant 4 underlined how "the enthusiasm of coaches is what has made it enjoyable." Parents perceived coaches have the ability to inspire young athletes and that their behaviours can subsequently be transferred onto the child, highlighting the importance of the coach modelling positive behaviours surrounding sport and sporting development. This perception was reinforced by participant 7, who said "it's just having those coaches who are really into the sport and enthusiastic, so the kids want to go there and train."

In addition, parents perceived that coaches also have the responsibility of setting goals for the athlete or holding them to high standards to have a positive influence on their development in such sport. Participant 8 explained "if you have a coach holding you to a high standard, then

that is where you will aim." This suggests that parents perceive a coach setting high ideals for young athletes is beneficial in terms of athlete development, as the athlete will be motivated to strive to meet such aims. Another participant added:

> If the coach encourages [the athletes] to meet high standards, it will definitely help the child. When I say hold the athlete to a high standard, I kind of mean it more in an encouraging way, I guess it depends on the delivery of the coach.

Such comments highlight that although most parents agree that the coach holding an athlete to a high standard will positively influence their development, the outcome will vary based on how the coach delivers such encouragement, as well as how the child might receive it. If a child views the aims as unrealistic, the sense of pressure they feel when performing could amplify, resulting in the opposite effect on their development as an athlete.

Furthermore, parents perceived that the coach's ability to manage an athlete's feelings is an important influence of athlete development. For example, a participant said "it's not just about performance, they [the coach] must understand how the athlete feels. The coaches have to have the trust of the kids." This suggests that parents perceived there is more to coaching where athlete development is concerned than just focussing on performance. If a coach can build rapport with young athletes and understand and sympathise with how they are feeling during training and competitions, this will be most beneficial to the athlete's development in parents' perceptions. Participant 10 included "you [the coach] have to be able to manage their [the athlete's] emotions as well as the skill of the sport." Expanding on a coach's ability to relate to how the athlete might be feeling, parents also perceive that the coach should be aware of how to manage such emotions. More specifically, participant 3 illustrated "if a coach gives reassurance, it gives the child confidence." Therefore, if a child is doubting their ability, parents perceive it is important for the coach to provide them with the necessary support to believe they are competent, providing them with the confidence to perform to the best of their abilities, and ultimately developing as an athlete as a result.

The coach communicating with the children in a way in which the children can understand is another factor perceived essential for athlete development. Participant 9 said "they [children] bounce back pretty quickly if they have been spoken to by their coaches in on a level they can understand." This implies that parents perceive the way coaches deliver instructions as well feedback must be appropriate for the age of the child for them to understand and process the information before acting accordingly to develop as an athlete. In contrast, parents were aware of the detrimental effects that a lack of communication between the coach and athlete could have on a child's development in the sport. For example, a participant alluded that not all

coaches are capable of communicating with young athletes effectively, exclaiming "the coaches they [the athlete's] struggle with most are the ones that don't really communicate very well." Similarly, participant 2 said "you're trying to teach them, but do they understand?" Clearly, clarity of communication from coaches was perceived by parents to influence athlete development.

Similarly, parents perceived that coaches can also negatively contribute to athlete development if they are solely focussed on performance. For example, participant 3 explained "I've spoken to a lot of athletes who no longer shoot because they were part of the Welsh setup when it was really performance-focussed." This indicates that parents perceived some coaches may focus too narrowly on performance outcomes, rather than also concentrating on development, which would subsequently apply too much pressure on the athlete and result in the discontinuation of the sport. This perception was supported by a further participant who shared "if the coach is outcome driven… that becomes an environment which doesn't allow development anyway because it creates fear and anxiety." It was therefore perceived by parents that coaches who were only interested in succeeding in competition would pose as an obstruction to the child's development as an athlete, due to the self-doubt inflicted upon the athlete as a result. In addition, participant 5 said "you train to race… The focus is always on competition… The academy is purely about how they do on a race", suggesting that even in youth sport, parents perceive there are several coaches solely focussed on outcome.

Development of Perceptions

Parents developed such perceptions surrounding coaching in athlete development from their personal experience of discussions with coaches. Arranging discussions with respective coaches was viewed by parents as a positive and insightful way to gain useful information surrounding athlete development. Alongside many of the other participants who had previously sought education from coaches; "I have sat with her ski coaches because I don't really know anything to do with actual ski racing"; "I would speak to her coach"; "I have spoken to coaches at MET [Cardiff Metropolitan University]", participant 6 revealed "it's probably the coaches that our children have had that have had the most impact educating us as parents." This highlights that parents are aware of the importance of their own communication with the coach and the benefits such conversations might have on their child's development as an athlete. Similarly, when participant 10 was asked what or who might influence perceptions of athlete development, it was underlined "certainly with the coaching I've done, you know, seeing how kids develop… my influence as a coach." Many parents develop such perceptions through their own personal experiences. However, few participants had experience of coaching and so were

unable to apply such knowledge to their own child's sporting development; "I imagine if I were to have had coached a team myself, I'd have more of an idea"; "I've just never been a coach."

Training

Participants perceived the impact of training on athlete development was less important than the impact of other factors, but nevertheless has a slightly positive influence (M=5.03, SD=0.39). The factors perceived to influence athlete development positively included the athlete having access to sport science support (M=5.94); the athlete participating in many different sports through early adolescents (M=5.77); and high-quality equipment being provided within the facility (M=5.68). However, the survey revealed uncertainty among participants surrounding how the number of hours spent training might influence athlete development (M=3.58). Despite this, the results show that participants perceived a child missing school to train or compete (M=2.50) and deliberately participating in only one sport from a young age would negatively influence their development as an athlete (M=2.89).

These statistical results were then further expanded on in the interviews, demonstrating varying perceptions between parents. Parents perceived that for a child to develop as an athlete, the focus throughout training should be on development rather than purely success. As participant 1 stated "the process [of athlete development] itself becomes the success." This suggests that parents perceived their children as successful in sport if the child is improving their skills and developing as an athlete, regardless of competition results. Similarly, another participant added "it's more about their behaviour than the actual success." Expanding on this, parents seemed to perceive that the child's behaviour towards the sport and during training is of a higher importance than their skill level alone, as this will benefit them in their development as an athlete. In summary, parents perceived it is essential that "the focus should be on technical aspects of sport, not just the results in competition" for athlete development to occur.

However, when parents were questioned about the effect they perceived training hours might have on athlete development, the responses received were conflicting. Thus, highlighting that it is unclear to parents how much training might be necessary to develop as an athlete, as well as the consequences of an overload of training. Several parents perceived that the more training sessions the child attends, the more beneficial to their development as an athlete. Participant 5 suggested "the more training hours they can do, is obviously the better." Contrastingly, other parents perceived that overload can be harmful to athlete development, recognising that children should only be expected to train when necessary. A participant explained, "if they [the athlete] do too much [training] too young, and especially if they're missing school to train, it

would over pressurise them to perform in their sport." Similarly, participant 8 added "a child becoming overwhelmed by being expected to perform and being taken out of school… that can put a lot of additional pressure on." Clearly, some parents perceived that over-pressurising the child can lead to a lack of motivation for the sport, negatively influencing athlete development, and possibly resulting in dropout.

In addition, parents perceived that children missing out on other aspects of life due to the time committed to sport from a young age could negatively influence athlete development through the lack of other education. Participant 1 exclaimed "they [the athlete] forfeit their education, their social development, and everything else." This was reinforced by another participant who underlined "they're [the athlete] missing out on life." It is therefore perceived by parents that entering performance sport as a child can impede other areas of development if the number of obligatory training hours was high. Participant 6 summarised "if the pure focus is that sport comes first and nothing else matters, it's difficult."

It was also generally perceived by parents that sampling multiple different sports at a young age is more beneficial to athlete development than specialising in one singular sport at a young age. Participant 1 said "at primary school age, they should be doing anything they can… by about 13/15, there's going to be a primary sport" and another explained "what people must make the mistake of is putting them into one sport." This suggests that parents perceived it would be advantageous for children to participate in multiple sports, whilst recognising the focus will eventually remain on one sport at an older age. Likewise, a participant emphasised "when you're young, you're not totally developed so it's good to try different sports."

