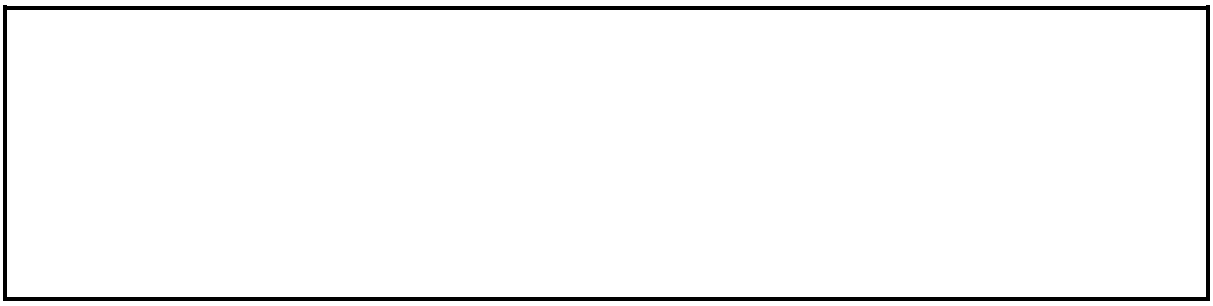

A Scoping Review of the Potential Sociological Predictors of Talent in Junior-elite Football: 2000-2016

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Abstract

The purpose of this scoping review was to examine the potential sociological predictors for identifying talent in junior-elite football. Four academic databases were searched using a systematic search strategy and nine eligibility criteria were applied to ensure only relevant studies were included in the review. A total of 1,107 potential studies were returned for the review, however 1,083 did not meet the eligibility criteria and a further 12 articles were excluded after further screening. Two follow up searches yielded one additional article for inclusion. In total, 13 articles were included in the final scoping review. These studies aligned to four potential sociological predictors of talent in football: 1) hours in practice; 2) coach-child interaction; 3) parental support; and 4) education. Each potential predictor is examined in detail with key findings summarised before impact for practice and future research direction is proposed.

Key words: systematic scoping review; talent identification; talent development;

Introduction

The purpose of this scoping review was to examine the sociological dimensions of Williams and Reilly's four category model of potential predictors of talent in youth football ('the model'; see Figure 1).[1] As the model was one of the first reported attempts to capture the range of factors associated with the identification and development of future elite and professional footballers, this review appears to be well justified. For interested readers, the aims and scope of the model[2] are described in detail elsewhere in this Special Issue. [3] The influence of this four-category model within the academic community is profound, a simple Google Scholar search identified 902 citations. The model is frequently adopted by researchers to support and justify the development of studies across the spectrum of football-related inquiry. Two components of the model, physical predictors and physiological predictors, have been subject to a comprehensive line of academic inquiry, not just because of their potential predictive ability, but due to their influence in performance enhancement. [4]

One potential explanation for this lies within certain ontological and epistemological assumptions guiding the positivist paradigm that underpins physical and physiological research. [5] In the field of talent identification, which often relies on sport coaches applying the scientific theory into practice, such a mechanistic view of human behaviour as something which can be measured and controlled is potentially problematic. Perhaps it is due to a greater understanding of the complex social interactions which occur in the coaching process,[6] and a more inclusive, multidisciplinary approach to talent identification[7] that fundamental sociological and environmental factors have become a more prominent area of investigation.

With the exception of 'hours in practice', which lends itself more readily to a positivist line of inquiry, the remaining sub-components of the sociological dimensions

have been largely ignored. Given the reported difficulties gaining access to professional football clubs, especially for sociologists,[8] this may help to explain the paucity of empirical research dedicated to this particular dimension of the model. However, since the inception of the Elite Player Performance Plan,[9] there is a requirement for professional football clubs to demonstrate and adhere to particular organisational and environmental requirements including: time spent in coaching (i.e. coach-child interaction), formally tracking player progression, engaging parents in the talent development process (i.e. parental support), and in some instances offering hybrid or full time education models for their players.[10]

Figure 1: Model of Potential Predictors of Talent in Soccer.

!INSERT FIGURE 1 HERE!

Source: Adapted from Williams and Reilly 'Talent Identification', NEEDS PAGE NUMBER INSERTING

Whilst the model has acted as a referent point for a number of academic studies, it has also played an important role within applied professional practice. However, despite its widespread usage and application, we have been unable to find any empirical attempt to interrogate, amend, challenge, or question the components of the model. Therefore, one of the purposes of this scoping review was to examine the sociological component of the model to understand what we now know within that domain whilst offering a pathway to further develop research and practice.

Methodology

A scoping review is defined as a type of research synthesis that aims to "map the literature on a particular topic or research area and provides an opportunity to identify key concepts; gaps in the research; and types and sources of evidence to inform practice, policymaking, and research".[11] This scoping review aims to explore the potential impact of sociological factors on the identification and development of youth footballers.[12] The research team devised the broad research question to be addressed, based on the sociological domain of the model, whilst additionally, the study protocol included the identification of search terms, and a selection of academic databases to be searched.[13]

As suggested by Pham et al.[14] the review followed the guidelines presented in Arksey and O'Malley's framework for scoping reviews,[15] whilst adhering to recommendations proposed by Levac, Colquhoun and O'Brien.[16] The process began with the formation of a research team that had experience in research synthesis[17] and the review process consisted of the following five phases: 1) identifying the research question; 2) identifying relevant studies; 3) study selection; 4) charting the data; and 5) collating, summarising, and reporting the results.[18] The optional consultation exercise was not conducted due to time constraints and resources available.

Research question

This scoping review was guided by the following research question: what research exists that explores the sociological domain of the Williams and Reilly model of potential predictors of talent in youth football?[19]

Data sources and search strategy

A comprehensive search was performed using four academic journal databases (i.e. PubMed; Academic Search Complete; Emerald; and SportDiscus). The academic databases provided access to both scientific and social science journals; furthermore, specialist academic sport journals (i.e. Soccer & Society; International Journal of Sport Science & Coaching; Journal of Sports Sciences; and Journal of Sport & Exercise Sciences) were also included for hand-searching to allow for the most comprehensive and broad examination of the extant literature.

