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Exploring the role of socioeconomic status and psychological characteristics on talent development in an English soccer academy

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ABSTRACT

Social factors and psychological characteristics can influence selection and development in talent pathways. However, the interaction between these two factors is relatively unknown. The aim of this study was to investigate the implications of socioeconomic status and psychological characteristics in English academy soccer players ($n = 58$; aged 11 to 16 years). To assess socioeconomic status, participants' home postcodes were coded according to each individual's social classification and credit rating, applying the UK General Registrar Classification system and Cameo^{TM} geodemographic database, respectively. Participants also completed the six factor Psychological Characteristics for Developing Excellence Questionnaire (PCDEQ). A classification of 'higher-potentials' ($n = 19$) and 'lower-potentials' ($n = 19$) were applied through coach potential rankings. Data were standardised using z-scores to eliminate age bias and data were analysed using independent sample t-tests. Results showed that higher-potentials derived from families with significantly lower social classifications ($p = 0.014$) and reported higher levels for PCDEQ Factor 3 (coping with performance and developmental pressures) ($p = 0.007$) compared to lower-potentials. This study can be used to support the impetus for researchers and practitioners to consider the role of social factors and psychological characteristics when selecting and developing sporting talent. For example, facilitating player-centred development within an academy and, where necessary, providing individuals with additional support.

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Socioeconomic factors; psychological skills; talent identification; talent development; academy football

Introduction

Talent development pathways in soccer are mapped by both professional soccer academies (Dugdale et al. 2021) and National Governing Bodies (e.g., the Elite Player Performance Plan; The Premier League, 2011) to facilitate long-term development towards expertise. An increasing volume of research has reported the complex and multidimensional nature (i.e., technical, tactical, physical, psychological, social) of the talent development processes in youth soccer (Kelly and Williams 2020; Roberts, Rudd, & Reeves, 2020). Social factors can influence sport participation and should be considered in the creation of any development strategy (Bailey et al. 2010). However, in comparison to other characteristics that contribute towards talent development, the socioeconomic status of a family's social classification is often overlooked (e.g., Côté et al. 2006; Reeves et al., 2018; Burgess and Naughton 2010; Turnnidge et al. 2014; Taylor and Collins 2015; Winn et al. 2017).

In comparison to socioeconomic factors, there has been a growth in research directly related to sport psychology in youth soccer over the last two decades (e.g., Morris 2000; Pain and Harwood 2004; Harwood and Knight 2015; Godfrey and Winter 2017). It is understood that players who attain 'elite' status consistently apply psychological skills that optimise development, whilst applying the capability to successfully overcome possible challenges they will face throughout the development process (e.g., Mills et al. 2012; MacNamara and Collins 2013; Cook et al. 2014; Gledhill et al. 2017). Despite the growing evidence base, many authors (e.g., Pain and Harwood 2004; Cushion et al. 2012; Larsen et al. 2012; Cook et al. 2014) have reported that the attention to the psychological development of young players is inadequately addressed in comparison to other multidisciplinary aspects of performance, such as technical skill (Koopmann et al. 2020) or physical conditioning (Murr et al. 2018).

These observations highlight the need for further studies within sport sociology and psychology in academy soccer, to better understand the possible facilitative (and debilitative) factors towards greater development in applied environments (Reilly and Gilbourne 2003; Christensen et al. 2011; Gledhill et al. 2017).

Socioeconomic status and geographic location

From a geographical viewpoint, it has been proposed that the region where participation, performance, and personal development takes place is a major factor affecting talent pathways (e.g., Baker and Logan 2007; Bruner et al. 2011; Balish and Côté

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2014; Turnnidge et al. 2014; Steingrover et al. 2017). For example, Côté et al. (2006) revealed there was a significant over-representation of 'elite' athletes within North American hockey, baseball, basketball, and golf associations who were born in small cities (with a population of less than 500,000) when compared with larger cities (with a population over 500,000). Comparable findings were also reported by Leite et al. (2021), revealing that athletes selected in the National Basketball Association (NBA) draft were commonly from small cities (<100,000). This observation suggests that relative access to facilities, potential economic volume, and subsequent development and performance outcomes could be affected by a number of social and geographical factors (Bailey et al. 2010). Thus, it is important that both researchers and practitioners consider social factors when designing, implementing, and evaluating talent development pathways (Rees et al., 2016).

Although there has been limited research, it has been previously stated that 'elite' athletes in many winter sports are selected from largely Northern European and white North American populations with relative access to wealth (King 2007; DeCouto et al. 2021). For example, the distribution of socioeconomic factors, such as ethnicity and relative access to wealth, has been reported in athletes participating the summer and winter Olympic Games (Lawrence 2017). Similar biases are also reflected in findings from the UK in sports such as cricket (e.g., Brown et al. 2021) and rugby (Winn et al. 2017). For instance, Winn et al. (2017) identified that 'elite' athletes with greater deprivation engaged in fewer hours in rugby *and* total sports compared to their least deprived equivalents. They also highlighted the need for further investigation into the association between deprivation and sports performance within a talent development context. The notion of social exclusion has been used to position the underrepresentation of athletes from lower socioeconomic backgrounds (Hayman et al. 2011).

For over two decades, there have been calls to better understand individuals' sociological backgrounds when identifying and developing talent in soccer (Williams, Ford, & Drust, 2020; Williams et al. 1999). In Ireland, for example, young soccer players have tended to be targeted from working class families (Bourke 2003; Finnegan 2019). This may be due to soccer being one of the few sporting prospects for young athletes who derive from lower social classifications (Hodkinson and Sparkes 1997; Finnegan et al. 2017, 2018). Contrary to the research on deprivation and lower participation, situational factors may actually facilitate talent development through acquiring psychological characteristics associated with facing and overcoming adversity, such as commitment, motivation, self-esteem, mental toughness, and resilience (e.g., Collins and MacNamara 2012; Collins et al. 2015, 2016; Savage et al. 2017). Moreover, research has shown that social support is an important moderator of the link between overcoming setbacks and subsequent success (e.g., Gullich and Emrich 2006; MacNamara et al. 2010a, 2010b). Thus, the environment that young athletes live and learn may shape psychological skills that are relevant to developing talent in soccer.

