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Thriving in Elite Sport: A Systematic Review

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1 **Thriving in Elite Sport: A Systematic Review**

2 Defining the goals and reasons that people engage in sporting practices requires the
3 acknowledgement that the role of sport in a person's life changes; from 'fun,' 'learning of
4 new skills' and 'friendships' (Bailey et al., 2013, p. 60-62) to a pursuit of 'human excellence'
5 when describing elite sport from Carlson et al., (2016, p. 75). However, even in this latter
6 definition of sport, other factors are also detailed including a 'commitment to fair play and
7 promotion of peace.' This details that even at the highest performance level, the role of sport
8 is not limited to finding the optimal level of performance, but that other factors are also key.
9 The definition of elite sport is not one that is clear, as shown in research by McAuley et al.,
10 (2022) that there are different factors that affect this definition between sports, age groups
11 and environments.

12 The emergence of 'Positive Psychology' defined as 'the study of strength and virtue
13 [...] not just fixing what is broken; it is nurturing what is best' (Seligman &
14 Csikszentmihalyi, 2014, p. 284) has inspired interventions that have been implemented in the
15 workplace (Donaldson et al., 2019), and to treat individuals expressing symptoms of
16 depression (Sin et al., 2011) in order to facilitate a state of thriving for individuals which not
17 only assists with goal achievement, but a high level of fulfilment and sustainability whilst in
18 the process of doing so. Applications of this philosophy to sporting contexts include Dixon et
19 al., (2015), where two core features of positive psychology (primacy of the positive and the
20 focus on the human strengths), aided the sporting performance of an athletic group that was
21 underachieving in their field.

22 The requirement for a more holistic approach to athlete development within sport is
23 demonstrated in reviews such as that by Tanni Grey-Thompson (Department for Digital,
24 Culture, Media & Sport, 2017) who recommends that more is required in areas including
25 education, safeguarding, representation and mental wellbeing. The relentless endeavours to

1 achieve only high-performance results can be seen to have damaging consequences for
2 individual athletes; and can lead to athletes adopting traditionally maladaptive patterns of
3 behaviour (Zhang et al., 2020).

4 The term thriving is commonly used by a range of sports professionals (e.g., coaches
5 and managers, sport/performance psychologists, athletes and journalists) and academic
6 scholars (e.g., English, 2021 & Sutherland et al., 2021; Spreitzer et al., 2005; Carver, 2010),
7 but one that lacks a true definition. Purcell et al., (2022) has identified the athlete factors that
8 can contribute to, or detract from the athlete's mental health and wellbeing as coping skills
9 and attitudes, microsystem factors which include coaches, friends and other support staff.
10 Purcell et al., (2022) also describes the exosystem factors that can contribute to, or detract
11 from the athlete's mental health and wellbeing as the demands of the individual sport, and
12 macrosystem factors of the environment that an athlete exists within. Further to this, it has
13 been shown that participants can present with typically high scores for mental wellbeing,
14 whilst suffering from disorders such as substance abuse, but that the ability to function and
15 present high scores for wellbeing in the absence of a disorder results in improved health and
16 success in professional endeavours (McGaffin at al., 2015) In addition, it is shown by Uphill
17 et al., (2016) and Lundqvist & Andersson., (2021) that an athlete can engage with their sport
18 whilst suffering from a mental disorder, which has directed research into hypotheses
19 referencing whether athletes could achieve greater sporting success in the absence of mental
20 disorders (Küttel & Larsen., 2020).

21 The quality of an athlete's health was referred to by Brown et al., 2018; Brown et al.,
22 2021 and Rouquette et al., 2021. For example, Brown et al., (2021) stated that 'To determine
23 whether sport performers thrived in their encounters, assessments of their subjective
24 performance and well-being were provided' (p. 3). Reference to an athlete's Life Satisfaction
25 has been made within the same three studies (Brown et al., 2018; Brown et al., 2021 and

1 Rouquette et al., 2021). For example, Brown et al., (2018) states: ‘The experience of thriving
2 was perceived to have a positive effect on elite sport performers in relation to both personal
3 development benefits and performance benefits’ (p. 139). Further to this, studies by that in
4 Brown et al., 2018 and Rouquette et al., 2021) have included reference to positive affect, and
5 vitality, these factors are characterised by an extract from Brown et al., (2018): ‘an athlete
6 who was thriving [was described as] being “really on board and engaged with the work that
7 needs to be done’ (p. 139). Whilst another extract from Brown et al., (2018) indicates the
8 vitality aspect to thriving by stating ‘elite sport performers who were thriving possessed an
9 active awareness of areas for improvement’ (p. 139). A further indicator of a thriving athlete
10 is the sustainability of the state, as referred to by Brown et al., (2018) and De Martin-Silva et
11 al., (2013) as demonstrated by De Martin-Silva et al., (2013): ‘attitudes and beliefs were
12 crucial for the creation and sustainment of personal, team and organizational performance (p.
13 601).’

14 For the purposes of this systematic review, thriving is defined as “the sustained
15 existence of positive affect, health quality, vitality and life satisfaction, typically manifesting
16 in upward progression of sporting and non-sporting life.” These are factors that are described
17 to be indicators of thriving in elite sport within research including Brown et al., (2018),
18 Brown et al., (2021); De Martin-Silva et al., (2013) and Rouquette et al., (2021). The aim of
19 the current review is to examine existing literature on the topic of thriving in elite sport and
20 explore the contribution of certain factors towards facilitating, or inhibiting an athlete’s
21 experience of thriving.

22 Method

23 The systematic review was informed by Preferred Reporting Items for Systematic
24 Reviews and Meta-Analyses (PRISMA) guidelines. The PRISMA guidelines are considered
25 the gold-standard for systematic reviews as they provide an evidence-based, minimum

1 standards for methodology recommendations, designed to facilitate transparent and complete
2 reporting of systematic reviews (Sarkis-Onofre, Catalá-López, Aromataris & Lockwood.,
3 2021). A systematic review was deemed the most appropriate approach for the current study,
4 compared to narrative reviews, which are less reproduceable due to idiosyncratic judgement
5 from the researcher, and meta-analyses due to the heterogenous nature of the data; this review
6 was designed to include both quantitative data (e.g., Filho & Rettig, (2018)) and qualitative
7 data (e.g., Tibbert, Andersen & Morris, (2014)).

8 **Literature Search**

9 Inclusion and exclusion criteria were agreed with the supervisory team a priori and
10 were intentionally broad to ensure a full capture of literature. The search protocol outlined a
11 process which included a search of title, abstracts, and keywords using the following terms:
12 ("Sport*") AND ("Thriv*" OR "Flourish*" OR "Nourish*") OR ("Performance" AND
13 "Sustain*") OR ("Performance" AND "Wellbeing") OR (("Sustain" OR "Maintain" OR
14 "risk") AND "Flow"). Seven databases were searched: SPORTDiscus, PsycINFO,
15 PsycARTICLES, ScienceDirect, Scopus, Web of Knowledge, and Medline. Once the
16 research was analysed for quality and selected, a second search of the reference lists of
17 included literature was completed to ensure inclusion of all relevant literature.

18 **Inclusion Criteria**

19 The inclusion criteria agreed by the supervisory team included three factors that any
20 research within the search results must abide by in order for inclusion in the systematic
21 review. The first of these is that the study must be accessible in the English language in order
22 to be legible by the researcher. An example of a study that was excluded at this stage was the
23 paper by Montalbetti & Chamarro, (2010). The second inclusion criteria was that the study
24 must yield original and empirical data. This was a part of the criterion to reduce the inhibitive
25 of including repetitive results within the systematic review from primary and secondary

1 sources. An example of a paper that was excluded due to this criterion was Ryba, (2017). The
2 third inclusion criterion was that the study must be related to elite sport (the four levels of
3 elite sport used for the purposes of this study are semi-elite, competitive elite, successful elite
4 and world-class elite, as defined by Swann et al., 2015). An example of a paper excluded due
5 to this criterion was Williamon & Antonini Philippe (2020).

6 Overall, the literature search returned a total of 705 results. The search results were
7 then filtered to remove those that were inaccessible. Following the removal of duplicates, the
8 titles and of the search results were reviewed and irrelevant studies removed. The same
9 process was then completed for the abstract, and then the full paper with irrelevant or
10 unsuitable papers removed at each step. For example, a study excluded at title screening was
11 that by van Rens & Heritage, (2021). An example of a study excluded during abstract
12 screening is Cruickshank, Collins & Minten, (2015), and an example of a study excluded
13 after the full was examined is Sturm, & Rinehart, (2018). Duplicate studies were then
14 excluded before commencing analysis. This is illustrated in Figure 1.

15 **Methodological Quality Assessment**

16 Systematic review guidelines (Harris et al., 2013) dictate that the studies undergo a
17 quality assessment to enhance methodological rigour. Due to the mixed methodology of the
18 final studies included within the review, quality assessment was conducted using the Mixed
19 Methods Analysis Tool (MMAT) (Hong et al., 2018). This method has been used in other
20 systematic reviews published in the International Journal of Sport and Exercise Psychology
21 such as Molan, Kelly, Arnold, & Matthews, (2019).