Databases were searched for articles published between 1st January 2000 and 31st August 2015. The start year of 2000 was based on the publication year of the Williams and Reilly potential predictors of talent model being published.[20] The search was extended to include 'grey literature', such as national governing body of sport reports and, where appropriate, PhD theses to reduce the risk of publication bias.[21] The following search strings were used to conduct searches across all databases noted above:

(1) Talent* OR "Talent Identification" OR "Talent development" OR "Talent selection" OR TID
(2) "Young people" OR youth OR adolescent* OR "young adult" OR teen* OR child* OR player*
(3) Football OR Soccer OR "association football"

The initial search strategy did not narrow the focus of the papers to a particular theme (i.e. psychological, physiological, physical, or sociological). The decision to focus on specific elements of the model was made following an initial search of the

databases included. The number of hits returned were not so voluminous as to be overbearing and unmanageable. It was also deemed appropriate to consider all of the literature returned through searches and continue the screening process from there.

Eligibility Criteria

Eligibility criteria were applied to the initial title and abstract screening process to assess relevance to the research question. The eligibility criteria applied were:

(1) Must be published, peer-reviewed journals; PhD theses; or peer-reviewed reports;
(2) Must be published between 1st January 2000 and 31st August 2015;
(3) Studies must relate to talent identification and/or development in male association football;
(4) Studies must be empirical in nature;
(5) Cannot be a review of literature, a scoping review, systematic review; or validation of a protocol, instrument or questionnaire;
(6) Cannot be written in a language other than English;
(7) Studies must be specifically focussed on potential sociological predictors of talent in football, as identified by Williams and Reilly;[22]
(8) Cannot include studies where other sports are also included within the analysis; and
(9) Cannot be concerned with Relative Age Effects (RAEs).

Studies that matched the eligibility criteria were downloaded and indexed using the web-based bibliographic manager, Mendeley.[23] This provided a more effective management of studies included in this review. For example, the software automatically scans for potential duplicates. Articles were then subjected to both title and abstract relevance screening within the software.

Selection of Studies

Titles and abstracts were initially screened against the eligibility criteria to save on resources, and procuring articles that didn't meet the minimum criteria for review. A form was developed for detailing each article's key features. All members of the research team agreed the form was appropriate. The form was pretested by two reviewers (MJR & CD) independent of each other using 20 studies to examine inter-reviewer agreement.[24] The overall kappa of the pre-test was 0.889. Previous scoping review studies have suggested a kappa score of 0.8 is considered to represent a high level of agreement.[25] There were no significant disagreements between reviewers and neither reviewer suggested any revisions to the form. The title and abstract of every article were then independently reviewed by two members of the research team (MJR & CD). The author(s) and journal name of each article were fully available to reviewers. The reviewers met regularly throughout the screening process to resolve any conflicts and discuss study selections.[26]

Data Characterisation

All articles considered relevant following title and abstract screening were obtained for full-text review. To establish relevance and extract study characteristics, a specific

framework was developed which included the following: study year, methodological approach, participants and sample size, theoretical underpinning, and results/findings. Two members of the research team (MJR & CD) undertook an initial independent review. Any articles excluded at this stage did not meet the eligibility criteria. Once the independent review had taken place, all members of the research team performed a final review of the articles to resolve any conflicts and ensure internal consistency.

Data Summary and Synthesis

Data were extracted into a single Microsoft Excel 2016 spreadsheet (Microsoft Corporation, Redmond, WA) for validation and coding. Given the focus of the review, methodological quality was not assessed, though it is briefly discussed. The primary function of this review was to use Williams and Reilly's model of potential predictors of talent in youth football as a guide to examine what research exists that explores the sociological domain of the model.[27]

Results

The original search, conducted in June 2015, yielded 1107 potentially relevant studies. After the removal of duplicate articles and relevance screening studies that met the eligibility criteria, the remaining articles were acquired for review. All articles were downloaded through the institutions library holdings. After data characterisation 14 articles were included in the final analysis. An updated search in November 2015 identified 7 potentially relevant studies. However, none made it through the screening process, thus no additional articles were included at this time. A further updated search was undertaken during June 2016, at which time one additional article was identified.[28]

This article passed all relevant screening processes and was included in the review. Figure 1 illustrates the review process and where and how studies were excluded from the final review.

Figure 2: Flow chart of the review process

!INSERT FIGURE 2 HERE!

General characteristics of included sociological studies

The most common participants in the 13 studies included for review were players (n = 9), followed by coaches (n = 2), club officials (n = 2), parents (n = 2), and one study took a holistic approach, involving coaches, club officials, parents, and a sport scientist. There was an equal split between studies that adopted qualitative (n = 6) and quantitative (n = 7) approaches. Studies reviewed varied in focus and research design, however, all were empirical in nature and examined sociological factors suggested by the model. The focus of included studies was dominated by hours in practice (n = 6); followed by coach-child interaction (n = 4), parental support (n = 2), and education (n = 1).

!INSERT TABLE 1 HERE!

Discussion

As a relatively new approach, scoping reviews are quickly gaining momentum as a practical, versatile, yet rigorous process for examining literature. Within areas, such as the sport sciences and sport coaching, where the evidence base for particular subjects is progressing yet, perhaps, not ready for a gold standard systematic review, scoping reviews provide a highly suitable bridge to inform research direction and applied practice.

In this paper, we have provided an overview of the potential sociological predictors of talent identification and development in junior-elite football.[44] Our search sought to examine published and grey literature in order to be comprehensive whilst balancing resources and practicality.[45] It was not within the remit of this scoping review to assess the methodological quality of papers given the variety of factors being examined,[46] though an overview was provided in the results section and brief reference is made to the similarities and differences of methodological approaches in the discussion.

There are clearly a number of sociological factors that can impact upon players' (especially young players') development within sport. However, this scoping review highlights a dearth of literature that considers the potential sociological predictors of talent related to football. It is worth noting, however, that the potential sociological predictors proposed are by no means exhaustive and it is possible that some studies were omitted from this scoping review.

Hours in Practice (HiP)

The notion of 'hours in practice' is repeatedly highlighted as a crucial determinant in the development expertise in football players. This is closely linked to a number of theories and postulations including: deliberate practice;[47] early specialisation and early diversification;[48] and deliberate play.[49] All of the papers included under this section sought to examine the developmental pathway and the activities/sports that various samples of footballers were engaged in prior to their (non)progression to professional status.