It is plausible that athletes' socioeconomic status, across childhood and adolescence, may influence their sport experiences, which could subsequently impact their development pathway within a soccer academy environment and their trajectory to senior professional status. Research about constraints on participation show that socioeconomic status may lead to a decline in training and participation, thus hindering opportunity to develop and progress (Dagkas and Stathi 2007). Conversely, the hardship of dealing with deprivation may develop resilience or other psychological qualities that are transferable to soccer and, therefore, complement the development process (Collins and MacNamara 2012). Thus, research within youth soccer is required to examine socioeconomic factors and how they impact psychological characteristics and the talent development process.

Psychological characteristics

There has been a noticeable increase in psychological research in soccer-based talent development (Williams, Ford, & Drust, 2020). For example, the ability to engage in problem focussed coping behaviours and seek social support distinguished Dutch players who made it to an 'elite' level compared to those who failed to do so (van Yperen 2009). Moreover, Holt and Mitchell (2006) identified a deficiency in the coping behaviours of professional soccer players near to being released in English clubs. Effectively seeking social support from parents through coping has also been construed as a valuable tool for talent development (Holt and Dunn 2004; Murray et al. 2020). Additionally, recent research showed that an appropriate amount of challenge contributes to an effective learning situation for young players to develop, and associated with greater psychological wellbeing, a drive to succeed, need satisfaction, and self-regulation (Gledhill and Harwood 2014).

A desire to achieve professional status and succeed through adopting greater volitional behaviours could be a result of superior commitment (Gledhill and Harwood 2014) and seeking more high-quality practice activities in soccer (Toering et al. 2011). As an example, Toering et al. (2009) revealed academy soccer players who scored higher on reflection and effort when matched against non-academy players, demonstrating a superior awareness of their strengths and weaknesses, as well as being more prepared to exert effort in training and match-play to improve themselves to a greater extent. Furthermore, Morley et al. (2014) also established professional coaches expressed the importance of 'possessing a determination to succeed' as crucial for successful talent development, demonstrating the importance of possessing the ability to reflect resultant of effort to improve is vital for achieving expertise in professional soccer.

There are various subjective (i.e., coach perception, self-reported questionnaires) and objective (e.g., performance analysis, physical testing) assessments and measures that can be used talent development in youth soccer (Sarmento et al. 2018). As an example, coach ratings of physiological (Dugdale et al. 2020), psychological, and technical (Roberts et al. 2019) characteristics have been used to identify players with the potential to achieve expertise in professional soccer (e.g., Toering et al. 2009; Elferink-Gemser et al. 2012; Mills et al. 2012; Cook et al. 2014). These ideas are supported by data

from Mills et al. (2012), who interviewed ten expert development coaches regarding player development at the critical transition period from youth to professional. Their data proposed six interrelated factors suggested to influence player development, including awareness, resilience, goal-directed attributes, intelligence, sport-specific attributes, and environmental factors.

Since the purpose of talent development should be to identify and then develop towards future performance proficiencies of young soccer players, attention should focus on those characteristics to manage the course of development (Abbott and Collins 2004). Therefore, it is suggested that talent development environments focus on fostering ability in a longitudinal fashion opposed to making decisions on acute ability and performances (MacNamara and Collins 2011). The role of psychological skills for performance, such as high levels of commitment, goal-setting, imagery, and effective preparation, have been found to distinguish successful developers from their less successful counterparts (e.g., MacNamara and Collins 2011; Honer et al. 2015; Dohme et al. 2017; Dugdale et al. 2021). Moreover, characteristics for underachievers often include unrealistic beliefs and expectations, little aspirations, or low perseverance (Zuber et al. 2015).

MacNamara and colleagues (MacNamara et al. 2010a, 2010b; MacNamara and Collins 2011) investigated the stages of talent development to identify key psychological factors that contribute to successful youth to professional transition, further highlighting the need to explore the role of psychological skills in talent development environments. Similar to those found at professional levels of performance, these psychological characteristics for developing excellences (PCDEs) include imagery, goal-setting, and the attitudes and behaviours needed to deal with the challenges, stages, and transitions that epitomise development. The PCDEs facilitate young athletes to optimise their development opportunities, adapt to setbacks, and effectively negotiate key transitions along the pathway of developing excellence (MacNamara and Collins 2011). These factors include coping with first time appearances at a new level of competition, handling significant losses, slumps in performance and coach criticism, and recovering from injuries, selection, and demands for increased training or commitment levels (MacNamara and Collins 2011). Therefore, it is important to profile young soccer players psychological characteristics in order to support them from an individual perspective. Indeed, these psychological characteristics can be impacted by a variety of internal and external factors, although the extent to which socioeconomic status can influence these in academy soccer players remains unknown.

The aim of this exploratory study was to explore these under-studied factors. Specifically, socioeconomic factors of social classification and financial risk (i.e., postcode) and PCDEs (i.e., PCDEQ) were examined between 'higher-potentials' and 'lower-potentials' (i.e., coach development rankings) in an English soccer academy. It was hypothesised that 'higher-potentials' derived from areas with a lower social classification and higher financial risk as well as demonstrated superior psychological skills.

Methods

Participants

A total of 58 male Youth Development Phase participants were examined (under-12 to under-16). All participants were recruited from the same tier-4 (English Football League 2) English professional soccer club and their category-3 academy (based on Elite Player Performance Plan grading; The Premier League, 2011) from the South-West of England. Criteria for inclusion included players must have been contracted for the club during the season of data collection and played outfield. Only outfield players were included due to the contrasting development pathway for goalkeepers and their position specific requirements (Gil et al. 2014). The club was accessed by the lead author who was a funded doctoral researcher by the academy. Parental consent and player assent were collected prior to the study commencing. This study was approved by the Ethics Committee of Sport and Health Sciences at the University of Exeter.