22 Methodological quality of the studies included within the review was evaluated using
23 the MMAT tool (Hong et al., 2018). This tool is regarded as the most appropriate method for
24 assessing the quality of studies with varying methods for the purposes of a systematic review
25 (Hong et al., 2018), and has been used recently in systematic reviews concerned with sport

1 and exercise psychology such as that by Cook et al., (2020). The tool consists of two
2 screening questions, and 25 subsequent assessment questions across five categories (1:
3 qualitative studies, 2: quantitative randomized controlled trials, 3: quantitative non-
4 randomized studies, 4: quantitative descriptive studies, and 5: mixed methods studies) that are
5 selected as appropriate dependent on the method used in each study. The tool requires a ‘yes,’
6 ‘no,’ or ‘not sure’ answer to each question whilst also allowing a section for comments. A
7 ‘yes’ answer was allocated 1 point and a ‘not sure’ or ‘no’ answer was allocated 0 points. The
8 points allocated to the assessment questions in the appropriate categories for each study were
9 converted into a percentage score to yield a quality score for the study. An MMAT table is
10 included in the Table 2 (see appendices). As the MMAT is designed for assessing the quality
11 of various methodologies of research, it can be suggested to somewhat lack depth of analysis.
12 It therefore is suggested that rather than providing an overall quality score for each study
13 individually, that it instead provides a measure of quality of the studies included within the
14 review, relative to one another. Table 2 shows the results of the MMAT analysis applied to
15 each study included within the review.

16 Throughout the stages of literature search, data extraction, analysis, theme generation
17 and model creation; the researcher and supervisory team worked collaboratively in order to
18 make ensure consistency and reliability of data processing. The second researcher offered
19 guidance on the process of completing the systematic review and challenged the first
20 researchers on at multiple points in order to maintain reliability through the form of
21 supervisory online meetings. Study characteristics, including purpose, participants, sport(s),
22 design, data collection, and the main findings were extracted and presented in Table 1. The
23 findings of each study were extracted verbatim from the text and transferred into the data
24 extraction table.

25 **Data Analysis**

1 The approach taken for the systematic review is defined as a basic convergent
2 qualitative meta-integration (Frantzen & Fetters 2015) and involves the transformation of
3 quantitative data to qualitative in preparation for analysis. A convergent thematic analysis
4 was then used following the steps of Familiarisation, Initial Coding, Thematic Search, Theme
5 Review, Theme Definition and Write-Up as detailed by Maguire, & Delahunt, (2017) for the
6 extracted data and organised into a 'mindmap' with reference to the frequency of each theme.
7 The themes were then organised into a triangular model in order to present the data in a form
8 that is simple to interpret.

1 **Results**

2 **Search Results**

3 Through searching seven databases, a total of 705 studies were found to be accessible.
4 These studies were screened based on their title and 647 were excluded, leaving 58 remaining
5 studies. The remaining studies were then screened based on their abstracts. Of the 58 studies,
6 17 were excluded leaving 41 to be screened based on the full paper. At this stage, 11 studies
7 were excluded, seven due to lack of relevance, and four due to lack of focus on elite sport.
8 The remaining 30 studies were then screened for duplicates, at which point six results were
9 excluded leaving a total of 24 studies to be included in the review. These studies were
10 numbered one to 24. The 24 studies were subjected to quality appraisal using the MMAT
11 (Hong et al., 2018). The 24 studies included within the review scored between 71 and 100%
12 (M=99%). Just one of the 15 Qualitative studies did not record a 100% quality score, all of
13 the 9 quantitative descriptive studies recorded a 100% quality score. This is shown in Table 3
14 (see appendices). General

15 **Demographic Characteristics**

16 The studies included within the review involved 2082 participants. These participants
17 included athletes, coaches and others within the organisational structure of the sporting
18 environment. The sample sizes of the studies ranged from 1 to 612 (m=99.14 SD: 147.19). Of
19 the 24 studies, 14 provided details on the mean age of the participants. Of this information,
20 the average age of participants was 28.6. 16 of the studies included mixed gender
21 participants. 13 of the studies included UK based researchers; the pool of studies as a whole
22 included researchers from the USA, Australia, Brazil, Canada, Belgium, China, Denmark,
23 Sweden, Portugal and Ireland. 8 of the studies included in the review were focussed around
24 team sports only, 1 focussed on individual sports only, 15 of the studies were focussed

1 around both team and individual sports. A summary of each study is shown in Table 3 (see
2 appendices)

3 The convergent thematic analysis identified a total of 37 themes within the literature
4 included in the systematic review. These themes were divided into four categories;
5 definitions, environmental factors, personal qualities and psychological skills. Within the
6 tiers of environmental factors, personal qualities and psychological skills, the themes were
7 characterised further into facilitative factors as per the definitions from VandenBos, (2015):
8 “The strengthening or increased occurrence of a response resulting from environmental
9 support for the response” (p. 406), and inhibitive factors according to the definition from
10 VandenBos, (2015): “The process of restraining one’s impulses or behavior, either
11 consciously or unconsciously, due to factors such as lack of confidence, fear of
12 consequences, or moral qualms” (p. 540).

13 **Thriving in Elite Sport: A Systematic Review**

14 **Environmental Factors**

15 Environmental factors that influenced thriving were present in 246 extracts, and
16 across 23 studies that produced 19 themes.

17 *Environmental Facilitative Factors*

18 Nineteen studies produced 204 extracts related to facilitative factors of thriving within
19 the tier of the environment; these were organised into 15 themes. The themes that were
20 identified as facilitative factors within the environment were: holistic focus, structured long-
21 term vision, adherence to culture, learning opportunities, innovation, challenge, team support,
22 coaching support, other staff support, family/friends support, support of equipment/facilities,
23 clarity of roles, empowerment, positive feedback and team bonds.

24 Extracts that made reference to holistic focus were present within 39 extracts across
25 13 studies. (Brown & Arnold, 2019; Brown et al., 2021; Carless & Douglas, 2012; Carless &

1 Douglas, 2013; Fletcher & Streeter, 2016; Haddad et al., 2021; Henriksen et al., 2010;
2 Kuettel et al., 2021; Lane, 2013; Molan et al., 2021; Sandardos & Chambers, 2019; Tibbert et
3 al., 2015; Vallerand et al., 2008). This theme is characterised in the following extracts from
4 Fletcher & Streeter, (2016): ‘Although achievement was central to the team’s culture, the
5 team members’ well-being was also highly important’, and from Sandardos & Chambers,
6 (2019): ‘One mentor stated “It’s not about basketball; it’s about you as a person”’ (p. 148).

7 Nine references to a structured long-term vision across five studies were present in the
8 literature. (Brown & Arnold, 2019; Carless & Douglas, 2012; Fletcher & Streeter, 2016;
9 Molan et al., 2021; Sandardos & Chambers, 2019). The theme is illustrated by the extract
10 from Molan et al., (2021): ‘participants described how a long-term vision and planning across
11 multiple Olympic cycles was crucial in guiding a programme and achieving sustained
12 systematic success’ (p. 9).

13 Behaviours from individuals that showed adherence to the culture was identified as a
14 theme present within 17 extracts, and five studies. (Brown & Arnold, 2019; Haddad et al.,
15 2021; Henriksen et al., 2010; Fletcher & Streeter, 2016; Molan et al., 2021). The theme is
16 characterised in one extract from Fletcher & Streeter, (2016): ‘any swimmers with the
17 potential to disrupt the team’s environment were excluded’ (p. 134). This is supported by an
18 extract from Haddad et al., (2021): ‘by setting and maintaining behavioural standards, and
19 holding team-mates accountable, most coaches believed ALGs [Athlete Leadership Groups]
20 played a key role in creating and maintaining a high performance culture’ (p. 4).

21 The provision of learning opportunities was a highly prevalent theme within the
22 studies, with 16 extracts identified within 10 studies. (Arnold et al., 2018; Blijlevens et al.,
23 2018; Brown & Arnold, 2019; Carless & Douglas, 2013; Haddad et al., 2021; Henriksen et
24 al., 2010; Kuettel et al., 2021; Molan et al., 2021; Sandardos & Chambers, 2019; Tibbert et
25 al., 2015). The theme was exemplified within the extract from Brown & Arnold, (2019): ‘I

1 feel like we should have a more formal process to identify key development areas for every
2 single player in this organization' (p. 76).

3 The innovative nature of the culture as a component of the environment was identified
4 to be a facilitative factor of thriving present within three studies and three extracts. (Carless &
5 Douglas, 2012; Fletcher & Streeter, 2016; Molan et al., 2021) The theme is characterised by
6 the extract from Molan et al., (2021): 'participants also noted the importance of being able to
7 assess if a change to the prevailing culture was needed' (p. 10).

8 The culture of ensuring a level of challenge within the environment was identified
9 within eight extracts throughout five studies. (Blijlevens et al., 2018; Carless & Douglas,
10 2012; Henriksen et al., 2010; Fletcher & Streeter, 2016; Molan et al., 2021). An example of
11 such an extract that is indicative of the theme is present in Fletcher & Streeter, (2016): 'These
12 expectations [...] will really test them. We have found that challenging them [...] really helps
13 them to progress' (p. 131).

14 Team support was a theme that was identified within 12 extracts, and seven studies.
15 (Arnold et al., 2018; Blijlevens et al., 2018; Carless & Douglas, 2012; Brown et al., 2018;
16 Fletcher & Streeter, 2016; Henriksen et al., 2010; Sandardos & Chambers, 2019). The theme
17 is characterised by a quote from Henriksen et al., (2010): 'The relationship between prospect
18 and elite athletes is central to the [...] development of the prospects' (p. 216).