From a methodological perspective, all the papers were similar in design; adopting retrospective recall of participation history and engagement in associated forms of activity. Only Ford et al.[50] and Haugarsen et al.[51] included additional methodological protocols to the ones mentioned previously. For example, Ford et al.[52] revisited data[53] four years after the original data were collected to re-examine the professional status of players and examine the participatory time of professional and non-professional players. Furthermore, Haugarsen et al. included a one-week participation diary which was then used to compare the yearly computed results from the recall questionnaire.[54] It might be suggested that these studies adopted more methodologically robust approaches to understanding the phenomenon of HiP than applying retrospective recall questionnaires.

The participants within the HiP studies varied from in country-specific[55] to multi-national populations.[56] Sample sizes varied from a high of 745 participants[57] to a low of 33 participants.[58] The relatively small sample size of Ford et al.[59] however was attributed to the participants being recruited as a follow-up to a previous study.[60] Furthermore, for the purposes of the study, only players aged between 16-18 years of age were re-recruited, further reducing the potential sample size. In comparison, the

largest sample size[61] included all academy players from age 14-21 playing at Norwegian Premier League clubs (n = 745).

Across all of the HiP papers, the most common theme to emerge was that time engaged in football-related play was the most important contributing factor to the development of players. Indeed, professional players were reported to engage in more play-related activity between 6-8 years of age. No significant differences were found at any other age. On average, professional players reported 20% more football-specific practice between 6-12 years old.[62] Similar findings were reported by Ford et al. who indicated that professional players spent on average twice as much time in football-related activity than former-elite players (i.e. those released from the academy system).[63] It is important to highlight, however, that some of the between-paper comparisons are difficult to qualify as there is a variety of terminology used to describe the participants (i.e. elite, former-elite, professional, top-level, etc.), and the activity they engage in (i.e. football practice, specific practice, football-specific practice, organised practice, football-related play). Such terminology variety makes it difficult to compare, contrast, and consider the evidence collectively as it is often difficult to determine the differences being examined.

Whilst a range of age groups were investigated, all were aged 14 years or older at the time of participation. None of the studies reported participants engaging in other sports to a level that was consistent with an early diversification approach,[64] though Hornig, Aust and Gullich indicated that many of their respondents engaged in other game-based activities alongside football.[65] Furthermore, Hornig et al.[66] and Zibung and Conzelmann[67] reported players specialising in football at a later age. Such findings indicate that there may be confounding cultural issues within football, that transcend national boundaries, and contribute to a culturally acceptable notion that players should

specialise in football above other sports from a young age. Interestingly, Ford et al. suggested that their findings supported neither early specialisation nor early diversification approaches and, instead, suggested adopting a skill acquisition approach during the sampling phase.[68]

Specific reference must be made to Ford and colleagues whose study was the only one to consider participants from multiple nations.[69] In total, the study considered seven countries from around the world and, although only considering one age group in the sample (i.e. under 16), generated a number of pertinent findings. For example, the world-wide average for beginning engagement in football-related activity was 4.9 years of age; players engaged in supervised training from 6.9 years old; and, on average, academy training began at 12 years of age. They also found that the time engaged in football-related activity differed between countries, though development pathway for players was comparable. However, something that is worthy of further consideration is the time at which youth players engage in formalised academy settings. Whilst the average was 11.95 years of age (± 2.56 years), youngsters in Portugal became engaged in these environments earlier than in any of the other seven countered investigated at 8.30 years of age (± 1.67 years).

It is possible to state that the evidence surrounding HiP is relatively homogenous. There are some claims that are consistently agreed upon, such as substantial amounts of time spent in football-related play at young ages; though there are also variances, including the number of sports engaged in alongside football, and the volume of engagement in those sports. Overall, it is not clear whether early specialisation or early diversification would be most beneficial for the development of elite/professional footballers.

323

324 **Coach-child Interaction**

325 The five papers included under this theme fell into two distinct categories: talent
326 development environment[70] and youth-to-senior transition.[71] Environment, although a
327 psycho-social construct, does not factor in the model.

328 Two studies[72] explored the potential impact of environment on player
329 development and were similar in methodological design. Indeed, all studies adopted the
330 retrospective 59-point Talent Development Environment (TDE) Questionnaire
331 (TDEQ)[73] with elite youth players. However, Ivarsson and colleagues[74] also explored
332 whether the TDE also impacted upon players perceived well-being, and included a 12-
333 point General Health Questionnaire (GHQ),[75] as well as the 76-item Recovery-stress
334 Questionnaire for Athletes (RESTQ-Sport),[76] in their data capture. The third paper that
335 aligned to TDE[77] investigated coaches' perceptions of optimal development
336 environments within English football academies. The study examined the thoughts of
337 10 expert coaches, with data collected through interviews that focussed on examining
338 the expert coaches' experiential knowledge of managing and leading the talent
339 development environment. These coaches were somewhat homogenous, though there
340 was some variance in years actively coaching (m 14.5, ± s = 6.2 years) and age (m 47.5,
341 ± s = 10.5). All of the coaches held positions with responsibility for overseeing player
342 development during their investment stage (i.e. 16-18).[78]

343 Findings reported by Mills et al. suggested that players perceived the factors
344 that relate to their long-term development to be key strengths.[79] These related mostly
345 to coaching practice (i.e. technical instruction). However, the small sample of
346 participants (n = 50) and low club involvement (n = 3) inhibits the generalisability of

the findings. However, it is worth noting that this study was one of the first to develop the TDE theme within elite youth football. Similarly, Ivarsson et al. suggested that players who perceived their TDE to be supportive and have a focus on long-term development were less likely to suffer with stress and experienced greater well-being.[80]

Mills and colleagues approached their study with the aim of developing a conceptual framework that explored the interaction of factors underpinning an optimal TDE.[81] They included setting clear expectations and goals, ensuring open and honest communication, and promoting self-responsibility were key factors to consider. They reported the need to have a well-defined and espoused culture and organisational core to support the TDE. Mills and colleagues' study also documented that the coaches involved were concerned with "developing well-rounded individuals",[82] in-line with claims in other studies included in this review.[83]