Measures

Socioeconomic status

Social classification and credit score are proxy indicators of socioeconomic status (Darin-Mattsson et al. 2017). In the UK, postcodes are associated with data pertaining to the locale to which they correspond. These data include income, employment, education, health, and crime levels, which can be accessed in multiple ways. For this study, the UK General Registrar Classification system was adopted that uses the average credit rating applying the Cameo™ geodemographic database. This provided a social classification (A, B, C1, C2, D, and E) determined by the UK's Office for National Statistics (2018) and an average credit score (out of 999) for where each participant lives. The social classification was scored numerically, with a higher score relating to a lower social classification (i.e., A = 1, B = 2, C1 = 3, C2 = 3, D = 4, and E = 5). The credit score denotes those with a higher score to have lower financial risk from '0' (low) to '999' (high).

Psychological characteristics for developing excellence questionnaire

The 59-item PCDEQ was used to assess psychological characteristics across six factors: (a) Factor 1 – support for long-term success, (b) Factor 2 – imagery use during practice and competition, (c) Factor 3 – coping with performance and developmental pressures, (d) Factor 4 – ability to organise and engage in quality practice, (e) Factor 5 – evaluating performances and working on weaknesses, and (f) Factor 6 – support from other to compete to my potential. Each of the questionnaire's items is placed on a six-point Likert scale with a similarity response method from '1' (very unlike me) to '6' (very like me). This ensured participants were not allowed to remain neutral and therefore encouraged them to think more carefully about whether they agree or disagree with the statement leading to greater accuracy. Additionally, a mixture of positively and negatively worded items is included to minimise the danger of acquiescent bias (MacNamara and Collins 2013). The PCDEQ is designed for youth athletes, thus offers user-friendly language

that is applicable to this cohort (see MacNamara and Collins 2011 for the psychometric properties of the PCDEQ). The participants completed the PCDEQ during a mid-season (December) evening training session in a classroom setting. They were allocated 45-minutes to complete it and the researcher was available to help answer any questions if the participants were unsure.

Measures of potential

Two coaches from each age group ($n = 10$), who were deemed suitable assessors (UEFA Pro, 'A', or 'B' Licenced alongside either the FA Advanced Youth Award or the FA Youth Award), were asked to rank their players together from highest to lowest in relation to their personal perception of the player's *potential* (i.e., having or showing the capacity to develop into something in the future) to achieve senior professional status. The coaches' perceptions of each individuals potential to achieve professional status were evaluated through the 'coach's eye' (Jokuschies et al. 2017). This judgement and decision-making process is defined as intuitive, experience-based, subjective, and holistic (Lath et al. 2021), whilst often used parallel to terms such as 'gut instinct' (Roberts et al. 2021) and is commonly used in both research and practical youth soccer settings. This created a linear classification of high potential players down to their low potential peers, with each age group then split into thirds using tertiles. This created a group of 'higher-potentials' ($n = 19$), who represent the top third, and a group of 'lower-potentials' ($n = 19$), who represent the bottom third. This enabled a distinct comparison between the higher-potentials and lower-potentials within each age group, with the middle third discarded from the study ($n = 20$).

Data analysis

All data are expressed as mean ± standard deviation. After groups were separated into tertiles, group normality was assessed using the Shapiro–Wilk test, which confirmed the data was normally distributed. As a result of the potential differing results between chronological age groups, such as older players recording greater PCDEQ scores, the PCDEQ data was standardised using *z*-scores within their respective chronological age group to allow an unbiased grouping of players using the following formula: $Z = (x - \mu)/\sigma$. An independent samples *t*-test was used to compare the higher- and lower-potentials' mean scores of social classification, financial risk, and *z*-scores of the six PCDEQ factors. Each age group (i.e., under-12, under-13, under-14, under-15, and under-16) was also assessed individually to underscore any trends or anomalies. The analysis was conducted with significance level set at $P < 0.05$. All analyses were conducted using IBM SPSS Version 23 (IBM Corp, 2015).

Results

Social classification and financial risk

The actual mean values for the social classification and financial risk from each age group are displayed in Table 1. Overall, higher-potentials had a significantly larger ($t(36) = 2.577$, $p = 0.01$) mean score for social classification (Mean ± SD = 2.84 ± 0.96), relating to a lower social classification compared with lower-potentials (Mean ± SD = 2 ± 1.05). There was no significant difference between higher- (Mean ± SD = 833.05 ± 89.73) and lower-potentials (Mean ± SD = 874.11 ± 35.36) for financial risk ($t(36) = -1.855$, $p = 0.08$).

Psychological characteristics for developing excellence questionnaire

The *z*-scores for the PCDEQ of higher- and lower-potentials and results of the independent samples *t*-test are displayed in Table 2. The actual mean values for the PCDEQ from each age group are displayed in Table 3. Overall, there was a significant difference in PCDEQ Factor 3 (coping with performance and developmental pressures), with higher-potentials demonstrating a higher mean score than the lower-potentials ($t(36) = 2.855$, $p < 0.01$). The remaining PCDEQ factors showed no significant differences between higher- and lower-potentials ($p > 0.05$).

Table 1. Age group means for socioeconomic factors.

	Age group				
Socioeconomic status	U12	U13	U14	U15	U16
Social classification					
Higher-potentials	2.50 ± 0.58	3.25 ± 0.96	2.60 ± 0.89	3.25 ± 0.96	2.50 ± 2.12
Lower-potentials	2.50 ± 1.29	2.25 ± 0.96	1.80 ± 1.30	1.25 ± 0.50	2.50 ± 0.71
Financial risk					
Higher-potentials	796 ± 131.41	765.50 ± 77.83	858.60 ± 65.53	890 ± 23.64	864.5 ± 77.08
Lower-potentials	883.25 ± 19.19	877.25 ± 17.41	839.80 ± 42.37	898.25 ± 36.95	887.00 ± 16.97

Table 2. Descriptive statistics of z-scores and t-test for the PCDEQ.