When compiling these responses, it became clear that the parents understood how different skills and movements are developed across varying sports and how this can ultimately benefit athlete development. Participant 2 explained, "there's a sort of cognitive diversity of different sports and a crossover of skills and athleticism from different sports." This conveys the idea that parents perceive transferable skills are particularly valuable for sporting development as psychological skills as well as cardio-vascular fitness and other particular movements.

Development of Perceptions

Again, parents' perceptions had evolved through personal experience, in addition to individual reading and research as well as social media groups. Participant 7 explained "It's experience. I've got about 10+ years, x3 children going through and playing at a local club level." Other participants stated, "it's just personal experience"; "my understanding of sports and what I've seen in the past"; "it's a bit of both, education and experience" that developed their perceptions of the impact of training on athlete development.

As participant 1 illustrated “you can generally find just about every research paper, and that becomes powerful”, conveying that some parents develop perceptions through their own research, finding validation surrounding athlete development and training principles in literature. Likewise, participant 5 also stated “I’ve done a huge amount of reading to try to support them [their children] in the best way I can”, supporting the idea that some parents choose to do their own reading and research in order to support their children in their development as an athlete.

Furthermore, parents make use of social media and YouTube videos for additional self-education. Participant 9 exclaimed “social media is a great way for discussions” and another described the utilisation of “Snow Sport Wales Facebook page”, where group members, including athletes, coaches, and parents themselves, share guidance and advice encompassing athletic development and training. Likewise, participant 2 explained “I’m on Facebook groups for target shooting, so you read what they say.” However, it is unclear whether the information posted on such social media platforms is factual and so could lead to the transfer of obstructive perceptions of athlete development.

Socio-Environmental Factors

On average, participants perceived socio-environmental factors to have no influence on athlete development (M=4.17, SD=1.28). Such socio-environmental factors included cost of training (M=4.16) and competition (M=3.34), the time required for training and competition (M=4.16), and ease of access to training (M=5.08) and competition (M=4.90). Despite this, the standard deviation depicts the uncertainty amongst parents surrounding this topic, which was then further highlighted throughout the interviews. Participants responses surrounding the impact of socio-environmental factors on athlete development were based on parents finding the time; the cost of training and competing; as well as the location of training facilities and competitions.

In the interviews, it became clear that parents do in fact perceive that many socio-environmental factors have a negative influence on athlete development, in particular the toxic environment that the culture of performance sport undeniably creates. Participant 1 highlighted:

> The children’s environment, I think they get it wrong so often, you know, the toxicity of the environment for young players compared to an environment where they feel safe, where they do challenge themselves and they do grow.

Parents perceived that the toxic culture of performance sport results in an environment where young athletes are unable to develop their skills further due to the extent of uncertainty they may feel in terms of their surroundings and the accompanying atmosphere. In comparison, parents emphasised the importance of creating a healthy environment for athlete development. Participant 8 illustrated "the environment should be conducive to encouraging them [the athlete's]." This was supported by another participant who added "any athlete needs a support team around them and the supportive environment that creates." This suggests that parents perceived that it is essential the environment, formed by key stakeholders, is a positive one that motivates the athletes to continue to develop by providing them with the necessary support and encouragement.

The key stakeholders responsible for creating a positive and healthy environment in sport also includes governing bodies, which some parents perceived may negatively influence athlete development through a lack of involvement and/or understanding. Participant 1 stated "we see managers who cannot grasp how personal relationships effect performance", suggesting that parents perceived some individuals involved within sporting bodies lack knowledge surrounding athlete development, therefore following inappropriate approaches, or providing misleading advice to others and consequently delaying athlete development as a result. Another participant added "in sporting bodies, people have got themselves into positions in order to drive forward the opportunities their children have." This further implies that parents perceived the actions of some individuals associated with sporting governing bodies may be driven by personal gain rather than a support for all athletes to develop.

In addition, parents perceived that a barrier of athlete development is a lack of awareness of pathways from key stakeholders, which subsequently means the environment is difficult to navigate. "It would probably be helpful for me to understand what they needed to have covered and what they needed to be to effectively follow that pathway. I didn't really understand that pathway" said participant 5. This underlines that parents may lack knowledge surrounding athlete development pathways, meaning that they are ill-informed of what is required from their child to maintain their involvement in such a pathway or how to best support them. Simply explained, what they needed to enable their child to develop as an athlete, one participant stated, "very clear pathway descriptions and how to access them."

Although rarely discussed throughout the interviews, it was clear through the analysis of the survey that logistics, including location and cost, were a perceived as a barrier to athlete development by some parents. However, the interview results suggest that location and cost

were only a consideration for some parents whose children participated in certain sports. The few parents who did mention it in the interviews highlighted:

> In the UK, you travel 200/300 miles per race. They're probably on the slope for 30-50 seconds, and if they straddle the gate, so, they go around the wrong side of the gate, that's the competition over, but you have travelled all that way. Then obviously that's kind of magnified when you send them around Europe (participant 6).

This suggests that some parents perceived their location in relation to the facilities where training or competitions may negatively influence athlete development, as logistically parents may struggle to support their child in attending. Another participant spoke of skiing:

> This is probably the most expensive sport out there. So, it is £300/400 for racing skis, and you need two sets of slalom, one set of giant slalom, one set of super giants, which are probably about £900. When she [the athlete] moves up into under 16's, all that doubles in price. Then you've got your boots and your poles. Poles are expensive. You could end up buying 6 sets a year… Yeah, it's very expensive. There's not a lot of funding in British snow sports.

Some parents perceived the cost of sport, including training, competitions, kit, and relevant logistical costs to be a barrier to athlete development due to the extent required and the lack of funding available. This not only stops children from developing further as athletes, but also prohibits children from beginning to participate in any level of sport.

Development of Perceptions

Such perceptions were developed by parents through both personal experience as well as a lack of communication from governing bodies, highlighting the need for increased communication to benefit athlete development. Participant 6 shared "it would be good if you were signposted to their [the athlete's] governing body", alluding to the fact that some parents may not be aware of which sporting body to report to, following a lack of communication from them previously. Another participant suggested "there's always a governing body for every sport… it doesn't mean they give you clear guidance." Participant 7 reiterated:

> In the beginning I remember having a little pack of information, but that's the only experience I've had where we have been given information upfront. Everything else you have to find yourself.

Another said "they [governing bodies] always want your phone number, but you never get anything." A lack of guidance from governing bodies and other key stakeholders results in parents' perceptions forming from their own knowledge, experience, and education.

Subsequently, parents' perceptions may not align with the research governing bodies are familiar with and thus could influence athlete development accordingly.

When asked how this barrier could be overcome, many participants suggested workshops for parents; "Workshops are a good idea because then you can kind of discuss"; "They're brilliant at doing workshops and seminars for coaches but they don't focus on the parents"; "I would be on there if they did a workshop." In addition, throughout the interviews it became apparent that when asked what information the participants believed parents might require, a lack of awareness surrounding talent development pathways was highlighted. Multiple parents suggested an increase in information provided about such pathways: "It would probably be helpful for me to understand what they needed to have covered and where they need to be to effectively follow that pathway. I didn't really understand that pathway"; "Very clear pathway descriptions and how to access them"; "A roadmap, that would be what's helpful."

Demographics

Lastly, the survey analysis revealed that, on average, participants perceived demographic factors to have no influence on athlete development (M=4.23, SD=0.55). Specifically, parents perceived that the athlete having multiple siblings (M=4.41) and the athletic pathway selection criteria (M=4.01) have no influence on athlete development. However, parents perceived that possessing an awareness of the athletic pathway (M=5.48) positively influences athlete development. Contrastingly, it was also highlighted through the analysis of the survey that participants perceived the athlete's birth date in relation to school year (RAE) (M=3.77) and the athlete having a single parent (M=3.28) could negatively influence athlete development. Unfortunately, these such demographic factors were not expanded upon during the interviews conducted with the participants. Therefore, it is unknown how parents may have developed such perceptions.

Discussion

The purpose of this study was to examine what parents understand about athlete development and what influences their perceptions of this. The results showed that specifically, the athlete's skills and characteristics, parental involvement, training, and the coaching the athlete receives were viewed as positive influences on athlete development. Whereas socio-environmental factors and demographics were not seen by participants as influential to athlete development. Furthermore, the current study highlighted that while there was often much agreement between parents' regarding their perceptions of athlete development, they did differ from person to person. It was also apparent that in some instances, parents' perceptions of athlete development did not necessarily align with the literature surrounding athlete development, and the parents were often not provided with information, support, or guidance, which influenced their developing perceptions.