19 Support from coaches was a theme that contributed as a facilitative factor of thriving,
20 the theme was present within 14 extracts spanning 10 studies. (Arnold et al., 2018; Blijlevens
21 et al., 2018; Brown & Arnold, 2019; Brown et al., 2018; Carless & Douglas, 2012; Fletcher
22 & Streeter, 2016; Henriksen et al., 2010; Molan et al., 2021; Sandardos & Chambers, 2019;
23 Tibbert et al., 2015). The theme is exemplified using an extract from Molan et al., (2021)
24 '[we needed to first ask] what are the [athlete] needs and from there we started actually to
25 employ people'" (p. 10).

1 Support from other members of the staff in the athletic environment team was
2 separated from the theme of coaching support to emphasise that the influence of the multi-
3 disciplinary team(s) that often surround an athlete can become a facilitative factor of thriving.
4 This theme was present across seven extracts and five studies. (Brown & Arnold, 2019;
5 Brown et al., 2018; Carless & Douglas, 2012; Molan et al., 2021; Sandardos & Chambers,
6 2019). This theme is exemplified by an extract from Molan et al., (2021): ‘between me [a
7 coach] and my performance scientist [...] he’s had input into some of our planning [...] and
8 he came up with a different way of training’ (p. 10).

9 A fourth source of support originating from family or friends was identified within
10 seven extracts and seven studies. (Blijlevens et al., 2018; Brown et al., 2018; Carless &
11 Douglas, 2012; Carless & Douglas, 2013; Henriksen et al., 2010; Kuettel et al., 2021;
12 Rouquette et al., 2021). The theme is evidenced in the results from: Rouquette et al., (2021):
13 ‘The results of the first mediation showed that: (a) Athletes’ PPR ($\beta = .39$) and observed
14 parental responsive support ($\beta = 0.20$) were positively related with athletes’ self-efficacy (r^2
15 = 0.55), and (b) athletes’ self-efficacy was in turn positively related with athletes’ self-esteem
16 ($\beta = 0.53$)’ (p. 6).

17 A source of support from the equipment and facilities was identified within seven
18 extracts and six studies. (Brown et al., 2018; Carless & Douglas, 2013; Filho & Rettig, 2018;
19 Fletcher & Streeter, 2016; Henriksen et al., 2010; Molan et al., 2021). An indicator of this
20 theme is shown by Filho & Rettig, (2018) when investigating the factors contributing to
21 success in the UEFA Women’s Champions League: ‘football was the favourite sport in
22 approximately 60% of the countries (59.70%; n=92), with the budget allotted to women's
23 football being, on average, close to four million Euros per year’ (p. 139).

24 Clarity of roles was a theme present within 12 extracts, and four studies. (Brown &
25 Arnold, 2019; Fletcher & Streeter, 2016; Haddad et al., 2021; Molan et al., 2021). The theme

1 is exemplified in an extract from Fletcher & Streeter, (2016): ‘Everyone who is a part of this
2 team knows exactly what their role is. [...] every day I will know exactly who I am going to
3 be looking at and I will always formulate a plan of action for their improvement’ (p.135).

4 Empowerment of the athletes within their teams was identified within 21 extracts, and
5 seven studies. (Brown & Arnold, 2019; Fletcher & Streeter, 2016; Haddad et al., 2021;
6 Henriksen et al., 2010; Molan et al., 2021; Sandardos & Chambers, 2019; Tibbert et al.,
7 2015). The theme is exemplified by an extract from Henriksen et al., (2010): ‘The coach has
8 no monopoly on knowledge, and all the athletes can contribute to discussions and thereby
9 stimulate learning’ (p. 218)

10 Positive feedback from the team was recognised as a factor that contributes to thriving
11 within 14 extracts across four studies. (Brown & Arnold, 2019; Fletcher & Streeter, 2016;
12 Haddad et al., 2021; Molan et al., 2021). The theme is characterised in an extract from
13 Haddad et al., (2021): ‘Coaches considered ‘leadership capacity’ within the group: whether
14 they thought they had “positive influencers,” the “right people, good characters”’ (p. 6).

15 The bond between the team was a contributor towards thriving. Reference to the
16 bonds between individual members of a team was identified within 18 extracts, and eight
17 studies. (Arnold et al., 2018; Brown & Arnold, 2019; Carless & Douglas, 2012; Filho &
18 Rettig, 2018; Haddad et al., 2021; Henriksen et al., 2010; Ribeiro et al., 2017; Tibbert et al.,
19 2015). The theme is evidenced in an extract from Brown & Arnold, (2019): ‘You make
20 friends off [the pitch], [...] that’s when you start caring about people. [...] And then when
21 you’re pulling the shirt on, you care about each other’ (p. 74).

22 ***Environmental Inhibitive Factors***

23 Eight studies produced 42 extracts related to inhibitive factors of thriving within the
24 tier of the environment; these were organised into four themes. The themes that were

1 identified as inhibitive factors within the environment were: coaching team, lack of role
2 models, over-focus on result and team conflict.

3 The first theme within the environment that was identified as an inhibitive factor was
4 the influence of the coaching team. This theme was prevalent within eight extracts and five
5 studies. (Carless & Douglas, 2012; Carless & Douglas, 2013; Henriksen et al., 2020; Howells
6 & Fletcher, 2015; Tibbert et al., 2015). An extract that illustrates the theme is from Tibbert et
7 al., (2015): ‘The coach's attempt at motivating Joe seemed to be to belittle concerns regarding
8 his injury or illness’ (p. 75).

9 The lack of role models for the athletes was identified as a theme within three extracts
10 and two studies. (Henriksen et al., 2020; Howells & Fletcher, 2015). The theme is
11 exemplified by an extract from Henriksen et al., (2020): ‘A football player who had very few
12 DC [Dual Career] peers in his football team [...] therefore lacked peer support’ (p. 7).

13 The environmental factor of over-focus on result was present within 29 extracts
14 throughout eight studies. (Blijlevens et al., 2018; Carless & Douglas, 2012; Carless &
15 Douglas, 2013; Henriksen et al., 2020; Howells & Fletcher, 2015; Madigan & Nicholls, 2017;
16 O'Neil et al., 2021; Tibbert et al., 2015). The theme is characterised by an extract from
17 Carless & Douglas, (2012): ‘As a result of pressure to conform to the terms of the
18 performance narrative, [...] some individuals consciously silence their own story in order to
19 tell a performance tale’ (p. 14).

20 Conflict within a team was identified as an inhibitive factor within two extracts and
21 one study. (Howells & Fletcher, 2015). An example extract of this theme is found in Howells
22 & Fletcher, (2015): ‘It was also common for the swimmers to become embroiled in conflict
23 with their teammates’ (p. 16).

24 **Personal Qualities**

1 Personal Qualities that influenced thriving were present in 75 extracts, and across 16
2 studies that produced seven themes.

3 *Personal Qualities Facilitative Factors*

4 Sixteen studies produced 41 extracts related to facilitative factors of thriving within
5 the tier of personal qualities; these were organised into four themes. The personal qualities
6 that were identified as facilitative factors of thriving were: commitment, experiences, external
7 endeavours and trust.

8 The theme of commitment was identified within 15 extracts across nine studies.

9 (Blijlevens et al., 2018; Brown et al., 2018; Carless & Douglas, 2012; Fletcher & Streeter,
10 2016; Haddad et al., 2021; Henriksen et al., 2010; Lane, 2013; Tibbert et al., 2015; Vallerand
11 et al., 2008). The theme is demonstrated through an extract from Vallerand et al., (2008):
12 ‘Specifically, both types of passion [harmonious and obsessive] toward basketball were found
13 to predict deliberate practice, which, in turn, was found to predict performance’ (p. 381).

14 The volume, and depth of experience of thriving was demonstrated to be a theme of
15 thriving as evident within 10 extracts, across four studies. (Brown et al., 2018; Brown et al.,
16 2021; Filho & Rettig, 2018; Haddad et al., 2021) This theme is illustrated within two findings
17 from Filho & Rettig, (2018): ‘Every additional year of coaching experience in Champions
18 League was found to improve final rank by 3.63 positions ($\gamma_{10} = -3.63$, $p = .015$)’ (p. 139).

19 The prevalence of athletes taking part in endeavours outside of their athletic pursuits
20 was identified within eight studies and 13 extracts. (Blijlevens et al., 2018; Carless &
21 Douglas, 2012; Carless & Douglas, 2013; Henriksen et al., 2020; Howells & Fletcher, 2015;
22 Kuettel et al., 2021; O’Neil et al., 2021; Tibbert et al., 2015). An example of an extract that is
23 indicative of the theme can be found within the study from Carless & Douglas, (2013): ‘Tony
24 variously shared stories of his family, his partner, his passion for cooking and desire to train
25 as a chef, and his love of theater and dance’ (p. 706).

1 The theme of athletes trusting those around them within the environment was
2 identified within three extracts and three studies. (Brown et al., 2018; Fletcher & Streeter,
3 2016; Henriksen et al., 2020). This theme is characterised in an extract from Fletcher &
4 Streeter, (2016): ‘In relation to people’s attitudes, an emphasis was placed on swimmers
5 trusting the coaches and support staff’ (p.133).

6 ***Personal Qualities Inhibitive Factors***

7 Ten studies produced 34 extracts related to inhibitive factors of thriving within the tier
8 of personal qualities; these were organised into three themes. The personal qualities that were
9 identified as inhibitive factors of thriving were: damaged external relationships, demands of
10 other commitments, and negative self-perception.