	Higher-potentials	Lower-potentials	*P*
PCDEQ1	0.54 ± 0.83	0.34 ± 1.02	0.95
PCDEQ2	0.04 ± 0.86	−0.14 ± 1.01	0.55
PCDEQ3	0.47 ± 0.73	−0.26 ± 0.86	0.01
PCDEQ4	0.31 ± 0.90	−0.23 ± 0.90	0.07
PCDEQ5	0.06 ± 1.04	−0.03 ± 0.99	0.78
PCDEQ6	−0.06 ± 1.06	−0.07 ± 1.02	0.98

Table 3. Age group means for PCDEQ results.

	Age group				
Socioeconomic status	U12	U13	U14	U15	U16
PCDEQ1					
Higher-potentials	4.83 ± 0.41	5.04 ± 0.42	4.73 ± 0.39	4.30 ± 0.45	4.53 ± 0.41
Lower-potentials	4.87 ± 0.86	4.53 ± 0.40	4.38 ± 0.59	4.90 ± 0.22	4.71 ± 0.66
PCDEQ2					
Higher-potentials	4.02 ± 0.64	4.96 ± 0.42	4.47 ± 0.58	4.44 ± 0.54	3.63 ± 1.35
Lower-potentials	4.29 ± 0.77	4.65 ± 0.68	3.95 ± 1.01	4.19 ± 0.36	4.42 ± 0.47
PCDEQ3					
Higher-potentials	4.02 ± 0.27	4.64 ± 0.33	4.35 ± 0.38	4.00 ± 0.51	4.32 ± 0.19
Lower-potentials	3.96 ± 0.31	3.43 ± 0.40	3.87 ± 0.96	3.82 ± 0.45	3.87 ± 0.19
PCDEQ4					
Higher-potentials	4.93 ± 0.64	5.32 ± 0.44	5.09 ± 0.57	4.86 ± 0.50	4.79 ± 0.91
Lower-potentials	4.79 ± 0.64	4.39 ± 0.47	4.46 ± 1.10	4.71 ± 0.12	5.15 ± 0.21
PCDEQ5					
Higher-potentials	4.95 ± 1.00	5.70 ± 0.12	5.40 ± 0.51	5.25 ± 0.50	5.40 ± 0.85
Lower-potentials	5.45 ± 0.55	4.90 ± 0.68	5.04 ± 0.84	5.70 ± 0.26	5.20 ± 0.57
PCDEQ6					
Higher-potentials	4.54 ± 0.84	4.89 ± 0.52	4.83 ± 0.69	4.22 ± 0.53	3.50 ± 1.51
Lower-potentials	4.43 ± 1.01	4.22 ± 0.73	4.52 ± 0.46	4.89 ± 0.69	4.86 ± 0.61

Discussion

This study aimed to identify whether socioeconomic status and psychological characteristics were associated with coach perceived potential within an English soccer academy context. Our hypothesis was confirmed, whereby results showed players with higher-potential derived from families with a lower social classification compared to players with lower-potential. Moreover, results from the PCDEQ revealed higher-potentials scored significantly greater for Factor 3 (coping with performance and developmental pressures) compared to low-potentials.

The results of greater potential relating to lower social classification concur with Bourke's (2003) and Hodkinson and Sparkes (1997) work, supporting the long-standing tradition of soccer being a sport participated by individuals with lower socio-economic status. Bourke's (2003) early insight into the career development displays the complexity, pressure, and power relationships of all key stakeholders. Almost two decades on, the current findings may imply that soccer has retained a traditional and stereotypical divide between socioeconomic status and participation, which may suggest why higher-potentials derived from lower socioeconomic backgrounds. Soccer generally provides greater accessibility (e.g., participation in the streets, playground, park, or local grassroots clubs) when compared to winter (e.g., skiing, snowboarding, and ice-skating) and summer (e.g., shooting, sailing, and equestrian) Olympic sports that appear exclusive, costly, and less accessible (Lawrence, 2017; Vagenas and Vlachokyriakou 2012). These data provide, albeit preliminary, evidence of an association between lower socioeconomic status and greater coach perceived potential from a soccer-specific context. Further research is required to examine the developmental activities and levels of deprivation among youth athletes to highlight discriminating factors based on specific sports, which could have important implications on talent identification strategies.

While deriving from a lower socioeconomic status may increase the likelihood of participation in soccer-specific activities, it is also important to consider how it can facilitate competence and subsequent coach-perceived potential. Engagement in deliberate practice *and* play (e.g., Ford et al. 2009; Hornig et al. 2016) have both been shown to facilitate long-term development towards expertise. It is plausible to suggest that those who derive from a lower socioeconomic status may engage in more play-like activities due to fewer opportunities to engage in organised sport (Winn et al. 2017). As an example, Uehara et al. (2021) proposed that the poor wealth of young Brazilian football players may actually shape their skill and expertise. They suggested 'poverty' may create contexts that can lead to the emergence of physical and sociocultural environments that can create opportunities for skill acquisition, whereby environmental constraints support people to amuse themselves inexpensively, gain access to employment opportunities, and maintain health and well-being through soccer in dense urban environments (e.g., favelas, inner city areas, and banlieues). In the context of the current study, whilst potentially engaging in play-like activities, as previously observed, these young athletes also have access to coach-led activities through selection into the soccer academy. Thus, the accumulation of these diverse activities may offer greater developmental outcomes for those from a lower socioeconomic status when compared to those from a higher socioeconomic status. It is also important to acknowledge the sociocultural norms of different countries (e.g., England vs. Brazil) and how this can generate various levels of deprivation, which provides a useful avenue for future research.