Parents perceived that for an athlete to develop, the child themselves must be motivated to drive their own involvement in the sport, aligning with the research of Rees et al. (2016), who discovered that successful athletes display self-determined forms of motivation, and that the greater the levels of this form of motivation, the lower the risk of burnout. To develop such drive or motivation, parents perceived that children must enjoy participating in sport. Particularly, parents acknowledged a link between motivation and enjoyment, specifically perceiving that a lack of enjoyment would result in a lack of motivation to participate and consequently, meaning the children would be less likely to develop as an athlete. Similarly, in

a study by Wang et al. (2011) a long-term development focus was found to be positively associated with intrinsic motivation. Intrinsic motivation involves completing an action because it is enjoyable or satisfying, without obvious external rewards (Ryan & Deci, 2000). Interestingly, within the results, parents recognised their role in helping children to enjoy their experience. However, they adopted different approaches to this. For example, some parents perceived that if their knowledge surrounding the sport was lacking, their child further enjoyed the sport if the parent was less involved and so, decided to remove themselves from their child's experiences in sport. In comparison, other parents perceived that their support during training and competitions resulted in increased enjoyment for their child. Within literature, it has been recognised that parents can enhance their children's enjoyment through the provision of sport-specific information (in relation to technical feedback) (Harwood et al., 2019). Furthermore, numerous studies (e.g., Elliott et al., 2018; Furusa et al., 2018; Knight et al., 2010) have highlighted that children want their parents to understand their sport and to engage in conversations with them regarding their sport. In comparison, feedback before or after competitions from parents deemed to be lacking in the necessary knowledge or experience is described to lead to feelings of confusion, frustration, or pressure (Harwood et al., 2019). Thus, parents' perceptions of the importance of their knowledge surrounding their child's sport in contributing to enjoyment levels aligns with existing research, highlighting that it is paramount and can influence athlete development through the subsequent impact on motivation. Therefore, it is essential that parents can access the necessary educational materials to expand such knowledge and ultimately be able to positively influence their child's development as a result.

Parents perceived that the possibility of forming friendships with teammates was also a motivating factor for children, and that it creates and obtains commitment to the sport ultimately resulting in athlete development. Again, this perception aligns with previous research, which has highlighted that peers are key significant others with respect to young athletes' motivation (Brustad et al., 2001; Carr et al., 2000) and that greater friendship perceptions have been found to predict physical activity levels for children (Smith, 1999). In addition, literature shows that children's competence in sport is strongly related to perceived acceptance by their peers (Weiss & Duncan, 1992) and children who believe that they are regarded as competent by their peers have been found to reach a higher level of performance (Duncan, 1993). Similarly, Henriksen and colleagues (2009) discovered that maintaining cohesive groups of athletes is a contributing factor to creating successful talent development environments. Extending this earlier research, within the current study, parents appeared to

describe a cyclical approach through which peers and friend's influenced children's development. Specifically, they explained that the establishment of friendships and the opportunities that sport provides to socialise at training and competitions, increases children's enjoyment and subsequently their motivation and commitment, which in turn facilitates their sporting development. Thus, such findings strengthen calls to ensure that youth sport experiences include space and time for socialising and developing positive peer relationships (Furusa et al., 2024).

Parents perceived a child will develop as an athlete if they seek to challenge themselves and to grow. This implies that parents perceived challenge is an important aspect of athlete development, as it benefits an athlete both physically and mentally, ultimately increasing their overall performance. Such perceptions align with existing literature surrounding the arousal-performance relationship, in which the success of an athlete is explained based on the optimal level of arousal and the athletes' interpretation of the situational stressors faced (Jackson & Csikszentmihalyi, 1999). Specifically, this relationship suggests that an athlete can interpret a situational stressor as either a challenge or a threat, and that such interpretation contributes to their arousal, and therefore, success. Similarly, it has been identified that there is a relationship between experience of flow state and optimal sport performance, whereby a flow state is dependent upon the way an elite athlete views a situational stressor (Mousavi & VaezMousavi, 2015). This is based on the biopsychosocial model (BPSM; Blascovich & Mendes, 2000) of challenge and threat states, which specifies that a challenge state is associated with superior performance than a threat state due to the resultant behaviours. Therefore, as recognised by parents and confirmed by existing research, a key aspect of athlete development is ensuring the aspect of challenge is threaded throughout training sessions and competition. In addition, further research could be conducted into what factors parents believe might influence whether a child perceives a situational stressor as a challenge or a threat.

Somewhat conflicting with previous literature, the current findings suggest that some parents considered it necessary to succeed in competition for an athlete to develop. Although not wholly contradictory to literature as there is evidence that performance success can result in enhanced motivation (Dweck, 1986; Elliot, 1999; Nicholls, 1984) and also the development of perceived competence (Deci & Ryan, 1985) (both of which are likely to enhance engagement and subsequently performance; Ryan & Deci, 2000; Wang et al. 2011), if there is a focus on winning to the exclusion of development, this can be troublesome (Douglas & Carless, 2006). As such, there is a need to ensure that parents are not overemphasising winning, and developing an ego orientated climate (Dweck, 1986; Elliot, 1999; Nicholls, 1984), which has been

associated with numerous negative outcomes such as basic psychological need frustration, amotivation and boredom, resulting in discontinuation of sport (e.g., Garcia-Gonzalez et al., 2019). However, previous research does suggest that alongside athletic development, performance success is also important (Dweck, 1986; Elliot, 1999; Nicholls, 1984) which does align with the perceptions of the participants in the sample.

Moreover, there is a need to ensure that parents are not instilling a "win-at-all-costs" attitude, which have been identified as underpinning a performance narrative (Douglas & Carless, 2006). Specifically, a performance narrative is described as single-minded dedication to sport performance to the exclusion of other areas of life and self. This performance narrative is ever present in elite sport (Douglas & Carless, 2006) and thus, it is somewhat understandable that parents may perceive that it should apply to youth athlete development. However, this performance narrative is associated with numerous negative outcomes, such as developing an ego orientated climate, amotivation, and discontinuation of sport and has been recognised as not necessary to achieve an elite standard in sport (Douglas & Carless, 2006). Rather, evidence suggests, that parents emphasising holistic development of their children (Wylleman & Lavallee, 2004) and focusing on the development of a mastery climate (i.e., one in which children are valued for their effort and progression; Dweck, 1986; Elliot, 1999; Nicholls, 1984), is more likely to lead to positive outcomes, including enhanced motivation and subsequently athlete development (Harwood et al., 2019). Therefore, it is essential that parents are educated regarding the performance narrative so that there is a clear understanding that in order to develop, the focus should be on the process within sport, rather than success.

Interestingly, parents in the current study perceived that parental pressure could lead to children developing a fear of failure and subsequently resulting in reduced confidence, ultimately affecting their development. This is interesting because, an emphasis on outcomes and a desire to see children win, is often associated with parental pressure ((Bois et al., 2009; Collins & Barber, 2005). Thus, it may be that parents do not necessary link these two elements – importance of success and pressure – or that that they recognise that success can come without pressure (Douglas & Carless, 2006). Nevertheless, the awareness of the negative influence of parental pressure is reassuring, given that previous research consistently reveals that parental pressure, such as criticism or punishment of poor performance have been linked to reduced self-confidence and perceptions of competency, increased performance anxiety, burnout, and discontinuation from sport (Bois et al., 2009; Collins & Barber, 2005). Thus, highlighting that not only can parental pressure impede development, but also result in total discontinuation from sport in general.