11 The presence of relationships external to the sporting environment that are fractured
12 can become an inhibitive factor to thriving. This theme was identified within seven extracts
13 across five studies. (Blijlevens et al., 2018; Carless & Douglas, 2013; Henriksen et al., 2010;
14 Henriksen et al., 2020; Tibbert et al., 2015) and is evidenced within Carless & Douglas,
15 (2013): ‘I have to say that relationships have suffered because of my hockey. So if I hadn’t
16 been playing hockey then I still think maybe I would have still been with a certain person’ (p.
17 703).

18 The time, energy and focus required from commitments that are not directly related to
19 the sporting environment was identified as an inhibitive factor within eight extracts and two
20 studies. (Henriksen et al., 2020; O’Neil et al., 2021). An indicative extract of this theme is
21 from Henriksen et al., (2020): ‘It is not a solution to let studies be a dominating focus’ (p. 9).

22 Negative self-perceptions was found to be a theme present within 19 extracts and six
23 studies. (Carless & Douglas, 2012; Carless & Douglas, 2013; Howells & Fletcher, 2015;
24 Kuettel et al., 2021; Lane, 2013; Tibbert et al., 2015). This theme is characterised in a theme
25 from Kuettel et al., (2021): ‘[the] ‘languishing’ profile, [...] was characterized by [...] scores

1 of anxiety ($M = 14.80$, $SD = 2.75$) and depression ($M = 31.63$, $SD = 6.46$) that indicate
2 moderate to severe symptoms' (p. 5).

3 **Psychological Skills**

4 Psychological skills that influenced thriving were present in 52 extracts, and across 16
5 studies that produced six themes.

6 *Psychological Skills Facilitative Factors*

7 Fifteen studies produced 50 extracts related to facilitative factors of thriving within
8 the tier of psychological skills; these were organised into five themes. The psychological
9 skills that were identified as facilitative factors of thriving were: adaptability, confidence,
10 focus, goal setting and pressure management.

11 The first theme identified beneath Psychological Skills was adaptability. This theme
12 was identified across three extracts and two studies. (Blijlevens et al., 2018; Sandardos &
13 Chambers, 2019). This theme is characterised by an extract from Blijlevens et al., (2018):
14 'They [athletes] also need to be prepared and able to adapt to unexpected situations in
15 competition' (p. 208).

16 The second theme that makes up part of the tier of psychological skills that identified
17 within the literature is confidence. This theme was evident within eight extracts across six
18 studies. (Blijlevens et al., 2018; Brown et al., 2018; Fletcher & Streeter, 2016; Rouquette et
19 al., 2021; Lane, 2013; Sandardos & Chambers, 2019;). An extract that illustrates this theme
20 was identified within the study by Blijlevens et al., (2018): 'Self-confidence influences the
21 choices they make, the effort they expend, the persistence they display when facing
22 difficulties and the resilience they display when facing setbacks' (p. 206).

23 The ability to concentrate and focus was a psychological skill identified within five
24 extracts throughout four studies. (Blijlevens et al., 2018; Brown et al., 2018; Carless &
25 Douglas, 2012; Vallerand et al., 2008). The theme is characterised in an extract from Brown

1 et al., (2018): ‘How you concentrate and what you concentrate on [is important]. And the
2 quality and depth of your concentration’ (p. 141).

3 A theme identified across 21 extracts and nine studies was that of setting goals or
4 identifying potential inhibitive factors of the set goals. (Arnold et al., 2018; Blijlevens et al.,
5 2018; Brown & Arnold, 2019; Brown et al., 2018; Fletcher & Streeter, 2016; Henriksen et al.,
6 2020; Molan et al., 2021; Sandardos & Chambers, 2019; Vallerand et al., 2008). An example
7 of an extract that illustrates this theme is from Brown et al., (2018): ‘This guy knows where
8 he’s going, he knows what he’s got to do, he knows how he’s going to manage all the things
9 that are going to throw him off, the probability is this guy will thrive’ (p. 141).

10 The ability to manage pressure was another prevalent theme within the literature,
11 identified within 13 extracts and six studies. (Blijlevens et al., 2018; Brown et al., 2018;
12 Lane, 2013; Carless & Douglas, 2013; Kuettel et al., 2021; Tibbert et al., 2015). This theme
13 is characterised in a theme from Blijlevens et al., (2018): ‘The optimal level of arousal also
14 depends on the apparatus’ (p. 208).

15 *Psychological Skills Inhibitive Factors*

16 One study produced two extracts related to facilitative factors of thriving within the
17 tier of psychological skills. The psychological skills theme that was identified as an inhibitive
18 factor to thriving is: lack of reflective practice. The lack of reflective practice was a theme
19 identified within two extracts and one study. (Howells & Fletcher, 2015). The extract that
20 provides evidence of this theme is from Howells & Fletcher, (2015): ‘it [supressing reactions
21 to experiences rather than reflecting] became increasingly maladaptive in the longer term
22 resulting in the swimmers acknowledging the need to confront their thoughts, feelings and
23 behaviours’ (p. 12).

24

1 **Discussion**

2 Using meta-integration, the aim of this systematic review was to investigate the
3 phenomenon of thriving, and to identify the factors that can both facilitate and inhibit a state
4 of thriving within elite sport. The systematic review involved 24 studies and gave a total of
5 33 themes that were divided into three categories. The three categories that were identified
6 were: environment, personal qualities, and psychological skills. Within each these themes,
7 there were a number of facilitative and inhibitive factors that were identified as influencing
8 the athletes' state of thriving. Throughout the research, it is noteworthy that much of the
9 extant literature is not specifically aimed at the phenomenon of thriving, and often focused on
10 what has been determined within this review as specific factors that influence thriving; for
11 example, leadership (Haddad et al., 2021), coaching (Henriksen et al., 2010), individual
12 mentality (Tibbert et al., 2014) or organisational structure (Arnold et al., 2018). In addition to
13 this, occasionally other similar terms to thriving are used, including 'holistic' (Henriksen et
14 al., 2020) and 'flourish' (Kuettel et al., 2021) which is perhaps indicative of an issue of
15 inconsistent terminology across studies which may mean that the search terms used in this
16 current review are not 100% sensitive to research that could be included in the review
17 (Dieste, Grimán & Juristo., 2008).

18 The timing of this review is appropriate, considering the findings from independent
19 reviews such as that by Tanni Grey-Thompson into the Duty of Care in Sport (Department
20 for Digital, Culture, Media & Sport, 2017), and the review into institutional racism in
21 Scottish Cricket (Sport Scotland, 2022). This review builds on the guidance and
22 recommendations of reports like these to provide more information for National Governing
23 Bodies (NGBs) and other organisations, managers, coaches and athletes for what factors to be
24 aware of factors that may both facilitate and inhibit athlete(s) possibility of thriving.

1 Overall, the literature captures a large range of sports, ages, and participants involved
2 in sport (e.g., athletes, coaches, managers etc.) which provides multiple viewpoints on what
3 factors are relevant to thriving (Hanrahan & Biddle, 2002). All of the research included in
4 this review has been published within a fifteen-year period from 2007 onwards, meaning that
5 the literature is all somewhat relevant to the current sporting climate (Hagger &
6 Chatzisarantis, 2009). However, there is a distinct difference in the frequency of results for
7 facilitative, compared to inhibitive factors. This is a significant oversight of the literature that
8 is included within this review.

9 **Environmental Factors Tier**

10 For the purposes of the review, the environmental factors tier was defined as ‘the
11 aggregate of external agents or conditions—physical, biological, social, and cultural—that
12 influence the functions of an organism’ (VandenBos, 2015). This was the most prevalent
13 factor identified within the literature, demonstrating that it is the situation which an athlete
14 finds themselves in that is the largest contributor or detractor for their possibility of thriving.
15 The facilitative factors from themes that were organised into the environmental tier included
16 the high ‘holistic focus’ (Molan et al., 2021) on both wellbeing and performance, the ‘team
17 bonds,’ (Sandardos & Chambers, 2019) the ‘support’ from family members and friends,
18 (Carless & Douglas, 2013) and the provision of ‘learning opportunities’ (Blijlevens et al.,
19 2018). The main inhibitive factors within the environmental tier included ‘team conflict’
20 (Howells & Fletcher, 2015) and ‘over-focus on result.’ (Madigan & Nicholls, 2017). The
21 most prevalent theme within the tier of the environmental factors was that of a holistic focus.
22 This was somewhat expected whilst completing the systematic review, as outlined in the
23 introduction; there are numerous athlete accounts of how a focus purely on performance, can
24 be emotionally and psychologically stifling and damaging, or lead to a short period of

1 traditionally assumed success (medals etc.) rather than a long-term enhancement in
2 performance both within sport and external to sport (Burton, 1989).

3 For the purposes of the review, the personal qualities were defined as ‘relatively
4 stable, consistent, and enduring internal characteristic that is inferred from a pattern of
5 behaviours, attitudes, feelings, and habits in the individual’ (VandenBos, 2015). The personal
6 qualities tier included significant contributors to thriving such as ‘previous experiences,’
7 ‘commitment’ and ‘external endeavours.’ The major inhibitive factors within the personal
8 qualities tier included ‘negative-self-perceptions’ which commonly manifested as depression
9 and anxiety (Lane, 2013). This theme describes how the personalities and experiences within
10 the environment can affect thriving.