The three papers that specifically examined the transition from youth-to-senior[84] were more diverse in their methodological approaches. Relvas et al. attempted to understand and describe models of applied working practice between youth-to-senior transition.[85] Their study documented a series of semi-structured interviews across 26 European clubs, providing a unique Pan-European data set focussed on applied practice. In contrast, Morris et al. were concerned with understanding transition outcomes,[86] against Stambulova's youth-to-senior transition model.[87] Their study adopted a case study approach, focussing efforts on two specific clubs and collecting multiple sources of data including interviews, documents, emails, and coach reports. Finally, Morris et al. examined the youth-to-senior transition in-situ whilst the process occurred.[88] Their study focussed on a sample of five youth players going through the transition period to first team level. Data were collected through interviews pre and post-transition period before being abductively thematically content analysed. Their data were analysed

against Stambulova's youth-to-senior transition model[89] and Wylleman and Lavallee's developmental perspectives model of transitions faced by athletes.[90]

Relavs et al. investigated the day-to-day working practice at a club level, leading to better understanding of the gaps in our understanding of organisational and operational issues that affect successful player transitions.[91] Their findings indicated that there is some organisational homogenisation, such as the underpinning philosophy of clubs (i.e. to develop players for the first team); the personal development of players alongside football development; and for clubs to be able to make a monetary gain through the development of players, either through not having to purchase players or by selling a player they had developed for a profit. However, there were also a number of operational differences reported, including roles and responsibilities of staff, the youth-to-senior transition; and as unstructured club approach to the development of players. This further manifested through a significant indication that, regardless of club structure, formal communication between youth and senior environments within clubs hindered the progression of players to the first team environment.[92]

Morris et al.[93] developed the ideas and findings purported by Relvas et al.[94] by providing two in-depth case studies and applying Stambulova's youth-to-senior transition model to data.[95] Data were then compared between the two clubs involved in the study to further explore each organisation's transition procedures and processes. The two clubs investigated had significantly different approaches to youth development. Indeed, their individual data highlighted that one club clearly aligned to the elements of Stambulova's model,[96] and one club aligned to some elements, but not to the same extent as the former. Data were compared and contrasted against each other and also against a league average. It was suggested that the organisation who aligned more closely with Stambulova's model were three times more efficient in achieving

successful transition outcomes than the club who aligned to some elements and twice as efficient than the league average.[97] The club that aligned to the model also had substantially lower release rates of players than their counterpart (47% lower) and the league average (29% lower). Finally, and, perhaps, most importantly for clubs concerned with associated costs of developing young players, the associated monies invested into clubs' youth development programmes was reduced when aligned to the Stambulova model.[98] The club which most aligned had a five-year operating cost of £450,000; the club that partially aligned operated on £520,000 over a five-year period; and the league average over five years was £980,000. This suggests that even a modest alignment to operationalise elements of the Stambulova youth-to-senior transition model[99] can have serious financial implications.

Morris et al.[100] further expanded the previous work of Relvas et al.[101] and Morris et al.[102] by exploring the pre- and post-transition period of five junior-elite footballers. Data were collected two weeks prior to transition and two weeks' post transition to capture players' perspectives on the process. The four themes that emerged from the data were: a) motivation for the transition; b) confidence and anxiety; c) stressors, and; d) social support. The authors suggest findings present generalizable considerations that would resonate with a number of players and clubs. For example, players were highly intrinsically motivated to transition to senior football. Such findings are also corroborated in other studies[103] and supported by the theoretical frameworks that were used to underpin analyses.[104] The study also highlights a number of factors that have clear practical application. Stress and anxiety during and following the transition period can be significant with players being affected both internally (e.g. desire to succeed) and externally (e.g. familial pressure). It was also noted that some of the same actors (i.e. family, friends, and colleagues) who caused stress within players'

lives were also responsible for providing support when necessary. The study highlighted that the challenges experienced by players were numerous and complex and that within-career transitions are a highly under-examined area worthy of further investigation.

The findings from Relvas et al.[105] and from Morris et al.[106] suggest that there are significant operational processes and considerations that clubs need to make in order to enhance their youth-to-senior transition success. Stambulova's model provides a framework against which clubs might be able to assess themselves, or be assessed against, whereas Relvas et al. highlight more organisational and structural considerations for clubs to contemplate.[107] Similarly, Morris et al. indicate that there are a number of challenges and experiences faced by players undergoing career transitions and that clubs need to be more consciously aware of, supportive of, and reactive to the needs of players during these periods, particularly the youth-to-senior transition.[108] Indeed, findings from Mills et al. indicated that there is a weak player understanding of the links and realities of youth-to-senior transition.[109] This suggests that, despite Relvas and colleagues' call for better organisational operation and links between senior and youth domains,[110] there has been little progression made in this domain since that time; despite all clubs involved in that study indicating their desire was to develop players for their respective senior squad.

Parental Support

There is longstanding interest of the implications of parental support within sport from performance and participation perspectives.[111] However, examination of the impact of parental involvement in junior-elite football are in their relative infancy. Indeed, only

two studies[112] fulfilled the eligibility criteria for this within the model. The earliest study was a phenomenological investigation of the experiences of parents of "elite specialising stage youth footballers".[113] This study explored a unique concept in the talent development literature: the social and cultural context in which parents operate. It has been recognised elsewhere that parents play a crucial role in their child's development in sport and particularly in football.[114] However, there has been little done to investigate this particular sample within junior-elite football. The second study considered sought to explore parents and children's experiences, interaction, and relationships within the context of junior-elite football academies.[115] Indeed, it has been suggested that previous studies have tended to focus on the behaviours exhibited by parents during children's sport, but there is a need to look beyond the behaviours exhibited by parents and to understand the social and cultural contexts in which these behaviours occur.[116]

Both studies adopted qualitative data collection methods, though Clarke and Harwood[117] were guided by Giorgi's descriptive phenomenological approach,[118] whereas Clarke et al. embraced a dyadic approach,[119] allowing greater understanding of interactions and relationships.[120] Both studies only included parents within their sampling procedures, though the ages of the players' parents represented were different. For example, Clarke and Harwood sampled parents (n = 10; 5 mothers, 5 fathers) of players aged 8-11 years,[121] whereas Clarke et al. sampled parents (n = 8; 4 mothers, 4 fathers) of 12-17-year-old players.[122] Smaller sample sizes have been suggested appropriate for descriptive phenomenological inquiries.[123]