Nevertheless, despite the recognition of the need to avoid parental pressure, it was apparent in the responses that parents still witnessed this happening. For instance, a common perception was that often parents are living through their children's sporting success. This might mean that the parents lose sight of their children's wishes in pursuit of their own goals, subsequently coercing the child into training and competition despite a lack of personal enjoyment, negatively impacting athlete development. This belief aligns with previous research highlighting that projecting their own unfulfilled sporting ambitions onto their children is one explanation for parents' inappropriate engagement and behaviours at their children's competitions (Brummelman et al., 2013; Holt & Knight, 2014; Knight et al., 2016; Libman, 1998). The idea of vicarious parenting is often attributed to parents' desires for their children to achieve the level of success that they were unable to reach themselves (Holt & Knight, 2014). Specifically, parents have been shown to introduce their children to the sports in which they competed or participated themselves (Bloom, 1985; Côté, 1999). This can have some positive consequences, for instance, parents who have experience within sport believe they are more capable of providing feedback at competitions than others (Holt et al., 2008) and may be better equipped to manage the stressors and emotions encountered at competitions (Harwood & Knight, 2015). Though it can also lead to them wanting to step in more than desired (e.g., Knight et al., 2016). Thus, future work with parents is needed to ensure they fully understand the negative implications of pressure and perhaps more importantly, how to support without being pressuring.

Parents perceived it their responsibility to provide their children with opportunities in sport, enabling them to train and compete, ultimately developing their athleticism. Aligning with the perceptions of the parents, Côtè (1999) identified that during the sampling years, a key role parents play in facilitating sporting development is providing opportunities for their children to enjoy sport, making a financial and time commitment to their child's sporting life, and emphasising sporting achievements during the specialising phase. Likewise, Baker and colleagues (2003) reiterated that during a child's early years as an athlete, parents take a leadership role, providing their child with opportunities in sport and encouraging learning through direct involvement, whilst emphasising fun. Parents therefore recognised the importance of their own education in facilitating these aspects, supporting their child's involvement in sport, and consequently, their development as an athlete. Moreover, they were willing to contribute their time and effort into doing so. This highlights the need for, and parents' interest in, organised education surrounding athlete development, and how parents can best support their child in sport through the opportunities they provide at a young age. In

addition, such education would be beneficial for parents to understand how their involvement should change over time in order to be most positively influential for the athlete (Côtè, 1999; Baker et al. 2003).

In seeking to provide their children with opportunities, previous literature has recognised that it is important that these are developmentally appropriate (Harwood & Knight, 2015). The extent to which opportunities are developmentally appropriate will be largely influenced by the quality and experience of the coach, which can also influence the relationship that develops between parents and coaches. Fostering a positive parent-coach relationship was perceived by parents to positively influence athlete development, which aligns with previous research (Harwood et al., 2019). Specifically, it has been recognised that both parents and coaches can both actively influence, among other things, the development of an athlete's coping strategies and thus, it is likely that an athlete's development would be enhanced if parents and coaches were to work together to implement these strategies (Harwood et al., 2019). Furthermore, how parents and coaches engage with each other has been found to either facilitate or debilitate athletes' experiences in sport, and subsequently influence the psychological development of the child (Knight & Holt, 2014; Jowett & Timson-Katchis, 2005; Weiss & Fretwell, 2004). As such, the fact that parents are valuing parent-coach relationships, aligns with existing literature. However, it also points to the importance of ensuring that parents and coaches have similar views on perceptions of athlete development, specifically if different views would result in athletes receiving conflicting feedback, which may impede the development of a child into an athlete (Jowett & Timson-Katchis, 2005; Weiss & Fretwell, 2004). Unfortunately, Pankhurst et al. (2013) revealed that there is a clear lack of coherence between stakeholder's perceptions of athlete development, suggesting the need for, as previously discussed, organised education regarding athlete development to be available to not only parents, but all stakeholders, providing an opportunity to collaborate.

Beyond the parents themselves, parents perceived that coaches' behaviours also substantially influenced athlete development. Specifically, they perceived coaches held a responsibility to make training enjoyable. Consequently, meaning that child will be more likely to enjoy training, resulting in enhanced motivation to attend sessions, and ultimately increasing athlete development through heightened work ethic. Confirming the parents' perceptions, there is evidence that the motivational climate created by coaches will most likely facilitate the athlete's talent development pathway (Knight, 2019). Furthermore, Mageau and Vallerand (2003) introduced the Coach Athlete Model of Motivation (CAMM), which suggested that coaches' behaviours influence athletes' intrinsic and self-determined extrinsic motivation

through their impact on athletes' perceptions of autonomy, competence, and relatedness. The authors outlined that an autonomy-supportive coaching style is linked to enhanced intrinsic motivation and self-determined extrinsic motivation of the athlete (Mageau & Vallerand, 2003). The coaches' behaviours can be transferred onto the child, highlighting the importance of the coach modelling positive behaviours surrounding their development as an athlete. This is because supporting autonomy contributes to the fulfilment of an athlete's basic psychological needs, optimising motivation (Deci & Ryan, 2002; Reeve, 2006; Tessier et al., 2010). Furthermore, it has been suggested that support for autonomy consequently internalises motivation (Deci & Ryan, 2002) and motivation has been recognised as a fundamental element of sport which can influence athlete development (Paskevich et al., 2007). However, despite the importance of coaches making training fun, it was clear in the participants' responses, that they did not perceive this always occurred. Thus, further embedding of principles relating to fun and enjoyment within coach education may be beneficial.

Parents perceived that coaches also have the responsibility of setting goals for the athlete or holding them to high standards to have a positive influence on their development in such sport. Goal-setting theory proposes that setting specific, quantifiable, and challenging performance goals lead to higher levels of performance (Locke & Latham, 1990; Hall & Byrne, 1988; Lee, 1989). Specifically, process goals have been found to be beneficial for increasing self-efficacy (Williamson et al., 2022), which enhances decision-making (Hepler & Feltz, 2012), increases motivation (Chase, 2001), and is positively correlated with sport performance (Moritz et al., 2000), therefore, supporting the goal-performance relationship.

However, what is of particular note here is the perception of parents that coaches should be holding children to high standards. There is much criticism of coaches who hold high expectations pertaining to achievement, particularly if their emphasis is on winning (i.e., create an ego-orientated climate; reference here). It is, of course, possible for coaches to have high expectations for children related to their effort and focus on progress and improvement, but clarity regarding the expected focus of expectations to support athlete development would be beneficial. Parents perceived that some coaches may focus too narrowly on performance outcomes, rather than also concentrating on development, which could subsequently apply too much pressure on the athlete and ultimately result in the discontinuation of the sport. These findings align with the aforementioned performance narrative, which suggests that for some, results are seen as more important than well-being (Carless & Douglas, 2009; Douglas, 2009; Douglas & Carless, 2006a). In the opinion of the parents that participated in the study, some coaches may implement the performance narrative within the regime of an athlete, posing as

an obstruction to the child's development as an athlete, due to the impact of such pressure on their wellbeing. Comparatively, Henriksen et al. (2009) found that coaches who focus on the athletes' long-term development and evaluate the athlete's attitude more often than their results contribute to creating a successful talent development environment. Similarly, Martindale and colleagues (2007) highlighted that long-term strategy and planning with an emphasis on the athlete's progress rather than on their early results should inform the design and conduct of TDEs. Parents perceived that for a child to develop as an athlete, the focus throughout training should be on their child improving their skills and developing as an athlete, regardless of competition results. Expanding on this, parents seemed to perceive that the child's behaviour towards the sport and during training is of a higher importance than their skill level alone, as this will benefit them in their development as an athlete. However, elite sport is culturally dominated by the performance narrative (Carless & Douglas, 2013) and as individuals are influenced by the environment around them, the performance narrative needs to be addressed among all key stakeholders in an attempt to eliminate the perceived correlation between success and development.

If a coach can build rapport with young athletes and understand and sympathise with how they are feeling during training and competitions, parents perceive this will be most beneficial to the athlete's development. Given the concerns raised above, one would anticipate that a coach who understands and empathises with youth athletes would be unlikely to overemphasis winning and instead would emphasise effort and personal development. Thus, it may be valuable to raise this behavioural requirement, above the expectations point from above. Specifically, there is substantial evidence to demonstrate that effective coaching occurs when a caring climate is created (Henriksen et al., 2010, 2011). Moreover, high quality athlete-coach relationships also occur when athletes perceive a degree of closeness and complementarity with their coach (Davis et al., 2018). Specifically, Jowett et al. (2005) conceptualized the coach–athlete relationship within individual sports as the 3 + 1 Cs model, which comprises of closeness (e.g. the extent to which value, support, and care for each other), commitment (e.g. the coach and athlete's intent to maintain the relationship), complementarity (e.g. how the behaviours of the coach and athlete correspond to each other), and co-orientation (e.g. the coach and athlete establishing common views regarding the athlete's progression) as the coach–athlete relationship is one of the most important influences on athlete development (Jowett, 2017) and impacts athlete motivation and subsequent performance (Mageau & Vallerand, 2003). Clearly, based on the perceptions of parents within the current study, opportunities to develop these high quality, close relationships are key.