11 **Personal Qualities Tier**

12 The most prevalent theme within the tier of personal qualities was the commitment
13 that an athlete, and those that surround them must have to obtain a sense of thriving. Similar
14 to the holistic focus in the environmental factors tier, there are multiple athlete narrative
15 accounts of the sacrifice(s) that not only they have made, but the sacrifices of those around
16 them also (Coker-Cranney et al., 2020). Without commitment, or an emotional investment in
17 the sport, it is unlikely that any upward progression will be experienced within sport, one of
18 the key defining factors to thriving (Mousavi, & VaezMousavi, 2015). The second most
19 prevalent theme within this layer was the pursuit of commitments that are not directly related
20 to sporting performance. It was noteworthy that this was such a prevalent theme, particularly
21 as it could be considered to be in contrast to the theme of commitment. (Carless & Douglas,
22 2013). Conspicuous by absence, was the lack of referral to personality types within the
23 entirety of the literature. The big five personality types (Fiske, 1949), is a factor that is highly
24 prevalent within organisational psychology, for example the research by Costa, (1996). This
25 is a field that supposedly has crossover with sport psychology (Fletcher, 2011), yet a major

1 factor that is not captured by the literature included within the study, despite many references
2 to personal qualities.

3 **Psychological Skills Tier**

4 For the purposes of the systematic review, ‘Psychological Skills’ were defined as
5 ‘functional factors—that contribute to the development of personality, the maintenance of
6 health and well-being’ (VandenBos, 2015). Major facilitative factors within the psychological
7 skills tier included ‘pressure management’ (Lane, 2013) and ‘goal setting’ (Vallerand et al.,
8 2008). The most notable of the psychological skills that were found to be inhibitive factors
9 included the ‘lack of reflective practice’ that was identified within the literature included
10 within the review. It was unexpected that this was the most prevalent theme within the
11 literature under psychological skills; other factors were expected to be more prevalent within
12 this tier, such as imagery, or competition planning (Erciş, 2018).

13 **Methods**

14 The methodology used in the studies included in the systematic review was mixed,
15 with fourteen of the studies using qualitative methods, (Arnold et al., 2018) and twelve using
16 quantitative. (Filho & Rettig, 2018). The most common research designs used included
17 questionnaires (Brown et al., 2021) and interviews (Fletcher & Streeter, 2016). This mixture
18 of methods not only allows for the capture of deep, highly subjective accounts of experiences
19 related to thriving, but also means that there is good support from empirical, numerical data.
20 Within the data, there is a large range of sports included, from including Association Football
21 (Ribeiro et al., 2017), American Football (O’Neil, Amorose & Pierce, 2020) Gymnastics
22 (Blijlevens et al., 2018), Swimming (Fletcher & Streeter, 2016), Sailing (Henriksen et al.,
23 2010) and Martial Arts, (Brown, et al., 2018) amongst others. This allows for not only a good
24 breadth of perspectives on thriving, but also indicates that the findings are highly applicable
25 to a range of sports (Nia & Besharat, 2010). In most studies, the participants were athletes,

1 however there were examples of coaches, parents and managers being included in the studies
2 which allows for the capture of data related to thriving in a sporting and non-sporting context,
3 as well as varying historical, present and future orientated focuses. This results in a highly
4 holistic capture of data for inclusion in the current study (Henriksen et al., 2010). In addition
5 to this, the competition level of the participants ranged from semi-elite to world-class elite.
6 This also provides depth to the review, as there are multiple perspectives from various roles
7 and levels of 'elite' levels (Swann et al., 2015) on the phenomenon of thriving (Andrew et al.,
8 2007); this allows for the findings to be applicable to all levels of elite sport. There are few
9 studies within the review that analyse the differences between a group of thriving athletes
10 compared to a group of non-thriving athletes, most studies are of a single group and their
11 experiences of the extent to which they have experienced thriving. This means that the extent
12 to which thriving positively impacts on sporting and non-sporting life is unclear (Henriksen
13 et al., 2020)

14 **Limitations of the Review**

15 This review was the first of its kind that aimed to synthesise multiple studies
16 concerned with thriving and assimilate the findings into a definition and model that can be
17 used to inform practice, however, there are some limitations that require consideration. It is
18 likely that the researchers influence over the interpretation and analysis of the results is more
19 subjective that it might have been, had other studies been performed prior that would have
20 provided a reference point for this review (Tod, 2019). The research included in this review
21 has mostly consistent terminology, as most of the included studies are published in journals
22 specific to the field of sport and exercise psychology. However, there are a small number that
23 are published in journals that are not specific to sport and exercise psychology, thus, there
24 may be a few occasions where the same terminology used in different journals may refer to
25 different factors (Dieste, Grimán & Juristo., 2008). This has meant that the researcher's

1 coding and interpretation of themes may group extracts together that another researcher may
2 not have found similar (Culver et al., 2012). The lack of comparative studies included within
3 the review is a limitation, as the resulting conclusions cannot accurately demonstrate the
4 value and benefits that can be gained from the pursuit of thriving, rather than pursuit of more
5 traditional markers of success, like medals. (Henriksen et al., 2020) In addition to this, the
6 search was limited to English language journal entries, which may result in an Anglo-centric
7 review meaning that valuable and valid research may not have been included within the
8 current review, limiting the applicability of the findings to Anglo-centric cultures. (Boykin,
9 1978) The researcher also believes that extant literature is limited field of inhibitive factors to
10 thriving. It is the belief of the researcher that there are ‘blind spots’ within this field that
11 require further investigation (Martin, 2001).

12 **Future Research Directions**

13 Informed by the findings from this review, a study investigating the perceptions of
14 what inhibitive factors to thriving exist within elite sport. Multi-sport, multi-age and multi-
15 gender investigations would likely yield different and various results (Martin et al., 2001).
16 The model of thriving produced from the results of this review remains incomplete until a
17 comprehensive and reliable list of inhibitive factors can be produced. Additional work on
18 specific factors of the model would provide supporting evidence as to the nature of the role of
19 facilitative or inhibitive factors to thriving. It is likely that different factor will be of varied
20 importance in different sports, age groups and genders. (Martin et al., 2001). It may be
21 pertinent for National Governing bodies to commission research on how best to create
22 conditions for athletes to thrive that are specific to the sport that they manage. This would
23 inform the allocation of budget and resource, particularly in organisations that are limited in
24 their income.

1 Future research should endeavour to update the listed facilitative and inhibitive
2 factors that were found in this study. It would be worth monitoring this over time to
3 determine whether certain factors become more or less important to bringing about a state of
4 thriving than they are currently, in addition to investigating how these factors vary in
5 importance in different sports, ages, competition levels, genders and other demographic
6 characteristics. Furthermore, future research should focus on creating psychological
7 interventions aimed at particular factors that have been found in this study. This would allow
8 for the determination of the most effective methods for facilitating certain aspects of thriving,
9 and would allow for increased specialisation for certain managers, coaches and sport
10 psychologists (amongst other roles) as the best practices for each factor of thriving become
11 more defined, and therefore worthy of investment.

12 **Implications for Practice**

13 The practical implications of this review of thriving are numerous. The easily legible
14 nature of the model allows for applications at sports teams, clubs, institutions and national
15 and international governing bodies. The results of the review can direct how elite sport is
16 approached, and how the athletes are facilitated towards reaching their full potential both
17 within sport and external from their athletic careers (O'Neil et al., 2021).

18 At an individual athlete level, this review directs that these interventions be targeted
19 around psychological skills, such as improving the athlete's ability to manage pressure, or
20 reflect or other psychological factors found to be a contributor to thriving. Where the athletes
21 are supported by a Multi-Disciplinary Team (MDT), this review will direct MDT behaviour
22 and working practices as a result of the awareness of the factors that are traditionally
23 considered outside the normal role of a coach, such as support, facilitating the team bonds
24 and provision for external endeavours. These behaviours and responsibilities may become an
25 extension of the traditional role that members of the MDT may occupy.

1 The findings may also influence strategic direction of many sports clubs and
2 organisations, through supporting cases for investment in methods for improving on the
3 current status of the organisation's ability to facilitate thriving through recruitment (of
4 athletes, coaches, etc.), organisational focus (on performance and wellbeing) and direction
5 (creating challenge in the environment).

6 **Concluding Remarks**

7 This is the first review into the phenomenon of thriving in sport, that has attempted to
8 provide not only a definition, but a synthesis of the facilitative and inhibitive factors that
9 contribute or limit the likelihood of achieving a state of thriving within Sport and Exercise
10 Psychology. It is proposed that the use of the results of this review will assist relevant
11 stakeholders to direct initiatives towards enhancing the influence of the facilitative factors,
12 and reducing the influence of the inhibitive factors over the athletes involved in sport.