With regard to the psychological characteristics examined within this study, our findings are consistent with previous studies. For instance, MacNamara and Collins (2013) showed that found 'good developers' within team sports had a significantly greater perceived ability to cope with performance and developmental pressures (e.g., such as overcoming

struggles, set-backs, injury, or a decline in performance) compared to 'poor developers'. These results also compliment qualitative examinations of soccer coaches (Thelwell et al. 2005). For example, Mills et al. (2012) analysis of ten expert coaches revealed six factors, including resilience, that are perceived to either positively or negatively influence player development. Moreover, Cook et al. (2014) reported four general dimensions of mental toughness, including competitiveness with self and others, mind-set, resilience, and personal responsibility, that are inextricably associated with the ability to cope with the performance environment and the pressures inherited with effective development. Thus, from an applied perspective, it is suggested that coaches create a challenging but supportive learning environment to enhance mental toughness and coping skills. However, although mental toughness is readily acknowledged as an important factor in developing expertise in soccer, academy coaches have a lack of knowledge of how to effectively develop this psychological characteristic in players (Cook et al. 2014), whilst the definitions of popular psychological terms such as 'mental toughness' and 'resilience' remains vague and inconclusive in practical settings. Further investigation is required to apply psychological development strategies into academy environments to support coaches' application of these skills (Pain and Harwood 2008; Murray et al. 2020). Professional soccer academies are also encouraged to invest more time and resources into psychological development as well as promote an increased awareness of evidence-based practices and definitions.

When psychological characteristics are associated with lower socioeconomic status, it is possible for situational factors have a positive interaction in facilitating talent development (e.g., Rees and Hardy 2000; Gullich and Emrich 2006; Morgan and Giacobbi 2006; MacNamara et al. 2010a, 2010b). It may be posited that players from families with a lower socioeconomic status may face more recurrent setbacks, through an increased likelihood of being from a household with a lower income and at greater financial risk (Masten et al. 1990; Winfield 1994). This may create an inherent 'rocky road' alongside the development pathway, allowing certain individuals to develop key psychological characteristics (Collins and MacNamara 2012). Essential psychological characteristics may be developed in players from families with a lower socioeconomic status since they may face an increased likelihood of more frequent setbacks and needs to overcome adversity (Masten et al. 1990; Winfield 1994). The development of these psychological characteristics may facilitate higher-potentials to navigate their way through the ups and downs of the development processes within a soccer academy environment (Collins et al. 2015, 2016; Savage et al. 2017). However, due to its preliminary and exploratory nature of this current study, further research is required to substantiate these suggestions before implemented into organisational policies.

Limitations

It is important to consider the limitations and external validity of this study. First, since this was a preliminary and exploratory study with a limited sample, further research with a larger cohort is required. Second, as a result of the cultural and social dynamics in the English soccer academies, the outcomes of these category three male players may be different to youth soccer players from other countries, categories, or females. Third, given postcodes are an estimate of socioeconomic status, it makes assumptions based on locations rather than collecting factual inputs directly from the players family, thus may not truly represent each participants circumstances. Fourth, whilst socioeconomic status may influence certain developmental characteristics, it is acknowledged that parental role modelling and support also plays a crucial role in youth development (Christensen and Sorensen 2009; Murray et al. 2020). Indeed, further research is required to investigate the association between effective parenting skills and socioeconomic factors. Fifth, coach perception was used as a marker of player potential, which is subjective and indefinite. However, it is important to highlight that coach perception regarding talent development has been used in previous empirical research (MacNamara and Collins 2013; Dugdale et al. 2020), whilst coach observation and opinion are central to the subjective nature of youth sport with modern objective information readily available to professional coaches to support their judgement (Sieghartsleitner, Zuber, Zibung, & Conzelmann, 2017; Tangalos et al. 2015). Sixth, whilst PCDEQ Factor 3 was significant, it's important to highlight that the other five factors were insignificant. Therefore, further research is warranted to better understand the broader impact of PCDEs by considering case-by-case studies and not deemed as homogeneous.

Conclusion

These findings reinforce the importance of considering social factors and psychological characteristics as part of multidimensional talent development research. Whilst adding to the relevant literature, further practical implications may be performed through targeting recruitment in deprived areas, applying relevant socioeconomic data to support a multidisciplinary approach, facilitating player-centred development within an academy setting through empathising with an individual's social background, and protecting individuals who are clearly talented, although struggling financially, through providing them with additional support.

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References

Abbott A, Collins D. 2004. Eliminating dichotomy between theory and practice in talent identification and development: considering the role of psychology. J Sports Sci. 22(5):395–408. doi:10.1080/02640410410001675324.

Bailey R, Collins D, Ford P, MacNamara A, Toms M, Pearce G (2010). Participant development in sport: an academic review [online]. Retrieved from: [accessed 2018 Aug 26th]. https://www.sportscoachuk.org/sites/default/files/Participant-Development-Lit-Review.pdf

Baker J, Logan AJ. 2007. Developmental contexts and sporting success: birth date and birthplace effects in national hockey league draftees 2000-2005. Br J Sports Med. 41(8):515–517. doi:10.1136/bjsm.2006.033977.

Balish S, Côté J. 2014. The influence of community on athletic development: an integrated case study. Qual Res Sport Exerc Health. 6(1):98–120. doi:10.1080/2159676X.2013.766815.

Bourke A. 2003. The dream of becoming a professional soccer player. J Sport Soc Issues. 27(4):399–419. doi:10.1177/0193732503255478.

Brown TW, Gough P, Powell A, Greetham L, Khawaja I, Kelly AL. 2021. The sociodemographic profile of the England and Wales Cricket Board (ECB) talent pathways and first-class counties. Manag Sport Leis. 1–15. ePub ahead of print. doi:10.1080/23750472.2021.1949382.

Bruner MW, Macdonald DJ, Pickett W, Cote J. 2011. Examination of birthplace and birthdate in world junior ice hockey players. J Sports Sci. 29(12):1337–1344. doi:10.1080/02640414.2011.597419.

Burgess DJ, Naughton GA. 2010. Talent development in adolescent team sports: a review. Int J Sport Physiol. 5(1):103–116. doi:10.1123/ijspp.5.1.103.

Christensen MK, Laursena DN, Sorensen JK. 2011. Situated learning in youth elite football: a Danish case study among talented male under-18 football players. Phys Educ Sport Pedagogy. 16(2):163–178. doi:10.1080/17408989.2010.532782.

Christensen MK, Sorensen JK. 2009. Sport or school? Dreams and dilemmas for talented young danish football players. Eur Phys Educ Rev. 15(1):115–133. doi:10.1177/1356336X09105214.