It is unclear in the current study how much training the parents perceived was necessary to develop as an athlete, as well as the consequences of an overload of training. Several parents perceived that the more training sessions the child attends, the more beneficial to their development as an athlete. There is evidence that more successful athletes have larger amounts of organised sport-specific practice/training, for the more deliberate practice accumulated, the higher the performance attained (Rees et al., 2016). Contrastingly, other parents perceived that overload can be harmful to athlete development, recognising that children should only be expected to train when necessary. Research has shown that high intensity training at a young age increases the likelihood of sustaining an injury (Huxley et al., 2014). Athletes who were forced into early retirement trained at a significantly higher weekly intensity and completed a significantly higher yearly training load (Huxley et al., 2014). In summary, overtraining at a young age is inappropriate and has the potential to be dangerous (Matos et al., 2011), highlighting that it is essential parents are educated regarding training load in relation to athlete development. However, with the contrasting evidence available regarding training load, it is perhaps understandable that parents were split in their perceptions of this topic. Therefore, further research into this area would be beneficial.

However, it is not only the amount of training that is a consideration for training load. The quality of this training, which includes the quality of feedback provided from coaches, is also likely to influence development (Davids et al., 2008; Cassidy et al., 2009; Klatt and Noël, 2019). In the current study, parents perceived that the specific way in which coaches deliver instructions and feedback can influence development. Specifically, parents perceived that it must be at a level that is appropriate for the child to understand and act upon. This aligns with existing research in which different properties of verbal instruction, including timing, nature, and intent have been found to influence an athlete's learning and subsequent performance (Davids et al., 2008; Cassidy et al., 2009; Klatt and Noël, 2019). That is, the type of verbal communication utilised by coaches with individual athletes can support their skill development and influence each child's overall development into an athlete and their performance within sport (Partington et al., 2014; Correia et al., 2019). Hence, it is recognised that athlete-centred coaching (see Côté et al., 2010) remains essential, and that individualised feedback and instruction approaches should be a consideration, as well as each individual athlete's preferences (Otte et al., 2020).

It is perceived by parents that entering performance sport as a child can impede other areas of development, if the number of obligatory training hours was high. Rather, parents perceived that sampling multiple different sports at a young age is more beneficial to athlete development

than specialising in one singular sport at a young age. A considerable amount of evidence has demonstrated that athletes who had a diversified early sport experience could achieve an elite level of performance in sport (Hayman et al., 2014; Hayman et al., 2011; Coutinho et al., 2014). This is supported by Rees et al. (2016) who identified that the key to reaching elite level may be involvement in diverse sports during childhood and appreciable amounts of sport-specific practice/training in late adolescence and adulthood. In addition, sampling is thought to encourage intrinsic motivation that stems from the fun, enjoyment and competence children experience through their sporting involvement (Cote et al., 2007; Cote & Hay, 2002; Cote et al., 2009). Thus, it appears that parents' perceptions related to this topic do match with evidence. However, there is some degree of contradiction present, given that there were varying views regarding how much children should be training. The consequence is that potentially, children may be overtraining as a result of trying to both sample a range of sports and also engage in a high volume of training in each of those sports. Thus, ensuring that parents understand that sampling sports is an important means for developing in each of those sports and transferring learning would be important (Hayman et al., 2014; Hayman et al., 2011; Coutinho et al., 2014).

Finally, parents perceived that the culture and organisation of sport can also influence development. For instance, the toxic culture of performance sport results in an environment where young athletes are unable to develop their skills due to the uncertainty they may feel in terms of their surroundings and the accompanying atmosphere. In comparison, parents emphasised the importance of creating a healthy environment for athlete development. Again, considerable literature has highlighted the importance of implementing effective talent development environments throughout athlete development pathways (Hauser et al., 2022; Henriksen, et al., 2010; Henriksen, et al., 2011; Larsen et al., 2013; Martindale et al., 2010). Specifically, recognising the need for these environments to be characterised by co-operation, a high degree of cohesion, a strong organisational culture, a focus on performance process, and a whole-person approach (Henriksen et al., 2009). Similarly, parents perceived that a healthy athletic development environment would encompass high quality relationships with teammates and peers, building rapport within the coach-athlete relationship, effective instruction and feedback, and the child being viewed and treated as a person, not just an athlete. Thus, the perceptions developed by parents through their own experiences displayed many commonalties with existing research but emphasises the need for parental education to build confidence through an understanding of the relevant theory behind such information, allowing parents to further encourage the implementation of such environments.

The key stakeholders responsible for creating a positive and healthy environment in sport also includes NGB's, which some parents perceived may negatively influence athlete development through a lack of involvement and/or understanding. This is supported by Pankhurst and colleague's (2013) research which highlights that National Governing Bodies (NGB's) did not agree with, nor support, the existing literature surrounding the five key constructs of Talent Identification and Development, which both parents and coaches were able to infer. Parents perceived some individuals involved within sporting bodies lacked knowledge surrounding athlete development, therefore following inappropriate approaches, or providing misleading advice to others and consequently delaying athlete development as a result. In addition, Sweeney et al. (2022) discovered that stakeholders did appear to understand talent development principles, but that such talent development principles were still not being implemented in an applied context. Thus, suggesting the need for further education regarding athlete development for stakeholders to clarify understanding of development principles and expand knowledge surrounding how to implement such principles within the field. In addition, comparatively to the present study, further research could be conducted into NGB's perceptions of athlete development, and how they developed such perceptions.

Parents perceived that a barrier of athlete development is a lack of awareness of pathways from key stakeholders, which subsequently meant the environment was difficult to navigate. Previous literature has demonstrated that an incoherent player pathway and the disjointed relationships between stakeholders are a significant barrier to long-term player development (Sweeney et al., 2022). The findings of this study revealed that some parents may lack knowledge surrounding athlete development pathways, meaning that they are ill-informed of what is required from their child to maintain their involvement in such a pathway or how to best support them. Similarly, Sweeney and colleagues (2022) also revealed that the parents expressed concerns over the lack of regular communication from coaches and discussed how they are therefore often unaware of their role throughout the pathway, requesting regular parent education workshops to build more positive working relationships tailored toward optimising their influential role (Sweeney et al., 2022). This once again reinforces the need for parental education regarding athlete development and development pathways, enabling parents to support their child's pathway journey most beneficially. Moreover, such findings also highlight the importance of the parent-coach relationship, and the emerging need for further research into such, as well as for educational workshops to be arranged for the two groups of stakeholders to unify.

A lack of guidance from governing bodies and other key stakeholders resulted in parents' perceptions forming from their own knowledge, experience, and education. Some participants conveyed that they developed their perceptions through their own research, finding validation surrounding athlete development in literature. These findings contrast with those of Pankhurst et al. (2013) who found that parents were not familiar with talent development literature as they were not likely to have access to such, and that no stakeholders strongly agreed with the literature surrounding the principles of talent development. The difference in findings of these studies may be due to the lapse of time between the research conducted. For example, the readiness and availability of research has increased substantially since the internet and social media have become more prominent in our day to day lives. Specifically, parents would be able to locate and access literature surrounding athlete development on their own accord. In addition, most participants suggested that they developed their perceptions of athlete development through personal experiences. For example, through their own experiences in sport; their children's experiences in sport; witnessing how other parents interact with their own children in a sporting environment; or conducting discussions with coaches. Similarly, Pankhurst et al. (2013) also discovered that parent's perceptions of talent development were based on the processes they saw and of which their children were part of, suggesting that the provision surrounding athlete development delivered by governing bodies may have been lacking throughout the duration of time between the two studies. If parents are being educated on how to support their children in sport through observation of other parents, perceptions and behaviours that are harmful to athlete development could be transferred. Therefore, it is essential that governing bodies provide parents with the necessary opportunities to expand knowledge, to ultimately be able to positively influence athlete development as a result.