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1 Table 1

2 *Summary of Studies Included in the Review*

Purpose	Author(s)	Participants	Sport(s)	Design	Data Collection	Findings
Organizational stressors, social support, and implications for subjective performance in high-level sport	Arnold, Edwards & Rees, (2018)	N= 122 Mean age= 20.5 Gender= Mixed (60 Male, 62 Female) Type= Athletes Sporting Standard= Competitive elite Years of experience= 2-5 years	Multiple (Archery, Athletics, Badminton, Basketball, Boxing, Canoeing, Cricket, Curling, Cycling, + 25 more). Gymnastics	Quantitative	Questionnaires	4 interactions that indicated social support as a moderator of organisational stress and performance. But also found reverse buffering where it can exacerbate the negative impact of organisation stress on performance
Psychological characteristics and skills of top-level Dutch gymnasts in the initiation, development and mastery stages of the athletic career	Blijlevens et al., (2018)	N= 16 Age range= 10-24 Gender= Female Type= Athletes Sporting Standard= Competitive elite Years of experience= 2-12 years		Qualitative	In depth Interviews	3 Stage model: Initiation, Development, Mastery. Involving psychological characteristics of Maximising potential, working with your environment, delivering high performance
Sports performers' perspectives on facilitating thriving in professional rugby contexts	Brown & Arnold, (2018)	N= 18 Age range= Not recorded Gender= Male Type= Athletes Sporting Standard= Competitive elite	Rugby	Qualitative	Semi-Structured Interviews	Two overarching themes relating to the environmental factors that may promote player thriving in professional rugby contexts. The first was labelled "Establishing bonds

		Years of experience= 0-12 years				between teammates” and includes six themes. The second overarching theme is labelled “Establishing a connection to the coaching staff and club” and includes seven themes
A Qualitative Exploration of Thriving in Elite Sport.	Brown, et al., (2018)	N= 15 Age range= 21-62 Gender= Mixed (11 Male, 4 Female) Type= Mixed (5 Athletes, 5 Coaches, 5 Sport Psychologists Sporting Standard= Competitive elite Years of experience= Not recorded	Multiple (Judo, Rugby Union, Swimming).	Qualitative	Semi-Structured Interviews	4 core categories: leadership, performance enablers, people, and organizational culture
A longitudinal examination of thriving in sport performers.	Brown et al., (2021)	N= 268 Age range= 16-62 Gender= Mixed (188 Male, 80 Female) Type= Athletes Sporting Standard Range= Semi elite-Successful elite Years of experience= Not recorded	Multiple (Basketball, Cricket, Hockey, Archery, Fencing, Horse Riding).	Quantitative	Questionnaires	Thriving to be highly predicted by both the experience of recent thriving and the satisfaction of the basic psychological needs for autonomy, competence, and relatedness
Stories of success: Cultural narratives and personal stories of elite and	Carless & Douglas, (2012)	N= 21 Age range= 18-44 Gender= Mixed (10 Male, 11 Female)	Multiple (Athletics, Rowing, Rugby Union,	Qualitative	Interviews and Focus Groups	As a result of the dominance of the performance narrative, those experienced athletes who do not subscribe to the terms of

professional athletes		Type= Athletes Sporting Standard= Competitive elite Years of experience= Not recorded	Swimming, Cricket, Judo, Canoeing, Hockey, Netball).			this story type must do narrative 'work' if they are to resist the cultural pressures towards a singular conception of success (or identity) to create and sustain a personal story that allows them to continue despite inevitable fluctuations in form, fitness, and so on
Living, resisting, and playing the part of athlete: Narrative tensions in elite sport.	Carless & Douglas, (2013)	N= 21 Age range= 18-44 Gender= Mixed (10 Male, 11 Female) Type= Athletes Sporting Standard= Competitive elite Years of experience= Not recorded	Multiple (Athletics, Rowing, Rugby Union, Swimming, Cricket, Judo, Canoeing, Hockey, Netball).	Qualitative	Narrative	We found three distinct processes in action as athletes negotiate and respond to the culture of elite sport
Building and sustaining high performance environments: The 'road' from London 2012 to Rio 2016	De Martin-Silva, Calábria-Lopes & Patatas, (2013)	N= 1 Age= Not recorded Gender= Male Type= Organising Committee Sporting Standard= World Class elite Years of experience= Not recorded	Multiple (Olympic Programmes 2012 & 2016)	Qualitative	Reflective article	In this paper we showed how Andrew's high-hope attributes served to influence not only his behaviours but more importantly, to act as 'a prism that sent shards of multicolored light in various directions' (Snyder, 2002, p. 269).
The road to victory in the UEFA Women's Champions	Filho & Rettig, (2017)	N= N/A Age range= N/A Gender= N/A Type= N/A	Football	Quantitative	Hierarchical linear modeling analysis	Data analysis yielded a two- and three-level solution. The two-level solution was deemed more realistic and applied, and

<p>League: A multi-level analysis of successful coaches, teams, and countries</p>		<p>Sporting Standard= Competitive elite- Successful elite Years of experience= N/A</p>				<p>was chosen as the omnibus final model. Within the two-level solution, years coaching experience in Champions League at level-1 ($\gamma_{10}=-2.90$), and number of times team has won Champions League ($\gamma_{01}=-7.13$) and number of international players ($\gamma_{02}=-1.08$) at level-2, predict final performance at The revised HPE model</p>
<p>A case study analysis of a high performance environment in elite swimming</p>	<p>Fletcher & Streeter, (2016)</p>	<p>N= 14 Age range= 19-63 Gender= Mixed (10 Male, 4 Female) Type= Mixed (6 Athletes, 4 Coaches, 1 biomechanist, 1 director, 2 other) Sporting Standard= Successful elite Years of experience= 2-15</p>	<p>Swimming</p>	<p>Qualitative</p>	<p>Interviews</p>	
<p>The decision to adopt a formal athlete leadership group: Qualitative insights from professional football coaches</p>	<p>Haddad, O'Connor, Burns & (2020)</p>	<p>N= 16 Age range= 37-62 Gender= Male Type= Head Coaches Sporting Standard= Competitive elite- Successful elite Years of experience= 2-15 years</p>	<p>Australian Rules Football</p>	<p>Qualitative</p>	<p>Semi-Structured Interviews</p>	<p>Data analysis identified ten higher-order themes, which were absorbed into three overarching themes that identify factors shaping coaches' decision-making around the use of ALGs: perceived benefits (i. e. team management, team functioning, and performance);</p>

<p>Holistic approach to athletic talent development environments: A successful sailing milieu</p>	<p>Henriksen, Stambulov & Roessler, (2010)</p>	<p>N= 14 Age range= Late 20s Gender= Male Type= Athletes Sporting Standard= Successful elite Years of experience= 5-10 years</p>	<p>Sailing</p>	<p>Qualitative</p>	<p>Interviews, observations</p>	<p>personal factors (i.e. past experience; coaching philosophy; interpersonal style; understanding of social influence); and situational considerations (i.e. readiness, expectations and commitment). Empirical version of the ESF model, summarizing the most important factors influencing the success of the Danish 49er sailing environment as a context for helping talented young athletes to develop their potential</p>
<p>A holistic ecological approach to sport and study: The case of an athlete friendly university in Denmark</p>	<p>Henriksen et al., (2020)</p>	<p>N= 8 Age range= Not recorded Gender= Not recorded Type= Mixed (2 athletes, 2 coaches, 2 support staff, 1 teacher, 1 chancellor) Sporting Standard= Semi elite-Competitive elite Years of experience= Not recorded</p>	<p>Multiple (Weightlifting, Sailing, Orienteering, Triathlon).</p>	<p>Qualitative</p>	<p>Interviews, Observations, and Documents</p>	<p>Two empirical models summarize the findings and portray the DCDE as: (1) centred on a dual career (DC) support team that serves to support communication and coordination between the sport, study, and private domains; (2) focused on providing individual solutions for each athlete; (3) teaching student-athletes to plan, prioritize, communicate, and take responsibility for the balance in their DC endeavour; and (4) deeply rooted in a shared DC</p>

<p>Sink or swim: Adversity- and growth-related experiences in Olympic swimming champions</p>	<p>Howells & Fletcher, (2014)</p>	<p>N= 7 Age range= 14-41 Gender= Mixed (4 Male, 3 Female) Type= Swimming Sporting Standard= Successful elite-World class elite Years of experience= Not recorded</p>	<p>Swimming</p>	<p>Qualitative</p>	<p>Narrative Anaysis</p>	<p>philosophy that puts sport first and recognizes that the student-athletes must be seen as whole persons. The swimmers perceived their adversity-related experiences to be traumatic and initially attempted to negotiate them by maintaining a state of normality through the development of an emotional and embodied relationship with water.</p>
<p>To Flourish or Languish, that is the question: Exploring the mental health profiles of Danish elite athletes</p>	<p>Kuettel, Pedersen & Larsen, (2020)</p>	<p>N= 612 Mean age= 18.99 Gender= Mixed (354 Male, 258 Female) Type= Athletes Sporting Standard= Competitive elite-World class elite Years of experience= Not recorded</p>	<p>Multiple (Badminton, Cycling, Swimming, Tennis, Basketball, Football, Handball, Ice-Hockey, Volleyball). Not Recorded</p>	<p>Quantitative</p>	<p>Online Survey</p>	<p>The results in indicate that athletes' depression and anxiety scores are predictive of their flourishing</p>
<p>If I want to perform better, then how should I feel?</p>	<p>Lane (2012)</p>	<p>N= N/A Age range= N/A Gender= N/A Type= N/A Sporting Standard= N/A Years of experience= N/A</p>	<p>Not Recorded</p>	<p>Quantitative</p>	<p>Literature Review</p>	<p>Evidence shows that emotions influence performance and this should be the starting point to applied work with individuals. I suggest seeking to identify emotional states that athletes experience in best and worst performance.</p>

Mental toughness and burnout in junior athletes: A longitudinal investigation	Madigan & Nicholls, (2017)	N= 102 Age range= 16-20 Gender= Mixed (74 Male, 28 Female) Type= Athletes Sporting Standard= Semi-elite Years of experience= Not recorded	Multiple (Soccer, Rugby, Basketball, Athletics).	Quantitative	Regression analysis	Regression analyses revealed that mental toughness predicted residual decreases in total burnout, reduced sense of accomplishment, physical and emotional exhaustion, and devaluation over time.
An exploration of performance management processes used within Olympic sport programmes	Molan et al., (2021)	N= 13 Age range= 39-63 Gender= Mixed (12 Male, 1 Female) Type= Management and Coaching Sporting Standard= Competitive elite-World class elite Mean years of experience= 11.92	Multiple (Athletics, Boxing, Badminton, Gymnastics, Golf, Rugby 7's, Swimming).	Qualitative	Interviews, observations	The findings from the analysis process are organized with the component parts of the system presented first as three general dimensions, performance management processes at a strategic level, performance management processes at an operational level, performance management processes at an individual level.
Student-athletes' dual commitment to school and sport: Compatible or conflicting?	O'Neil, Amorose & Pierce, (2020)	N= 248 Age range= 17-24 Gender= Mixed (157 Female, 91 Male) Type= Athletes Sporting Standard= Competitive elite Mean years of experience= 10.34	American Football	Quantitative	Surveys	Overall, our findings established that collegiate student-athletes are tied to school and sport for various reasons and speak to a potential need for enhanced support networks and services catered to student-athletes' academic role in the United States.