Collins D, MacNamara A. 2012. The rocky road to the top: why talent needs trauma. Sports Med. 42(11):907–914. doi:10.1007/BF03262302.

Collins D, MacNamara A, McCarthy N. 2015. Super champions, champions, and almosts: important differences and commonalities on the rocky road. Front Psychol. 6(2009):1–11. doi:10.3389/fpsyg.2015.02009.

Collins D, MacNamara A, McCarthy N. 2016. Putting the bumps in the rocky road: optimising the pathway to excellence. Front Psychol. 7(1482):1–6. doi:10.3389/fpsyg.2016.01482.

Cook C, Crust L, Littlewood M, Nesti M, Allen-Collinson J. 2014. 'What it takes': perceptions of mental toughness and its development in an English Premier League soccer academy. Qual Res Sport Exerc Health. 6(3):329–347. doi:10.1080/2159676X.2013.857708.

Côté J, MacDonald D, Baker J, Abernethy B. 2006. When "where" is more important than "when": birthplace and birthdate effects on the achievement of sporting expertise. J Sports Sci. 24(10):1065–1073. doi:10.1080/02640410500432490.

Cushion C, Ford PR, Williams MA. 2012. Coach behaviours and practice structures in youth soccer: implications for talent development. J Sports Sci. 30(15):1631–1641. doi:10.1080/02640414.2012.721930.

Dagkas S, Stathi A. 2007. Exploring social and environmental factors affecting adolescents' participation in physical activity. Eur Phys Educ Rev. 13(3):369–384. doi:10.1177/1356336X07081800.

Darin-Mattsson A, Fors S, Kåreholt I. 2017. Different indicators of socioeconomic status and their relative importance as determinants of health in old age. Int J Equity Health. 16(1):173. doi:10.1186/s12939-017-0670-3.

DeCouto BS, Cowan RL, Fawver B, Müller E, Steidl-Müller L, Pötzelsberger B, Raschner C, Lohse KR, Williams AM. 2021. Nationality and sociocultural factors influence athlete development and sport outcomes: perspectives from United States and Austrian youth alpine ski racing. J Sports Sci. 39(10):1153–1163. doi:10.1080/02640414.2020.1861739.

Dohme LC, Backhouse S, Piggott D, Morgan G. 2017. Categorising and defining popular psychological terms used within the youth athlete talent development literature: a systematic review. null. 10(1):133–163. doi:10.1080/1750984X.2016.1185451.

Dugdale JH, McRobert AP, Unnithan VB. 2021. Selected, deselected, and reselected: a case study analysis of attributes associated with player reselection following closure of a youth soccer academy. Front Sports Act Living. 3(March):1–12. doi:10.3389/fspor.2021.633124.

Dugdale J, Sanders D, Myers T, Williams AM, Hunter A. 2021. Progression from youth to professional soccer: a longitudinal study of successful and unsuccessful academy graduates. Scand J Med Sci Sports. 2(S1):73–84. doi:10.1111/sms.13701.

Dugdale JH, Sanders D, Myers T, Williams AM, Hunter AM. 2020. A case study comparison of objective and subjective evaluation methods of physical qualities in youth soccer players. J Sports Sci. 38(11–12):1304–1312. doi:10.1080/02640414.2020.1766177.

Elferink-Gemser MT, Huijgen BCH, Coelho-E-Silva MJ, Lemmink APA, Visscher C. 2012. The changing characteristics of talented soccer players – a decade of work in Groningen. J Sports Sci. 30(15):1581–1591. doi:10.1080/02640414.2012.725854.

Finnegan L. 2019. Stepping stones? An exploration of internal football player migration in the Republic of Ireland. Reg Stud Reg Sci. 6(1):596–606. doi:10.1080/21681376.2019.1685905.

Finnegan L, McArdle J, Littlewood M, Richardson D. 2018. Somewhat united: primary stakeholder perspectives of the governance of schoolboy football in Ireland. Manag Sport Leis. 23(1–2):48–69. doi:10.1080/23750472.2018.1513342.

Finnegan L, Richardson D, Littlewood M, McArdle J. 2017. The influence of date and place of birth on youth player selection to a National football association elite development programme. Sci Med Footb. 1(1):30–39. doi:10.1080/02640414.2016.1254807.

Ford PR, Ward P, Hodges NJ, Williams AM. 2009. The role of deliberate practice and play in career progression in sport: the early engagement hypothesis. High Abil Stud. 20(1):65–75. doi:10.1080/13598130902860721.

Gil SM, Zabala-Lili J, Bidaurrazaga-Letona I, Aduna B, Lekue JA, Santos-Concejero J, Granados C. 2014. Talent identification and selection process of outfield players and goalkeepers in a professional soccer club. J Sports Sci. 32(20):1931–1939. doi:10.1080/02640414.2014.964290.

Gledhill A, Harwood C. 2014. Developmental experiences of elite female youth soccer players. Int J Sport Exerc Psychol. 12(2):150–165. doi:10.1080/1612197X.2014.880259.

Gledhill A, Harwood C, Forsdyke D. 2017. Psychosocial factors associated with talent development in football: a systematic review. Psychol Sport Exerc. 31:93–112. doi:10.1016/j.psychsport.2017.04.002.

Godfrey S, Winter S. 2017. Winning mentality: a reflective account of delivery to a professional football academy. null. 1(1):63–75. doi:10.1123/cssep.2016-0016.

Gullich A, Emrich E. 2006. Evaluation of the support of young athletes in the elite sports systems. null. 3(2):85–108. doi:10.1080/16138171.2006.11687783.

Harwood CG, Knight CJ. 2015. Parenting in youth sport: a position paper on parenting expertise. Psychol Sport Exerc. 16(1):24–35. doi:10.1016/j.psychsport.2014.03.001.

Hayman R, Polman R, Taylor J, Hemmings B, Borkoles E. 2011. Development of elite adolescent golfers. null. 3(2):249–261.