In comparison, arranging discussions with respective coaches was viewed by parents as a positive and insightful way to gain useful information surrounding athlete development. However, Sweeney et al. (2022) discovered that development pathways were characterised by poor communication between coaches and parents and that parents expressed concerns over the lack of regular communication from coaches. The need for parent education workshops was suggested to build more positive working relationships tailored toward optimising parental influence on athlete development (Sweeney et al., 2022). The findings from both studies highlight that parents are aware of the importance of their own communication with the coach and the benefits such conversations might have on their child's development as an athlete, emphasising the need for further research into the parent-coach relationship, as well as for

educational workshops to be arranged for the two groups of stakeholders to collaborate surrounding athlete development and how best to support such.

Both the HAC model (Wylleman et al., 2016) and the ATDE model (Henriksen et al., 2010) are reflected within the results of the current study. In considering these results considering these two models, there is a need to consider how individual, social, and environmental factors may influence athletes' opportunities to develop and progress within sport. Thus, providing support for the revised approach being adopted by Sport Wales. However, what is also important is how the complexity of athlete development is communicated to parents.

In considering the specific alignment between the results of the current study and the pre-existing athlete development models, there are areas that warrant consideration. For instance, the second level of the HAC model reflects the normative transitions that may occur psychologically, such as developing the necessary psychological skills to develop as an athlete (Wylleman & Lavallee, 2004; Wylleman et al., 2013a), which the sample of parents within this study also emphasised as essential for athlete development, perceiving the athlete's skills and characteristics as being significantly positively influential. However, it was also apparent that parents recognised that athletes may have different strengths in this area, which fits with the ATDE model, which recognises the individual person factors that influence development. Furthermore, participants often referred to the importance of enjoyment within athlete development due to the resultant effect on the child's motivation, recognising that different athletes may experience enjoyment from different aspects of training and developing. This again aligns with the ATDE model, with the athlete and their individual experiences and biology being at the centre of the model.

The third level of the HAC model is representative of the changes that may occur as the athlete develops psychosocially and denotes those individuals who are perceived by athletes as being significant during that transition (e.g., parents, coach). (Wylleman & Lavallee, 2004; Wylleman, Reints, & De Knop, 2013a). Similarly, participants in the current study perceived that parental involvement and coaching were substantially more influential than other factors associated with athlete development due to the impact the key stakeholders can have on a child, whether that be harmful or supportive. Again, the importance of those surrounding individuals (i.e., the microsystem) are recognised as critical within the ATDE model (Henriksen et al., 2011). However, of note is the importance of communication within the club environment, including between coaches, peers, and other key stakeholders such as family (Henriksen et al., 2010). This communication was not discussed so readily by participants within the current

study, but the importance of parents and coaches being on the same page and coaches understanding the specific needs of the children they were working with was highlighted.

Finally, as previously discussed within the HAC model, an athlete may enter the mastery stage and secure a professional occupation in the field of sport (Wylleman & Lavallee, 2004; Wylleman, Reints, & De Knop, 2013a), but that does not ensure the athlete is financially self-sufficient (Wylleman, 2016) as many athletes require continued financial support from significant others (e.g. parents) (Reints, 2011). This was once again reflected within the participants perceptions of athlete development, who recognised the continued influence of parental involvement as well as emphasising how socio-economic factors may influence athlete development. This also links to the macro-level of the ATDE model, which refers to social settings that do not contain the athletes, as well as to the culture to which the athletes belong such as sport governing bodies (Henriksen et al., 2010). Just as the ATDE model recognises the importance of NGB's and the influence an NGB can have on athlete development, the participants of the current study highlighted how they perceive NGB's are potentially responsible for the lack of knowledge surrounding athlete development and the responsibility they must further educate key stakeholders on the topic, to best support athlete development.

Applied Implications

The results highlight that further education surrounding athlete development is essential for all key stakeholders, including parents. These findings may be beneficial for Sport Wales in the implementation of their new initiative regarding athlete development, displaying how parents' perceptions can impact athlete development (and consequently the implementation of such initiative) and how the way in which such perceptions are developed can be improved upon with the support of Sport Wales through the introduction of educational resources and implementation of seminars and workshops. Specifically, the key findings of the study suggest that such educational resources and practical workshops could include information regarding the importance of enjoyment and motivation within sport; the role of challenge within development; focussing on development rather than success; the consequences of parental pressure; the parent-coach relationship; sampling vs. specialising; training load; and ATDE's in order to bridge the gaps in parents' knowledge of athlete development. Through such education, parents may begin to understand how their knowledge of athlete development and subsequent actions can benefit their child's development as an athlete. In addition, future work with parents is also needed to ensure they fully understand the negative implications of pressure and perhaps more importantly, how to support without being pressuring. Thus, educational

resources should be produced, and workshops held to discuss such, bringing together literature and case studies to educate parents surrounding the consequences of parental pressure in sport and other alternative ways to support. Ultimately, guiding parents in how to best tailor their involvement, in the form of their behaviours, actions, and communication, to be most beneficial in supporting their child's development into an athlete.

In addition, this study highlights the need for Sport Wales to organise seminars and workshops to educate NGB's surrounding athlete development and development pathways to ensure they are providing the correct guidance and advice to athletes and parents. This study may also benefit NGB's in Wales who are interested in further stretching the developmental focus to each sport, by initially educating key stakeholders, such as parents and coaches, which could be achieved by designing and compiling informative resources surrounding the matter, arranging seminars and workshops to share such information. This can be achieved through further research into parents' perceptions of sport-specific athlete development. Moreover, the findings emphasise that NGB'S need to do more to ensure that youth sport experiences include space and time for socialising and developing positive peer relationships (Furusa et al., 2024; e.g., organising fun social events post training/competition to integrate young athletes into club environments.

Limitations and Future Research

There are limitations of this study that should be considered, particularly by those who intend to conduct further research in this area. Firstly, only one interview was conducted with each participant. Thus, the participants were not provided with a chance to reflect on the information shared or to expand on previous answers. Additional interviews would have provided an opportunity to confirm the accuracy of responses and for the researcher to refine the parents' perceptions through the collection of further information regarding the attitudes and beliefs that may have impacted such perceptions. In addition, participants' perceptions of the influence of demographic factors on athlete development were not expanded upon during interviews with the participants following the initial responses in the survey. Thus, a second interview would have provided the researcher with an opportunity to include additional questions surrounding demographics. Therefore, it is unknown how parents may have developed such perceptions an important direction for future research could involve undertaking multiple interviews with each participant.

A further limitation of this study was that the data collected from parents were not compared to information or experiences from their children. Therefore, where parents' perceptions were

often developed from their own personal experiences of parenting within sport, perceptions could be dependent upon their children's knowledge and or beliefs surrounding athlete development. In addition, such anecdotes may have been second-hand, and could be perceived differently by the children who had experienced it themselves, as parents often experience a feeling of bias towards their children. Therefore, it could be interesting to compare such perceptions. To extend knowledge, an important direction for future research could involve comparing parents' perceptions of athlete development with the views of young athletes.

Moreover, given that this research was conducted across several sports, results and their implications may be of limited context as they are not sport specific. Therefore, results may not apply to all NGB's or alternative athlete development pathways and environments. In this respect, findings may not be relevant in all sports. Thus, it is important to consider the transferability of these findings to specific sporting contexts. However, given the recent restructure of the Sport Wales focus, it was essential from both an organisational and applied perspective to discover stakeholder perceptions of athlete development across all sports within Wales.

It is evident from the findings of this study that some parents had less knowledge surrounding athlete development than others, and that those parents who appeared more knowledgeable had developed such perceptions through personal experience. Therefore, future research could explore the development of practical strategies such as workshops and/or educational materials, with the guidance of parents, to assist them in how to engage with their child's development into an athlete most beneficially. This would provide an opportunity for researchers to understand the effectiveness of the implementation of such practical strategies and/or educational materials, ultimately increasing parents' knowledge of athlete development as a result.