It was proposed that there are three factors that parents of junior-elite footballers in the UK experience.[124] Firstly, parents recognised the socialisation process they underwent while entering and remaining in the junior-elite youth football culture;

secondly, parents recognised themselves as having an enhanced parental identity; and, finally, parents expressed the feeling of increased parental responsibility. These three broad themes were considered expressive of the multiple sub-themes which comprise each one, though the authors note that there was variance between individual participants and that their findings should not be considered generalizable but more reflective of the participants' "nature of existence".[125]

In their existential phenomenological study, Clarke et al. presented findings of four parent-player dyads.[126] Their findings suggested that these dyads were framed around relationships with other family members, an embodied sense of closeness, a temporal significance of transitions in football, and gender relations. Similar to Clarke and Harwood, it was suggested that findings might serve as a useful heuristic framework for guiding further research in this area and context (i.e. junior-elite academy football).[127]

The increased sense of parental responsibility[128] and embodied sense of closeness[129] closely align between both studies. The notion of increased parental responsibility arose form feelings of enhanced parental identity due to their son's identification as a talented young footballer. This was suggested to be a reflection upon their identity as a parent and, their parenting ability. These two interlinked experiences manifest as shared senses of success and failure, particularly around transition periods (i.e. youth-to-senior transition, or transition away from junior-elite football). Whilst previous work on youth-to-senior transition has highlighted difficulties for players at these periods,[130] it is suggested that such transitions also affect the identity of parents.[131]

Whilst increased parental identity was highlighted, it was also noted that parents felt they needed to carefully consider and navigate their position within the academy

environment. Their peer interactions required them to be seen as realistic about the likelihood of their child's success in football,[132] as there is a high attrition rate between those who progress from academy-level.[133] A final issue of identity was raised in relation to gender and the perceived value of mothers in a male-dominated environment, raising issues of gender.[134]

When considering the notion of socialisation for parents in the academy environment, it was suggested that the notion of conforming to the established norms and expectations of the academy and its culture were critical. These expectations were heightened through parents' interaction with coaches and other parents. Parents regularly interacted with other parents during training sessions and games, with these relationships serving several functions, including: new parents to the environment seeking advice; drawing upon support, such as transport to training; and being empathetic of the stresses associated with the environment. Parents demonstrated a pragmatism toward relationships developed, acknowledging that should their son no longer play at the academy, it was unlikely any friendships developed would endure. Parents who approached coaching staff to ask questions or request information were viewed as interfering by other parents. Naturally occurring opportunities for coaches and parents to engage were rare, as coaches highlighted that their focus was the development of players and so tended to focus efforts toward players rather than communicating with their parents. Indeed, once a player was signed and registered with a club, parents had to transition to taking a back seat in their son's football development, though some indicated that coaches were the experts in the academy environment and relinquished any power previously exerted.[135] However, the lack of communication prolonged the development of relationships and trust between coaches and parents.

Both studies provide insight into a relatively under-researched area within junior-elite football. There are insights provided from the perspective of parents, key stakeholders in this domain, that suggest further work is required. For example, the sample of clubs and parents used is relatively small and, as such, findings cannot be considered comprehensive nor generalizable to parents across junior-elite football.

Education

Education was considered through the experiences and descriptions of young male Danish footballers' who were managing contradictory demands of potential future career and current educational requirements.[136] The study included 25 elite youth footballers between 15-19 years old. Analyses were considered using Lewin's psychological field theory, which considers "life space";[137] that is, the space where an individual and their environment exist psychologically, allowing individuals to be seen as a whole.[138] Secondly, data were considered using Schein's theory of organisational culture,[139] which operates three levels: observable artefacts; espoused values; and underlying assumptions.

Results first presented are the artefacts, espoused values, and assumptions in the education system. Data presented suggest that the Danish education system is well-established for supporting young people who may have competing priorities. There is a degree of flexibility within the system that allows the final phase of secondary education to be completed over a more protracted period – three years rather than the traditional two. This, it is claimed, allowed participants the opportunity to continue their football development with a lesser degree of pressure from also completing secondary education qualifications. The Danish school and sport systems also seem to be fairly

543 complimentary in their approach, with some schools supported by Team Denmark sport
544 coordinators. It was highlighted that educational values were often reinforced by
545 players' parents. Indeed, parents were highlighted as championing education,
546 illustrating the perceived importance of education within Danish society.

547 Time pressure was cited as the most serious threat to successfully combining
548 education with football development. Participants highlighted the need for
549 demonstrating a high degree of self-discipline and requiring psychological support and
550 resources to adapt to the demands of both. Within the study, school was often seen as a
551 necessary evil, secondary to football development activities, though parents often
552 pressured participants to consider school more reverently. However, participants were
553 acutely aware that completion of secondary education may be beneficial, though many
554 indicated that grades were expected to be considerably lower because of involvement
555 within football. Those participants who opted to extend their final period in secondary
556 education experienced a lesser degree of pressure through the time support offered. As
557 an extreme example, however, there were also instances where young players dropped-
558 out of school to focus on their football development: this presented a different scenario,
559 whereby the player found part time paid work that afforded him the opportunity to focus
560 more readily on football whilst also affording greater financial resource to support
561 himself.

562 The espoused values were found to illicit significant personal concerns. Similar
563 to the time-related factors discussed above, players who were not within the vicinity of
564 their club were often left to decide whether to move into accommodation closer to the
565 training facilities, or continue with time-consuming travel. The data highlight moving
566 away from for players as a mixed economy. Some players successfully moved and
567 transitioned to life away from home, where others underwent significant issues,

including mental health problems. The authors suggest that the movement of players, particularly at testing ages (mid-late teens), can be problematic as social groups become disrupted, personal living space became compromised, and aspects of his life came under scrutiny that he was unused to. The authors summarise by suggesting the ideal student, as prescribed by various stakeholders is a privileged position, that is not held by the majority. This has implications for educational, social, and psychological factors within the lives of who are not so fortunate.