Hodkinson P, Sparkes A. 1997. Careership: a sociological theory of career decision making. Br J Sociol Educ. 18(1):29–44. doi:10.1080/0142569970180102.

Holt NL, Dunn JGH. 2004. Towards a grounded theory of the psychosocial competencies and environmental conditions associated with soccer success. J Appl Sport Psychol. 16(3):199–219. doi:10.1080/10413200490437949.

Holt NL, Mitchell T. 2006. Talent development in English professional football. Int J Sport Psychol. 37:77–98.

Honer O, Votteler A, Schmid M, Schultz F, Roth K. 2015. Psychometric properties of the motor diagnostics in the German football talent identification and development programme. J Sports Sci. 33(2):145–159. doi:10.1080/02640414.2014.928416.

Hornig M, Aust F, Güllich A. 2016. Practice and play in the development of German top-level professional football players. Eur J Sport Sci. 16(1):96–105. doi:10.1080/17461391.2014.982204.

Jokuschies N, Gut V, Conzelmann A. 2017. Systematizing coaches' 'eye for talent': player assessments based on expert coaches' subjective talent

criteria in top-level youth soccer. Int J Sports Sci Coach. 12(5):565–576. doi:10.1177/1747954117727646.
Kelly AL, Williams CA. 2020. Physical characteristics and the talent identification and development processes in youth soccer: a narrative review. Strength Cond J. 42(6):15–34. doi:10.1519/SSC.0000000000000576.
King CR. 2007. Staging the winter olympics: or, why sport matters to white power. J Sport Soc Issues. 31(1):89–94. doi:10.1177/0193723506296827.
Koopmann T, Faber I, Baker J, Schorer J. 2020. Assessing technical skills in talented youth athletes: a systematic review. Sports Med. 50 (9):1593–1611. doi:10.1007/s40279-020-01299-4.
Larsen CH, Alfermann D, Christensen M. 2012. Psychosocial skills in a youth soccer academy: a holistic ecological perspective. Sport Sci Rev. 21(3–4):51–74. doi:10.2478/v10237-012-0010-x.
Lath F, Koopman T, Faber I, Baker J, Scorer J. 2021. Focusing on the coach's eye; Towards a working model of coach decision-making in talent selection. Psychol Sport Exerc. 56(102011):1–13. doi:10.1016/j.psychsport.2021.102011.
Lawrence DW. 2017. Sociodemographic profile of an olympic team. Public Health. 148:149–158. doi:10.1016/j.puhe.2017.03.011.
Leite N, Arede J, Shang X, Calleja-González J, Lorenzo A. 2021. The influence of contextual aspects in talent development: interaction between relative age and birthplace effects in NBA-drafted players. Front Sports Act Living. 3(March):1–10. doi:10.3389/fspor.2021.642707.
MacNamara A, Button A, Collins D. 2010a. The role of psychological characteristics in facilitating the pathway to elite performance. Part 1: identifying mental skills and behaviours. Sport Philos. 24(1):52–73. doi:10.1123/tsp.24.1.52.
MacNamara A, Button A, Collins D. 2010b. The role of psychological characteristics in facilitating the pathway to elite performance. Part 2: examining environmental and stage related differences in skills and behaviours. Sport Philos. 24(1):74–96. doi:10.1123/tsp.24.1.74.
MacNamara A, Collins D. 2011. Development and initial validation of the psychological characteristics of developing excellence questionnaire. J Sports Sci. 29(12):1273–1286. doi:10.1080/02640414.2011.589468.
MacNamara A, Collins D. 2013. Do mental skills make champions? Examining the discriminant function of the psychological characteristics of developing excellence questionnaire. J Sports Sci. 31(7):736–744. doi:10.1080/02640414.2012.747692.
Masten AS, Best KM, Garmezy N. 1990. Resilience and development: contributions from the study of children who overcome adversity. Dev Psychopathol. 2(4):425–444. doi:10.1017/S0954579400005812.
Mills A, Butt J, Maynard I, Harwood C. 2012. Identifying factors perceived to influence the development of elite youth football academy players. J Sports Sci. 30(15):1593–1604. doi:10.1080/02640414.2012.710753.
Morgan TK, Giacobbi PR. 2006. Toward two grounded theories of the talent development and social support process of highly successful collegiate athletes. Sport Philos. 20(3):295–313. doi:10.1123/tsp.20.3.295.
Morley D, Morgan G, McKenna J, Nicholls AR. 2014. Developmental contexts and features of elite academy football players: coach and player perspectives. Int J Sports Sci Coach. 9(1):217–232. doi:10.1260/1747-9541.9.1.217.
Morris T. 2000. Psychological characteristics and talent identification in soccer. J Sports Sci. 18(9):715–726. doi:10.1080/02640410050120096.
Murray RM, Dugdale JH, Habeeb CM, Arthur CA. 2020. Transformational parenting and coaching on mental toughness and physical performance in adolescent soccer players: the moderating effect of athlete age effect of athlete age. Eur J Sport Sci. 21(4):580–589. doi:10.1080/17461391.2020.1765027.
Murr D, Raabe J, Höner O. 2018. The prognostic value of physiological and physical characteristics in youth soccer: a systematic review. Eur J Sport Sci. 18(1):62–74. doi:10.1080/17461391.2017.1386719.
Office for National Statistics. (2018). The national statistics socio-economic classification [online]. Retrieved from: [accessed 2018 Aug 22nd]. https://www.ons.gov.uk/methodology/classificationsandstandards/otherclassifications/thenationalstatisticssocioeconomicclassificationnssecrebasedonsoc2010#classes-and-collapses
Pabayo R, Molnar BE, Cradock A, Kawachi I. 2014. The relationship between neighbourhood socioeconomic characteristics and physical inactivity among adolescents living in Boston, Massachusetts. Am J Public Health. 104(11):142–149. doi:10.2105/AJPH.2014.302109.
Pain MA, Harwood CG. 2004. Knowledge and perceptions of sport psychology within English soccer. J Sports Sci. 22(9):813–826. doi:10.1080/02640410410001716670.
Pain MA, Harwood CG. 2008. The performance environment of the England youth soccer teams: a quantitative investigation. J Sports Sci. 26 (11):1157–1169. doi:10.1080/02640410802101835.
The Premier League. (2011). Elite Player Performance Plan [online]. Retrieved from: https://www.premierleague.com/youth/EPPP [accessed June 22, 2019].
Rees T, Hardy L. 2000. An investigation of the social support experiences of high-level sports performers. Sport Philos. 14(4):327–347. doi:10.1123/tsp.14.4.327.
Rees T, Hardy L, Güllich A, Abernethy B, Côté J, Woodman T, Montgomery H, Laing S, Warr C 2016. The great British medalists project: A review of current knowledge on the development of the world's best sporting talent. Sports Med. 46(8):1041–1058. doi:10.1007/s40279-016-0476-2.
Reeves MJ, McRobert AP, Littlewood MA, Roberts SJ 2018. A scoping review of the potential sociological predictors of talent in junior-elite football: 2000–2016. Soccer & Society. 19(8):1–21. doi:10.1080/14660970.2018.1432386.
Reilly T, Gilbourne D. 2003. Science and football: a review of applied research in the football codes. J Sports Sci. 21(9):693–705. doi:10.1080/0264041031000102105.
Roberts AH, Greenwood D, Stanley M, Humberstone C, Iredale F, Raynor A. 2021. Understanding the "gut instinct" of expert coaches during talent identification. J Sports Sci. 39(4):359–367. doi:10.1080/02640414.2020.1823083.
Roberts SJ, McRobert AP, Lewis CJ, Reeves MJ. 2019. Establishing consensus of position-specific predictors for elite youth soccer in England. Sci Med Footb. 3(3):205–213. doi:10.1080/24733938.2019.1581369.
Roberts SJ, Rudd JR, Reeves MJ. 2020. Efficacy of using non-linear pedagogy to support attacking players' individual learning objectives in elite-youth football: A randomised cross-over trial. J Sports Sci. 38(11–12):1454–1464. doi:10.1080/02640414.2019.1609894.
Sarmento H, Anguera M, Pereira A, Araújo D. 2018. Talent identification and development in male football: a systematic review. Sports Med. 48 (4):907–931. doi:10.1007/s40279-017-0851-7.
Savage J, Collins D, Cruickshank A. 2017. Exploring traumas in the development of talent: what are they, what do they do, and what do they require? J Appl Sport Psychol. 29(1):101–117. doi:10.1080/10413200.2016.1194910.
Sieghartsleitner R, Zuber C, Zibung M, Conzelmann A (2017). Talent development in football: The early specialized bird catches the worm! [Online]. Retrieved from: https://boris.unibe.ch/96404/1/Talent%20development%20in%20football.pdf
Steingrover C, Wattie N, Baker J, Helsen WF, Schorer J. 2017. Geographical variations in the interaction of relative age effects in youth and adult elite soccer. Front Psychol. 8(278):1–13. doi:10.3389/fpsyg.2017.00278.
Tangalos C, Robertson SJ, Spittle M, Gastin PB. 2015. Predictors of individual player match performance in junior Australian football. Int J Sport Physiol. 10(7):853–859. doi:10.1123/ijspp.2014-0428.
Taylor RD, Collins D. 2015. Reviewing the family unit as a stakeholder in talent development: is it undervalued? Quest. 67(3):330–343. doi:10.1080/00336297.2015.1050747.
Thelwell R, Weston N, Greenlees I. 2005. Defining and understanding mental toughness within soccer. J Appl Sport Psychol. 17(4):326–332. doi:10.1080/10413200500313636.
Toering TT, Elferink-Gemser M, Jordet G, Jorna C, Pepping GJ, Visscher C. 2011. Self-regulation of practice behaviour among elite youth soccer players: an exploratory observation study. J Appl Sport Psychol. 23 (1):110–128. doi:10.1080/10413200.2010.534544.
Toering TT, Elferink-Gemser MT, Jordet G, Visscher C. 2009. Self-regulation and performance level of elite and non-elite youth soccer players. J Sports Sci. 27(14):1509–1517. doi:10.1080/02640410903369919.
Turnnidge J, Hancock DJ, Cote J. 2014. The influence of birth date and place of development on youth sport participation. Scand J Med Sci Sports. 24 (2):461–468. doi:10.1111/sms.12002.
Uehara L, Falcous M, Button C, Davids K, Araújo D, de Paula AR, Saunders J. 2021. The poor "wealth" of Brazilian football: how poverty may shape