Conclusion

In summary, this study identified that parents' perceptions of athlete development largely align with the literature, despite parents often not being supported or guided in their development of such perceptions. However, it was also discovered within the present study that parents' perceptions of some aspects of athlete development differ from the literature. This can result in behaviours that have the potential to impede athlete development, and therefore, the implementation of the Sport Wales initiative. This could unintentionally undermine the entire approach that Sport Wales are engaging with, highlighting just how important it is to ensure communication to parents is clear and consistent. Particularly, the findings of the current study

demonstrate that more needs to be done to educate parents regarding athlete development in order to eliminate the potential of negative or detrimental parental involvement harming a child's development as an athlete. If parents of young athletes possessed further knowledge of the dynamic process of athlete development and the fundamental factors that fabricate athlete development, they would be better able to support and encourage their child's development and could, therefore, increase athlete development as a result. Specifically, the results of this study highlight the specific areas that parents require upskilling and enhanced knowledge, as well as the overreliance on personal experiences upon which to make judgements regarding their child's development. The findings highlighted that although different parents prioritise conflicting aspects of an athlete's skillset in order to develop, it is greatly understood that enjoyment has the most positive influence on athlete development. Overall, parental involvement was perceived to have a greater positive influence on development than the athlete's skills and characteristics. However, when comparing parent's perceptions to what is put into practice, it became apparent that parents need to be educated surrounding the topic. Coaching style was perceived by parents to have the greatest positive influence on athlete development. Although parents perceive the type of training an athlete receives to positively influence development, parents perceive the number of hours required to be spent training negatively influences athlete development. Interestingly, it was perceived by parents that socio-environmental factors such as location and cost do not influence athlete development. Lastly, it was revealed that such perceptions were mostly developed through personal experience or through parents seeking their own education regarding athlete development. Therefore, highlighting how parental involvement could have a greater positive influence on athlete development if parents received education surrounding the topic from NGB's and clubs, providing a direction for future improvements.

Appendices

Appendix A – Participant Information Sheet

PARTICIPANT INFORMATION SHEET
(Version 1.1 Date: 30th September 2022)

Project Title:
Parents' Perceptions of Athlete Development

Contact Details:

Lead Researcher: Zoe Davies ([redacted])
Co-Researchers: Prof. Camilla Knight ([redacted])

1. Invitation Paragraph
We are contacting you to ask if you will take part in a research project being conducted by Swansea University in collaboration with Sport Wales. The project is being conducted to help gain information to support the new working approach of the Sport Wales Institute and will be useful in helping to ensure that information produced for and provided to parents is as beneficial as possible in facilitating sporting development.

2. What is the purpose of the study?
The purpose of the study is to explore parents' understanding of athlete development and identify how and what has influenced this understanding.

3. Why have I been chosen?
You have been chosen because you have a child who is/was involved in a sport within the UK and thus, are likely to have a lot of useful thoughts and ideas that may help answer our questions.

4. What will happen to me if I take part?
As at the end of the survey you indicated your interest in subsequently talking about your answers in more detail, we are following up to see if you'd like to take part in an interview. The interview will take approximately 60 minutes and will take place on zoom to ensure it is convenient for you.

5. What are the possible benefits of taking part?
Through your participation you'll have a chance to think about your child's development and consider the areas that you think are important for them to focus on. This process of reflection can be enjoyable and help you to get a better understanding of what you do and do not need to do to support your child in sport. Additionally, through providing your answers in the interview, you will provide extremely valuable information for Sport Wales to ensure they can create resources that are as beneficial as possible for parents moving forwards and ensure that all parents understand how they can best support their children's sporting development.

6. What are the possible disadvantages of taking part?

You will not feel any physical risks and it is not anticipated that there are any psychological risks associated with participating. The questions are not of a sensitive nature. However, if there are any questions you do not want to answer you do not need to and you can choose to stop completing the survey and/or the interview at any time without any penalty.

7. Will my taking part in the study be kept confidential?

All the information disclosed in this study will be kept strictly confidential. Consent will be provided anonymously unless you provided your contact details to complete an interview. All participants will be allocated a participant number and published results will only contain aggregated information and no individual identifying information will be included. Any information shared with Sport Wales will be anonymized. The procedures for handling, processing, storage, and destruction of data will be compliant with General Data Protection Regulation (April 2016) and Swansea University Guidelines. Further information on this is provided at the end of this letter.

8. What if I have any questions?

If you have any further questions or want further information on the study, then please contact Zoe or Camilla on the details provided above. The project has been approved by the Faculty of Science and Engineering Research Ethics Committee at Swansea University. If you have any questions regarding this, any complaint, or concerns about the ethics and governance of this research please contact the Chair of the College of Engineering Research Ethics Committee, Swansea University: coe-researchethics@swansea.ac.uk. The institutional contact for reporting cases of research conduct is Registrar & Chief Operating Officer. Email: researchmisconduct@swansea.ac.uk. Further details are available at the Swansea University webpages for Research Integrity. http://www.swansea.ac.uk/research/researchintegrity/."

Many thanks for considering the study

Data Protection and Confidentiality

Your data will be processed in accordance with the Data Protection Act 2018 and the General Data Protection Regulation 2016 (GDPR). All information collected about you will be kept strictly confidential. Your data will only be viewed by the researcher/research team. Online data will be collected through SurveyMonkey which is full GDPR compliant and will not have access to your personal data.

All electronic data will be stored on a password-protected computer file at Swansea University. All paper records will be stored in a locked filing cabinet at Swansea University. Your consent information will be kept separately from your responses to minimise risk in the event of a data breach.

Please note that the data we will collect for our study will be made anonymous at the end of the data collection period (April 2022) thus it will not be possible to identify and remove your data at a later date, should you decide to withdraw from the study. Therefore, if at the end of this research you decide to have your data withdrawn, please let us know within one month of completing the survey.

Please note that if data is being collected online, once the data has been submitted online you will be unable to withdraw your information.

The lead researchers (Richard Keegan and Camilla Knight) will take responsibility for data destruction and all collected identifiable data will be destroyed on completion of the study.

Data Protection Privacy Notice

The data controller for this project will be Swansea University. The University Data Protection Officer provides oversight of university activities involving the processing of personal data and can be contacted at the Vice Chancellors Office.

Your personal data will be processed for the purposes outlined in this information sheet.
Standard ethical procedures will involve you providing your consent to participate in this study by completing the consent form that has been provided to you.

The legal basis that we will rely on to process your personal data will be processing is necessary for the performance of a task carried out in the public interest. This public interest justification is approved by the College of Engineering Research Ethics Committee, Swansea University.

The legal basis that we will rely on to process special categories of data will be processing is necessary for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes.

How long will your information be held?
We will hold any personal data and special categories of data until the end of the data collection period and all personal data will be deleted as soon as the data collection is terminated (April 2019).

What are your rights?
You have a right to access your personal information, to object to the processing of your personal information, to rectify, to erase, to restrict and to port your personal information. Please visit the University Data Protection webpages for further information in relation to your rights.

Any requests or objections should be made in writing to the University Data Protection Officer:-

University Compliance Officer (FOI/DP)
Vice-Chancellor's Office
Swansea University
Singleton Park
Swansea
SA2 8PP
Email: dataprotection@swansea.ac.uk

How to make a complaint
If you are unhappy with the way in which your personal data has been processed you may in the first instance contact the University Data Protection Officer using the contact details above.

If you remain dissatisfied then you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at: -

Information Commissioner's Office,
Wycliffe House,
Water Lane,
Wilmslow,
Cheshire,
SK9 5AF
www.ico.org.uk

Appendix B – Consent Form

Consent Form
(Version 1.1, Date: 30/09/2022)

Project Title:
Myths and Mysteries of Athlete Development: Parents' Perspectives

Contact Details:
Zoe Davies - ([redacted])
Prof. Camilla Knight – [redacted]

	Please initial box
1. I confirm that I have read and understood the information sheet dated 30/09/2022 (version number 1.1) for the above study and have had the opportunity to ask questions.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.	☐
3. I understand that sections of any of data obtained may be looked at by responsible individuals from the Swansea University or from regulatory authorities where it is relevant to my taking part in research. I give permission for these individuals to have access these records.	☐
4. I understand that data I provide may be used in reports and academic publications in anonymous fashion	☐
5. I agree to take part in the above study.	☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Person taking consent	Date	Signature
_____	_____	_____

Researcher Date Signature

Appendix C – Survey

* Please indicate the extent to which you think the following child-related factors may influence athlete development.