Team sports performance analysed through the lens of social network theory: Implications for research and practice	Ribeiro et al., (2017)	N= N/A Age range= N/A Gender= N/A Type= N/A Sporting Standard= N/A Years of experience= N/A	Football	Quantitative	Performance Data analysis	The network approach highlights interactional processes established by team players within and between teams as a major focus of performance analysis. Re-conceptualisation of sports teams as complex social networks provides novel insights regarding synergistic processes underlying the organisation and function of teams in performance environments.
Effect of parent responsiveness on young athletes' self-perceptions and thriving: An exploratory study in a Belgian French-Community	Rouquette et al., (2020)	N= 82 Age range= 12-14 (athletes) and Mean= 44.83 (parents) Gender= Mixed (athletes not recorded. Parents= 17 Male, 24 Female) Type= Athletes and Parents Sporting Standard= Semi elite Years of experience= Not recorded	Multiple (Athletics, Sport Climbing, Tennis, Gymnastics, Swimming)	Quantitative	Open Discussion	The four components of thriving (e.g., positive affect, vitality, health quality, and life satisfaction) were positively correlated
“It’s not about sport, it’s about you”: An interpretative phenomenological analysis of	Sandardos & Chambers, (2019)	N= 11 Mean age= 34 Gender= Male Type= Athletes Sporting Standard= Competitive elite	Multiple (Basketball, Australian Rules Football, Rowing, Boxing,	Qualitative	Semi-Structured Interviews	Five higher-order themes were identified: role; attributes; experience and training; relationship structure; and agenda. These higher order themes were absorbed into three superordinate themes:

mentoring elite athletes		Years of experience= Not recorded	Triathlon, Cricket, Golf).			critical elements, effective relationships, and perceived benefits to psychological well-being
What a difference a “Mentally Toughening” year makes: The acculturation of a rookie	Tibbert, Andersen & Morris, (2014)	N= 1 Age= Not recorded Gender= Male Type= Athlete Sporting Standard= Successful elite Years of experience= 1	Aussie Rules Football	Qualitative	Case Study interview	To maintain a career in football he has to acculturate unquestioningly to the ideals, beliefs, and values of the hypermasculine culture found in certain sports, regardless of the damage he might be doing to himself physically and mentally.
Passion and performance attainment in sport	Valleranda et al., (2007)	N= 184 Mean age= 16 Gender= Mixed (108 Male, 76 Female) Type= Athletes Sporting Standard= Competitive elite Mean years of experience= 3.8	Basketball	Quantitative	Survey	Study 1 revealed that both harmonious and obsessive passion positively contribute to performance through their link with deliberate practice. In addition, Study 2 examined the achievement goals producing the relation between passion and deliberate practice, as well as the link between passion and SWB

1 Table 2

2 *Mixed Methods Appraisal Tool Criteria*

Screening questions (for all types)	Qualitative	Quantitative randomized controlled (trials)	Quantitative non- randomized	Quantitative descriptive	Mixed methods
A. Are there clear qualitative and quantitative research questions (or objectives), or a clear mixed methods question (or objective)?	1.1. Are the sources of qualitative data (archives, documents, informants, observations) relevant to address the research question (objective)?	2.1. Is there a clear description of the randomization (or an appropriate sequence generation)?	3.1. Are participants (organizations) recruited in a way that minimizes selection bias?	4.1. Is the sampling strategy relevant to address the quantitative research question (quantitative aspect of the mixed methods question)?	5.1. Is the mixed methods research design relevant to address the qualitative and quantitative research questions (or objectives), or the qualitative and quantitative aspects of the mixed methods question (or objective)?
B. Do the collected data address the research question (objective)? E.g., consider whether the follow-up period is long enough for the outcome to occur (for longitudinal studies or study components).	1.2. Is the process for analyzing qualitative data relevant to address the research question (objective)?	2.2. Is there a clear description of the allocation concealment (or blinding when applicable)?	3.2. Are measurements appropriate (clear origin, or validity known, or standard instrument; and absence of contamination between groups when appropriate) regarding the exposure/ intervention and outcomes?	4.2. Is the sample representative of the population understudy?	5.2. Is the integration of qualitative and quantitative data (or results) relevant to address the research question (objective)?
-	1.3. Is appropriate consideration given to	2.3. Are there complete outcome	3.3. In the groups being compared	4.3. Are measurements	5.3. Is appropriate consideration given to the

	how findings relate to the context, e.g., the setting, in which the data were collected?	data (80% or above)?	(exposed vs. non-exposed; with intervention vs. without; cases vs. controls), are the participants comparable, or do researchers take into account (control for) the difference between these groups?	appropriate (clear origin, or validity known, or standard instrument)?	limitations associated with this integration, e.g., the divergence of qualitative and quantitative data (or results) in a triangulation design?
-	1.4. Is appropriate consideration given to how findings relate to researchers' influence, e.g., through their interactions with participants?	2.4. Is there low withdrawal/drop-out (below 20%)?	3.4. Are there complete outcome data (80% or above), and, when applicable, an acceptable response rate (60% or above), or an acceptable follow-up rate for cohort studies (depending on the duration of follow-up)?	4.4. Is there an acceptable response rate (60% or above)?	-

1

2

1 Table 3

2 *Studies Included in the Review Scored Against MMAT Criteria*

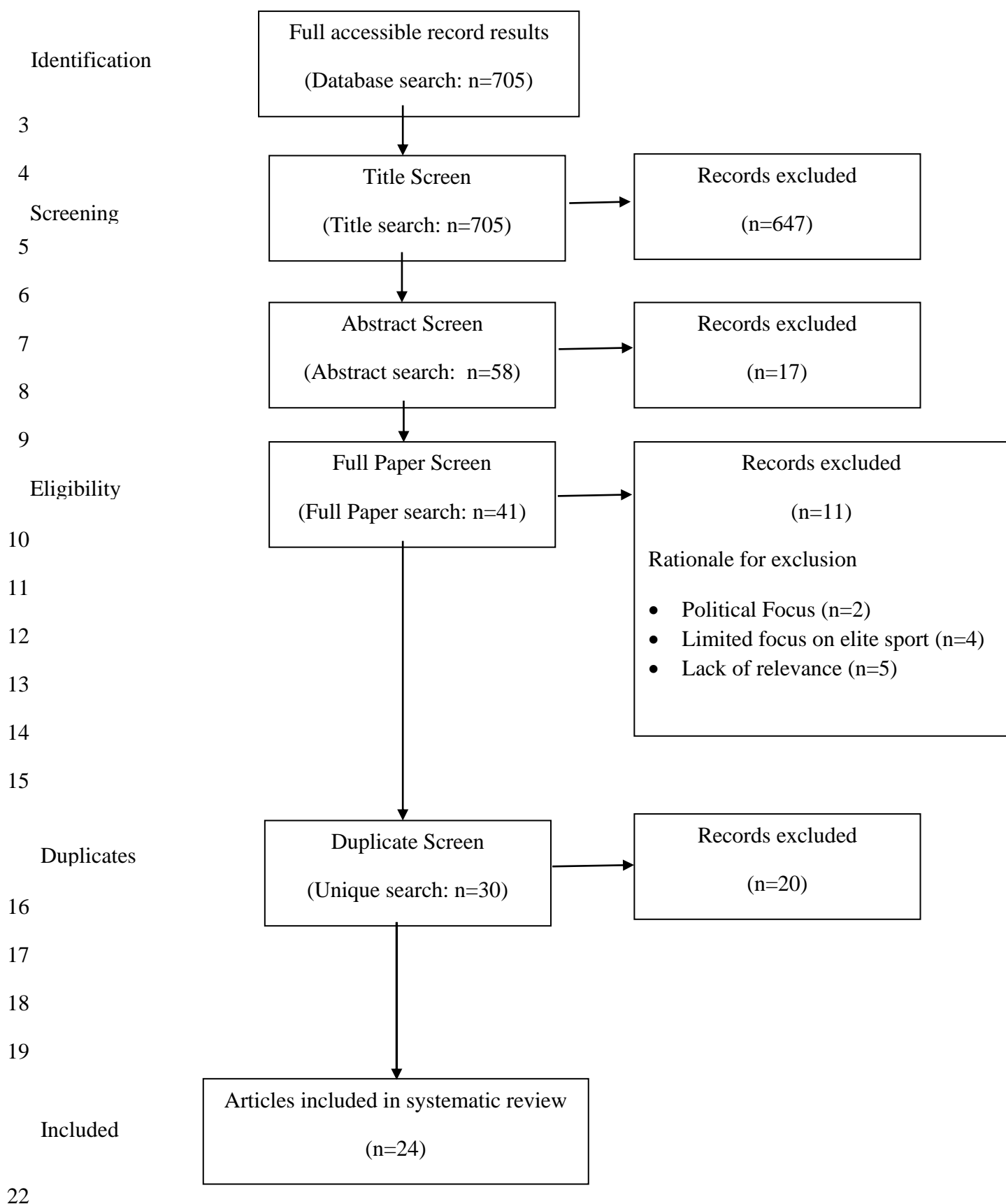
Authors	Screening Questions		Qualitative					Quantitative Descriptive					Total Quality Score%
	A	B	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	4.4	4.5	
Arnold, Edwards & Rees (2018)	1	1	-	-	-	-	-	1	1	1	1	1	100
Blijlevens, Elferink-Gemserc, Wylleman, Bool & Visscher, (2018)	1	1	1	1	1	1	1	-	-	-	-	-	100
Brown & Arnold, (2018)	1	1	1	1	1	1	1	-	-	-	-	-	100
Brown, Arnold, Standage & Fletcher, (2021)	1	1	-	-	-	-	-	1	1	1	1	1	100
Carless & Douglas, (2012)	1	1	1	1	1	1	1	-	-	-	-	-	100
Carless & Douglas, (2013)	1	1	1	1	1	1	1	-	-	-	-	-	100
De Martin-Silva, Calábria-Lopes & Patatas, (2013)	1	1	1	0	1	0	1	-	-	-	-	-	43