skill and expertise of players. Front Sports Act Living. 3(635241):1–15. doi:10.3389/fspor.2021.635241.

Vagenas G, Vlachokyriakou E. 2012. Olympic medals and demo-economic factors: novel predictors, the ex-host effect, the exact role of team size, and the "population-GDP" model revisited. Sport Manage Rev. 15 (2):211–217. doi:10.1016/j.smr.2011.07.001.

van Yperen NW. 2009. Why some make it and others do not: identifying psychological factors that predict career success in professional adult soccer. Sport Philos. 23(3):317–329. doi:10.1123/tsp.23.3.317.

Williams AM, Ford PR, Drust B 2020. Talent identification and development in soccer since the millennium. J Sports Sci. 38(11–12):1199–1210. doi:10.1080/02640414.2020.1766647.

Williams S, Reilly T, Franks A. 1999. Identifying talented football players: a scientific perspective. Insight. 3(1):20–25.

Winfield LF. 1994. Developing resilience in urban youth. Oakbrook, IL: Urban Monograph Series, North Central Regional Educational Laboratory.

Winn CON, Ford PR, McNarry MA, Lewis J, Stratton G. 2017. The effect of deprivation on the developmental activities of adolescent rugby union players in wales. J Sports Sci. 35(24):2390–2396. doi:10.1080/02640414.2016.1271136.

Zuber C, Zibung M, Conzelmann A. 2015. Motivational patterns as an instrument for predicting success in promising young football players. J Sports Sci. 33(2):160–168. doi:10.1080/02640414.2014.928827.