	Very negatively	Negatively	Slightly negatively	No influence	Slightly positively	Positively	Very positively
The child's physical skills	○	○	○	○	○	○	○
The child's psychological skills	○	○	○	○	○	○	○
The child's confidence in their sporting ability	○	○	○	○	○	○	○
The child enjoying training and competitions	○	○	○	○	○	○	○
The child winning from a young age	○	○	○	○	○	○	○
The child seeking to challenge oneself	○	○	○	○	○	○	○
The child only attempting skills that they are comfortable with/able to do	○	○	○	○	○	○	○

* Please indicate the extent to which you think the following parent-related factors may influence athlete development.

	Very negatively	Negatively	Slightly negatively	No influence	Slightly positively	Positively	Very positively
Quality of the parent-child relationship	○	○	○	○	○	○	○
The parent encouraging their child's involvement in sport	○	○	○	○	○	○	○
The parent providing their child with opportunities to develop in sport	○	○	○	○	○	○	○
The parent managing organisational demands associated with travel/cost etc.	○	○	○	○	○	○	○
The parent adapting their involvement based on the child's age	○	○	○	○	○	○	○
Both parent and child being involved for the same reasons	○	○	○	○	○	○	○
The parent understanding what their child wants from sport	○	○	○	○	○	○	○
The parent being on the same page as the coach	○	○	○	○	○	○	○
The parent expecting their child to win	○	○	○	○	○	○	○
The parent putting pressure on their child to take part	○	○	○	○	○	○	○
The parent focussing only on performance and winning	○	○	○	○	○	○	○
The parent directing children's involvement	○	○	○	○	○	○	○

* Please indicate the extent to which you think the following coach-related factors may influence athlete development.

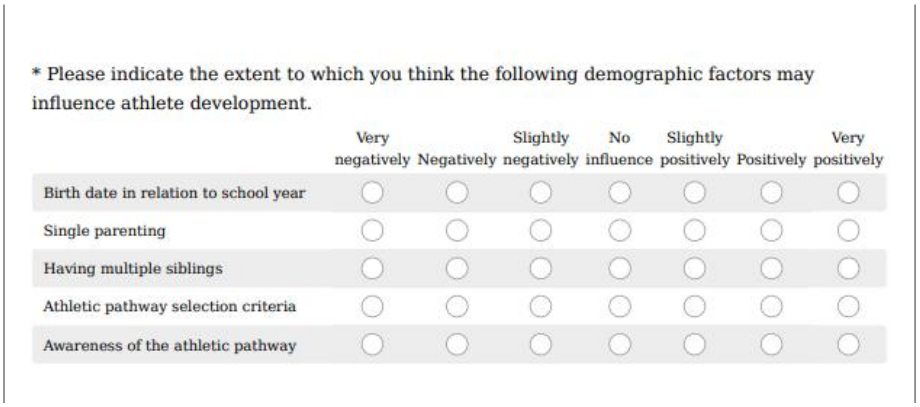
	Very negatively	Negatively	Slightly negatively	No influence	Slightly positively	Positively	Very positively
Quality of the coach-athlete relationship	○	○	○	○	○	○	○
Qualification of coaches	○	○	○	○	○	○	○
The coach engaging in safe practices	○	○	○	○	○	○	○
The coach holding athletes to a very high standard	○	○	○	○	○	○	○
The coach selecting favourites	○	○	○	○	○	○	○
Quality of instruction provided by the coach	○	○	○	○	○	○	○
Quality of feedback provided by the coach	○	○	○	○	○	○	○
The coach caring about the child as a person	○	○	○	○	○	○	○
The coach caring about the child only as an athlete	○	○	○	○	○	○	○
Using coaching practices suited to the athlete	○	○	○	○	○	○	○
The coach implementing challenge into training	○	○	○	○	○	○	○
The coach including skill-based drills in training	○	○	○	○	○	○	○
The coach including games/play in training	○	○	○	○	○	○	○
Using developmentally appropriate coaching practices	○	○	○	○	○	○	○

* Please indicate the extent to which you think the following training-related factors may influence athlete development.

	Very negatively	Negatively	Slightly negatively	No influence	Slightly positively	Positively	Very positively
Number of hours spent training	○	○	○	○	○	○	○
Missing school to train/compete	○	○	○	○	○	○	○
Access to sport science support e.g. strength and conditioning coach, nutritionist, psychologist, physiotherapist	○	○	○	○	○	○	○
Deliberately participating in only one sport from a young age	○	○	○	○	○	○	○
Participating in many different sports through early adolescents	○	○	○	○	○	○	○
Quality of equipment provided within the facility	○	○	○	○	○	○	○

* Please indicate the extent to which you think the following socio-environmental factors may influence athlete development.

	Very negatively	Negatively	Slightly negatively	No influence	Slightly positively	Positively	Very positively
Parents finding the time	○	○	○	○	○	○	○
Cost of training	○	○	○	○	○	○	○
Cost of competing	○	○	○	○	○	○	○
Location of training facility	○	○	○	○	○	○	○
Location of competition facility	○	○	○	○	○	○	○



* Please indicate the extent to which you think the following demographic factors may influence athlete development.

	Very negatively	Negatively	Slightly negatively	No influence	Slightly positively	Positively	Very positively
Birth date in relation to school year	○	○	○	○	○	○	○
Single parenting	○	○	○	○	○	○	○
Having multiple siblings	○	○	○	○	○	○	○
Athletic pathway selection criteria	○	○	○	○	○	○	○
Awareness of the athletic pathway	○	○	○	○	○	○	○

Appendix D – Interview Guide

Interview Guide

I appreciate you coming along today and giving up your time to take part in this study.

As you know, this interview is part of a study to learn more about parents' perceptions of athlete development. Your participation is voluntary, and you are free to withdraw at any time. If there is a question that you don't want to answer, that's absolutely fine, and all information shared today is confidential. There are no wrong or right answers. Do you have any questions you want to ask me before we begin?

Introductory Questions

- Why did you introduce your child(ren) to sport?
- What were you hoping your child(ren) might develop through their participation in sport?

Perceptions of Athlete Development

- Can you name any **child**-related factors that you think may influence athlete development in a positive way? Why?
- Can you name any child-related factors that you think may influence athlete development in a negative way? Why?
- What led you to the perception that child-related factors may influence athlete development?
- What impact do you think your views on these child-related factors might have on your child's development as an athlete?
- What might affect your view on how child-related factors influence athlete development?

- Can you name any **parent**-related factors that you think may influence athlete development in a positive way? Why?
- Can you name any parent-related factors that you think may influence athlete development in a negative way? Why?
- What led you to the perception that parent-related factors may influence athlete development?
- What impact do you think your views on these parent-related factors might have on your child's development as an athlete?
- What might affect your view on how parent-related factors influence athlete development?

- Can you name any **coach**-related factors that you think may influence athlete development in a positive way? Why?
- Can you name any coach-related factors that you think may influence athlete development in a negative way? Why?
- What led you to the perception that coach-related factors may influence athlete development?
- What impact do you think your views on these coach-related factors might have on your child's development as an athlete?
- What might affect your view on how coach-related factors influence athlete development?

- Can you name any **training**-related factors that you think may influence athlete development in a positive way? Why?
- Can you name any training-related factors that you think may influence athlete development in a negative way? Why?
- What led you to the perception that training-related factors may influence athlete development?
- What impact do you think your views on these training-related factors might have on your child's development as an athlete?
- What might affect your view on how training-related factors influence athlete development?

- Can you name any **socio-environmental** factors that you think may influence athlete development in a positive way? Why?
- Can you name any socio-environmental factors that you think may influence athlete development in a negative way? Why?
- What led you to the perception that socio-environmental factors may influence athlete development?
- What impact do you think your views on these socio-environmental factors might have on your child's development as an athlete?

- What might affect your view on how socio-environmental factors influence athlete development?

- Can you name any **demographic** factors that you think may influence athlete development in a positive way? Why?
- Can you name any demographic factors that you think may influence athlete development in a negative way? Why?
- What led you to the perception that demographic factors may influence athlete development?
- What impact do you think your views on these demographic factors might have on your child's development as an athlete?
- What might affect your view on how demographic factors influence athlete development?

Influences on Perceptions of Athlete Development

- Overall, what or who, would you say, has influenced your current perceptions of athletic development?
- Where do you seek information regarding your child(ren)'s athletic development?
- Where do you seek information regarding your role within your child(ren)'s athletic development?
- What information would be useful to you, as a parent, to support your child's athletic development?
- How would you like to receive this information?

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