The study also highlighted the unwritten rules of football – those espoused values that are expected and assumed, but would never be laid bare for all to see. For example, there were references to coaches and clubs explicitly instructing players that they must make a decision between school and football, and that in order to be a professional footballer they must devote themselves 100%. This, it was claimed, was the only way in which they would be able to be considered and accepted as a real talent.[140] Players' lives, the authors contend, are in an unstable state and the abandonment of education in favour of football becomes a realistic, albeit radical, reality. The culture of football prevails in these attitudes, whereby young players exude the underlying assumptions of professional football – achievement of success on the pitch and, therefore, the generation of personal income.

It was suggested that the value of a potential career in professional football was more appealing than a good set of educational qualifications. Similarly, the dichotomous approach of government to try and successfully affect both elite sport participation and education manifests a situation where one or the other tends to be selected. The study highlights the longstanding problems faced by junior elite footballers in Denmark. It is plausible to extrapolate these findings to other European countries due to the similarities in education and sport systems. Therefore, this study

highlights a significant issue for those involved in the education and development of junior elite footballers.

Conclusion

This scoping review of the potential sociological predictors of talent in football has considered a range of studies that have examined different sociological factors within football. Results suggest that it would be premature to offer any concrete suggestions in relation to the sociological determinants of talent in football. There are notable gaps in the literature and, therefore, prime areas for future inquiry, particularly related to examination of cultural background and socio-economic background.

One of the earliest, and most striking features of the studies considered in this review was the variety and breadth of terminology used to describe potentially similar groups or factors. Whilst this has been acknowledged across the TID literature[141] this review highlights its prevalence in football-related inquiries. Consequently, we strongly advocate for a more unified and consistent approach to the language offered to discuss the concepts under scrutiny.

Whilst there appears to have been a small shift toward better understanding the sociological factors that affect junior-elite footballers, this review has highlighted that there is still a lack of examination of the contribution sociological factors can have upon the potential prediction of talent in junior-elite football. However, some sociological factors have received greater attention, such as HiP. There has been a focus on better understanding the volume of practice undertaken by junior-elite footballers throughout their development, though these studies have tended to rely on similar methodological

approaches. We suggest the need for better understanding of the impact of HiP through use of control groups within a longitudinal framework.

There are also certain sociological predictors that have not been examined, or at least were not found for inclusion in this review, such as socio-economic background. Whilst this may be a factor within other studies, we argue that in order to fully understand the complexities of each of the proposed predictors, more rigorous investigations of specific, individual factors are necessary. For example, there is a significant body of literature that has explored the impact of socio-economic status upon participation in sport and physical activity,[142] yet we were unable to find a singular examination of the effects of socio-economic status upon the development of junior-elite footballers.

There are also proposed potential predictors of talent where the evidence base is limited and further investigation is warranted. In the case of education, better understanding of the impact being a junior elite footballer within an, often legally required, education system is required. For example, in the UK football academies have the option to offer a full-time education model and, in doing so, affect the school day timetable. This can, potentially, have further sociological implications for relationships with friends, peers, parents, teachers, and coaches, amongst others.

Better understanding the potential sociological predictors of talent in junior-elite football seems to be pertinent for academic inquiry, but also within applied practice. Indeed, we would suggest that every academy should ensure that they do not neglect to account for the important role sociological factors can play in the identification and development of junior-elite footballers.