Filho & Rettig, (2017)	1	1	-	-	-	-	-	1	1	1	1	1	100
Fletcher & Streeter, (2016)	1	1	1	1	1	1	1	-	-	-	-	-	100
Haddad, O'Connor & Burns, (2020)	1	1	1	1	1	1	1	-	-	-	-	-	100
Henriksen, Stambulova & Roessler, (2009)	1	1	1	1	1	1	1	-	-	-	-	-	100
Henriksen, Storm, Kuettel, Linnér & Stambulova, (2019)	1	1	1	1	1	1	1	-	-	-	-	-	100
Howells & Fletcher, (2014)	1	1	1	1	1	1	1	-	-	-	-	-	100
Kuettel, Pedersen & Larsen, (2020)	1	1	-	-	-	-	-	1	1	1	1	1	100
Lane (2012)	1	1	1	1	1	1	1	-	-	-	-	-	100
Madigan & Nicholls, (2017)	1	1	-	-	-	-	-	1	1	1	1	1	100
Molan, Arnold, Kelly, Toomey & Matthews, (2021)	1	1	1	1	1	1	1	-	-	-	-	-	100
O'Neil, Amorose & Pierce, (2020)	1	1	-	-	-	-	-	1	1	1	1	1	100
Ribeiro, Silva, Duarte, Davids & Garganta, (2017)	1	1	-	-	-	-	-	1	1	1	1	1	100

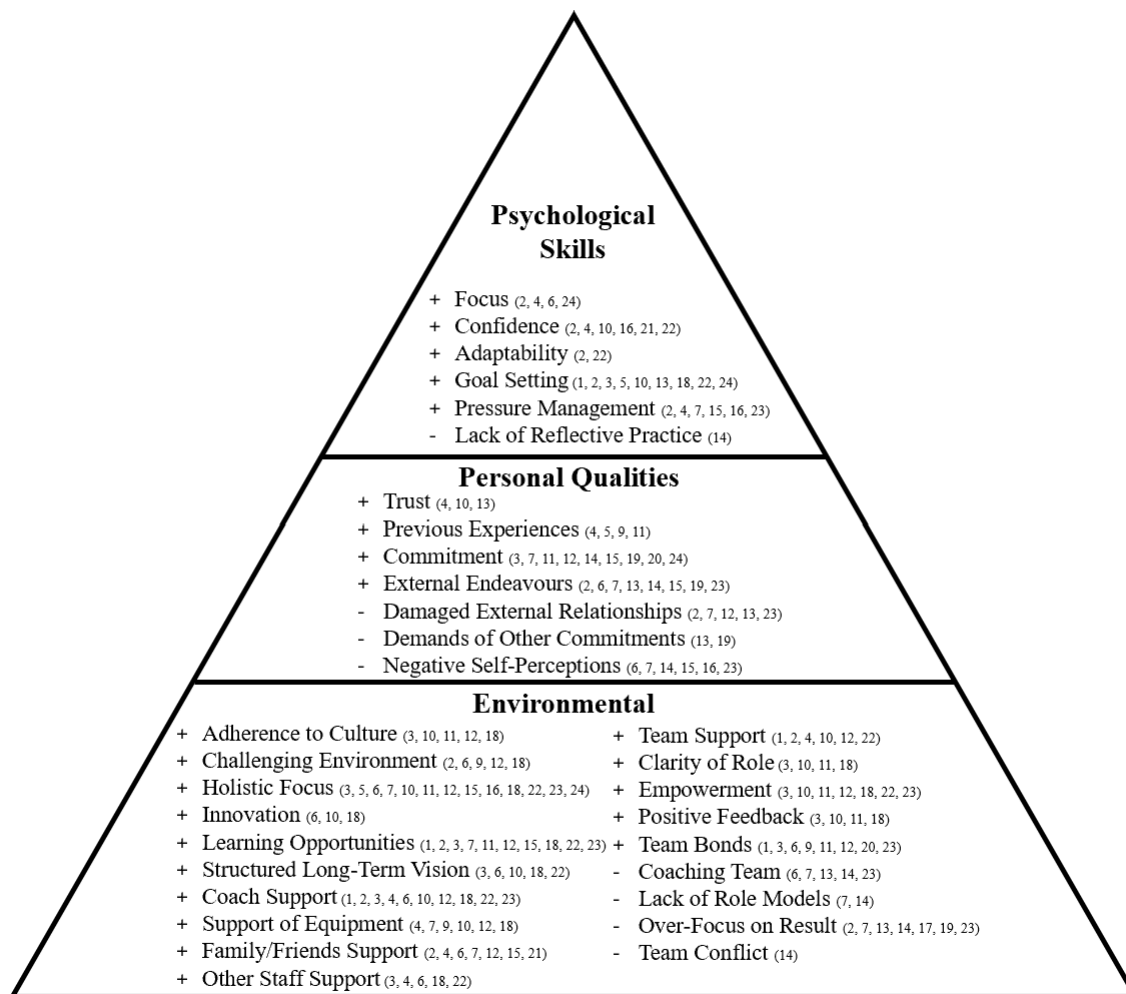
Rouquette, Knight, Lovett & Heuz'e (2020)	1	1	-	-	-	-	-	1	1	1	1	1	100
Sandardos & Chambers, (2019)	1	1	1	1	1	1	1	-	-	-	-	-	100
Tibbert, Andersen & Morris, (2014)	1	1	1	1	1	1	1	-	-	-	-	-	100
Valleranda, Mageauc, Elliot, Dumais, Demers & Rousseau, (2007)	1	1	-	-	-	-	-	1	1	1	1	1	100
Studies that meet relevant criteria (%)	100	100	100	93	100	93	100	100	100	100	100	100	

Note: 1= 'Yes.' 0='Not Sure.' OR 'No.'

^a Quantitative Randomized Controlled Trials, Quantitative Non-Randomized & Mixed Methods analysis not included as not relevant to any studies included in the review



23 *Figure 1.* PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)
 24 flowchart. 24 papers.



1

2 *Figure 2.* Thriving in Elite Sport and Perceived Facilitative and Inhibitive Factors.

3 Notes: ‘+’ denotes a perceived facilitative factor; ‘-’ denotes a perceived inhibitive factor.

4 Numbers denote specific study included within the review that refers to this factor: 1=

5 Arnold, Edwards & Rees, (2018); 2= Blijlevens, Elferink-Gemser, Wylleman, Bool &

6 Visscher, (2018); 3= Brown & Arnold, (2018); 4= Brown, Arnold, Reid & Roberts, (2018);

7 5= Brown, Arnold, Standage & Fletcher, (2021); 6= Carless & Douglas, (2012); 7= Karless

8 & Douglas, (2013); 8= De Martin-Silva, Calábria-Lopes & Patatas, (2013); 9= Filho &

9 Rettig, (2017); 10= Fletcher & Streeter, (2016); 11= Haddad, O'Connor & Burns, (2020); 12=

10 Henriksen, Stambulova & Roessler, (2009); 13= Henriksen, Storm, Kuettel, Linnér,

11 Stambulova, (2019); 14= Howells & Fletcher, (2014); 15= Kuettel, Pedersen & Larsen,

- 1 (2020); 16= Lane, (2013); 17= Madigan & Nicholls, (2017); 18= Molan, Arnold, Kelly,
- 2 Toomey & Matthews, (2021); 19= O'Neil, Amorose & Pierce, (2020); 20= Ribeiro, Silva,
- 3 Duarte, Davids & Garganta, (2017); 21= Rouquette, Knight, Lovett & Heuzé, (2020); 22=
- 4 Sandardos & Chambers, (2019); 23= Tibbert, Andersen & Morris, (2014); 24= Vallerand,
- 5 Mageau, Elliot, Dumais, Demers & Rousseau, (2007).