Notes

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1088 **Figure 1**

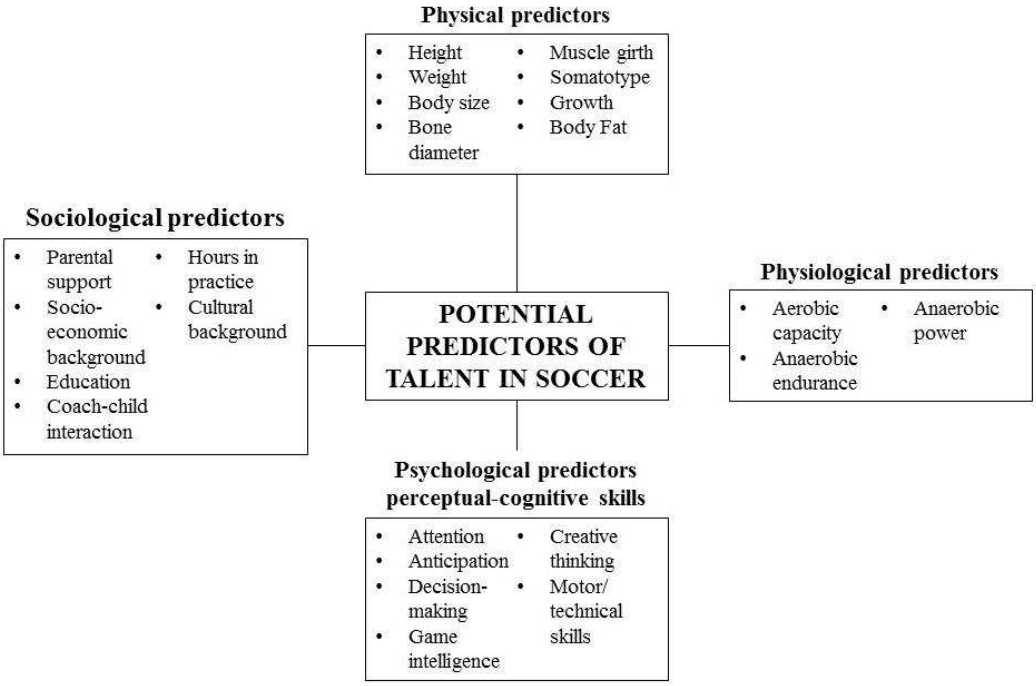

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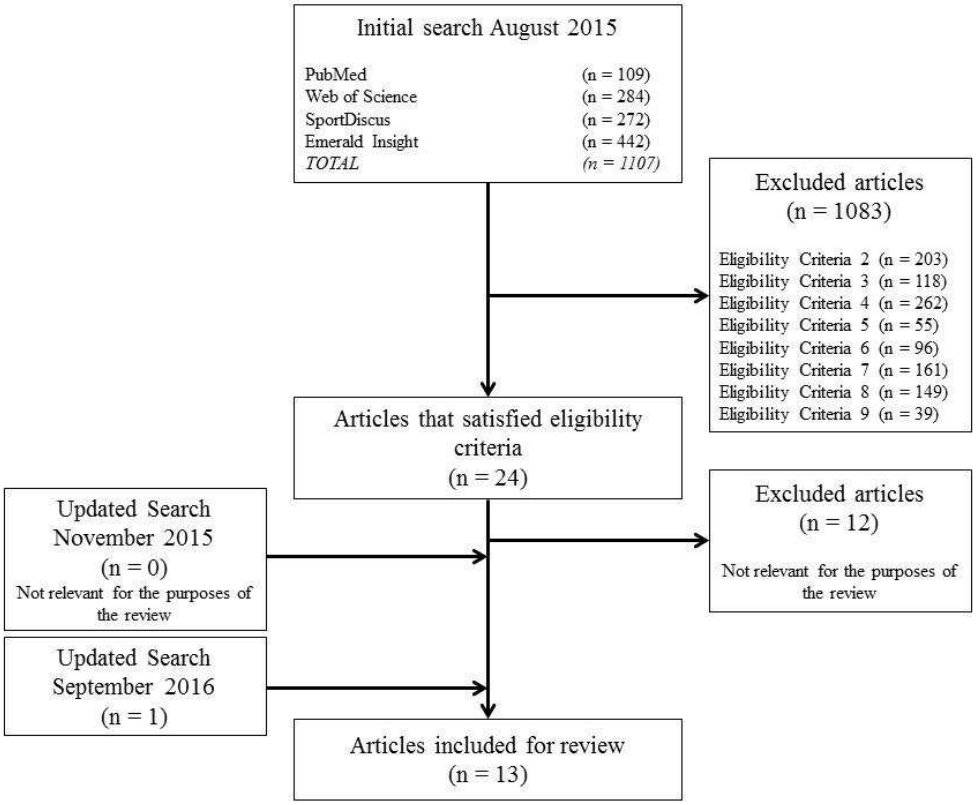
FIGURE 2


Initial search August 2015
PubMed (n = 109)
Web of Science (n = 284)
SportDiscus (n = 272)
Emerald Insight (n = 442)
TOTAL (n = 1107)
Excluded articles (n = 1083)
Eligibility Criteria 2 (n = 203)
Eligibility Criteria 3 (n = 118)
Eligibility Criteria 4 (n = 262)
Eligibility Criteria 5 (n = 55)
Eligibility Criteria 6 (n = 96)
Eligibility Criteria 7 (n = 161)
Eligibility Criteria 8 (n = 149)
Eligibility Criteria 9 (n = 39)
Articles that satisfied eligibility criteria (n = 24)
Updated Search November 2015 (n = 0)
Not relevant for the purposes of the review
Excluded articles (n = 12)
Not relevant for the purposes of the review
Updated Search September 2016 (n = 1)
Articles included for review (n = 13)

1094 **Table 1:**

Author(s)	Study Aim	Study Sample	Method	Important Results/Findings
HOURS IN PRACTICE (HiP)				
Ford et al.[29]	To examine developmental activities and pathways of elite football players.	328 elite soccer players aligned to the under-16 age group from Brazil, England, France, Ghana, Mexico, Portugal and Sweden.	Retrospective recall using the Participation History Questionnaire. Data compared to the early diversification, early specialisation, and early engagement pathways.	• Players began involvement in football at ~5 years of age; supervised training at ~7 years old; academy training at ~ 12 years of age. • Participation in academy-based training is younger in England than all other countries. • Developmental pathway for players across multiple countries was relatively homogenous. • Only players in England engaged in a greater variety of other sports during childhood than other countries (mean = 4). • Between country differences are likely to reflect differences in youth development systems.
Ford, Ward, Hodges, & Williams[30]	To examine the domain-specific activities in which two groups of elite youth soccer players participated between six and 12 years of age to examine early participation differences between those who	Secondary data from a previous study[31] were re-examined. In these data, three groups were determined: (1) The still-elite group (n = 11); (2) The ex-elite group (n = 11); and (3) a recreational level	Players from a previous study data subset were tracked and their current playing status determined.	• Professional players accumulated more hours per year in football play activities, but not in football practice, competition or other sports, between six and 12 years of age. • The two elite groups averaged more hours per year in soccer practice compared with recreational-level players, but not soccer play, competition or other sports. • Practice and play in football between six and 12 years of age contributes to the development of expert performance in English football.

	progressed to professional status at 16 years of age and those who did not.	control group (n = 11).		
Haugaasen, Toering & Jordet[32]	To identify the development of engagement in football-specific activities of elite youth association football players who have made the transition to senior professional status or not.	Data were collected from all elite youth players (N = 745) within the age-range of 14-21 years from all Norwegian Premier League clubs.	A retrospective participation history questionnaire was adapted. Data were collected at one time point.	• Although the professional players reported more overall practice hours accumulated than non-professionals from ages 6 to 19 years, none of these differences were significant. • Professional players reported to have accumulated significantly more hours in play and coach-led practice at the youngest age categories. • No significant differences were identified at older age categories or for other types of football-specific practice at any age.
Haugaasen, Toering, & Jordet[33]	This study aimed to identify the characteristics and contribution of diverse participation towards elite youth and senior professional status in football.	Sample of 491 players aged 14-21 years of age; including 66 professional players and 425 non-professional players from Norway.	Data were collected using the Participation History Questionnaire. Players reported the amount of time spent engaged in sports other than football. Activity diaries collated for one week during the season.	• 90% of players reported engaging in football-related activity by 6 years of age. • No significant difference between professional and non-professional players in the age at which they first engaged in football-related activity. • Professional players attained an average of 20% more hours of football-specific practice between 6-12 years of age. • Professional players accumulated more hours of football practice than non-professionals at all age categories up to 19 years of age.

				• Sports similar to football were reported to be significantly more relevant for developing football skills than other sports. • Spending time in non-football activities did not contribute to differences in performance attainment in football, but potential advantages of such activities may be related to their characteristics.
Horning, Aust, & Gullich[34]	This study examined the developmental sporting activities of elite and amateur soccer players.	52 German Bundesliga professional footballers (including 18 senior national team members) and 50 fourth to sixth league amateur players.	Participants retrospectively recalled volumes of organised football practice/training, including its "microstructure" (proportions of physical conditioning, skill exercises and playing forms), non-organised leisure football play and engagement in other sports through their career, respectively.	• Bundesliga professionals performed moderate amounts of organised football practice/training throughout their career. • They accumulated 4264 (mean) hours over ~16 years before debuting in 1st Bundesliga; senior National Team debut was preceded by 4532 hours (mean) over ~17 years. • Within the microstructure of organised practice/training, the proportion of playing forms developed from ~52% (childhood) to ~45% (adolescence) and ~40% (adulthood) and physical conditioning from ~13% to ~14% and ~23%. • Players engaged in extensive non-organised leisure football play. • Subsuming organised and non-organised football, ~86% (childhood), ~73% (adolescence) and ~43% (adulthood) of all activity was game play (exclusive match play). • National Team differed from amateurs in more non-organised leisure football in childhood, more engagement in other sports in adolescence, later

				specialisation, and in more organised football only at age 22+ years.
Zibung & Conzelmann[35]	To investigate if it is more effective to promote specialisation in a specific sport at the beginning of a career or whether to encourage a broad range of sports when promoting competitive sports talents in order for them to achieve a high level of performance in adulthood.	One hundred fifty-nine former Swiss football talents.	Retrospective interviews were conducted with participants. Data were analysed using the linking of clusters after removal of a residue (LICUR) method.	• Specialised club players engage in above average in-club practice and have more than average engagement levels in football-related play away from their club. • Below average participation in other sports. • Results do not support early specialisation or early diversification. • Comprehensive training and practice inside and outside the club form the basis for subsequent football expertise.
COACH-CHILD INTERACTION				
Ivarsson, Stenling, Fallby, Johnson, Borg, & Johansson[36]	To examine the predictive ability of perceived talent development environment (TDE) on the well-being of youth elite football players.	195 Swedish youth elite football players between 13 and 16 years of age enrolled at Swedish football academies.	Questionnaires regarding players' their TDE, perceived stress, and well-being at the start of the 2012 season. On two more occasions, six and 12 months later,	• Three classes of players with different perceptions of their TDE (one high quality, one moderate quality, and one poor quality class) were identified. • The class of players perceiving the lowest TDE quality, experienced higher initial level of stress and lower initial level of well-being at the start of the season compared to the other two classes. • There were no significant differences for stress nor well-being between classes (the initial difference

			the players completed the stress and well-being questionnaires.	between the three groups, in well-being, remained stable over time).
Mills, Butt, Maynard & Harwood[37]	To examine elite youth football academy players' perceptions of the quality of their development environment, at a crucial stage in their progression to the professional level.	50 elite players aged 16-18 (m 17.1 +/- s = 0.6 years) recruited from the academies of Premier League and Championship clubs in England.	The Talent Development Environment Questionnaire (TDEQ) was used to survey the elite players.	• Players perceive elite development environments to be of a good quality. • Academies were considered strong in areas of coaching, organisation, and sport-related support. • Areas of deficiency were: athlete understanding, youth-senior transition, and key stakeholder relationships. • Findings highlight the need for academies to pay close attention to the psychosocial environment they create for developing players.
Mills, Butt, Maynard & Harwood[38]	This study examined the factors perceived by successful coaches to underpin optimal development environments within elite English football academies.	10 expert academy football coaches.	A semi-structured interview guide, related to the environments coaches create for players at a key stage in their development.	• There are a wide range of interacting factors that underpin an optimal development environment. • Key components included: organisational core, adaptability, player welfare, key stakeholder relationships, involvement, and achievement oriented.
Morris, Tod & Oliver[39]	To critique whether the demands, resources, and barriers associated with the youth-to-	Following initial screening, two professional football clubs were purposively	Data collected included meeting minutes, websites, interviews (n = 17) with players,	• A proactive transition programme had better outcomes (e.g. player financial value, retention rates) and meant clubs spent less on player assistance compared to the club with no transition program.

	senior sport transition in Stambulova's model help explain transition outcomes.[40]	selected for detailed case study analysis.	coaches, support staff, and parents, and e-mail communications.	• When parents had knowledge of the transition process they felt more comfortable and able to support their son make the move to senior sport. • Coaches highlighted their ability to support players during the transition process was limited. • Providing more sport science support staff may provide better transition support and efficiency.
PARENTAL SUPPORT				
Clarke & Harwood[41]	To explore the experiences of parents of elite specialising stage youth footballers.	Five mothers and five fathers of youth players registered to English football academies.	A descriptive phenomenological approach guided the study design Data from interviews with five mothers and five fathers of youth players registered to English football academies were analysed using descriptive phenomenological analysis	• Three essences characterised the phenomenon of being a parent of a junior-elite youth footballer: parent socialisation into elite youth football culture; enhanced parental identity; and increased parental responsibility. • Parents' socialisation into the academy culture was facilitated by their interactions with coaches and parent peers. • Enhanced status and heightened responsibility to aid their son’s development was felt by parents whose son was identified as being talented • Parents, whilst supportive, were also instinctively inclined to protect their child, which manifest as uncertainty in relation to the commitment required to play at an academy level.

Clarke, Harwood & Cushion[42]	To explore parent's and children's experience of their interaction and relationship, in the context of elite youth football	Eight parent-player dyads, recruited from English professional football club youth academies.	Phenomenological interviews with all participants were performed. A two-stage analysis process was performed to explore individual parent and player experiences and examine how accounts related dyadically.	• Parent-player relationships are built around relations with other family members, an embodied sense of closeness, the time-bound nature of football transitions, and gender relations. • Involvement in academy-level football brought about closeness between players and parents. • Gender issues were present within the male-dominated academy environment.
EDUCATION				
Christensen & Sorensen[43]	To explore how young Danish male football talents experience and describe these different forces in their life space.	25 footballers between 15-19 years old.	Data were collected using a narrative and qualitative approach, which included four focus group interviews with 25 footballers aged 15-19, followed by individual qualitative interviews with eight of the footballers.	• The espoused value of a good set of academic qualifications does not entirely measure up to the allure of being a professional footballer. • The societal importance of completing compulsory education is manifest and associated with significant personal concerns, lower examinations results, stress, drop-out and mental breakdown.

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