Psychosocial Functioning of Olympic Coaches and its Perceived Effect on Athlete Performance:

A Systematic Review

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Abstract

Effective coaching facilitates athletes' success in reaching their potential in sport. Coaches

possess a range of knowledge, skills and attributes that influence athletes' performance,

including various intrapersonal and interpersonal qualities. The purpose of this study is to

systematically review the research investigating the psychosocial functioning of Olympic

coaches and its perceived effect on athlete performance. The review was conducted and reported

in accordance with the PRISMA guidelines. The following databases were searched:

SPORTDiscus, PsycINFO, PsycARTICLES, ScienceDirect, Scopus, Web of Knowledge, and

Medline. The literature search identified 2873 studies which were screened and assessed for

eligibility, with the resultant 25 eligible studies being assessed for quality of evidence using the

Mixed Methods Appraisal Tool. Convergent meta-integration with thematic analysis was

performed by converting quantitative and qualitative data from 207 Olympic coaches and 925

Olympic athletes into relevant themes and patterns. Three core themes of traits, states, and

behaviors were identified. Within these themes, 18 traits, 28 states, and 38 behaviors were

identified that were perceived to have either a facilitative, debilitative, or non-categorized effect

on athlete performance. Future research will help national governing bodies and practitioners

develop coach education to enhance Olympic coaching effectiveness.

Keywords: coach; elite; excellence; psychology; sport

Psychosocial Functioning of Olympic Coaches and its Perceived Effect on Athlete Performance:

A Systematic Review

The central purpose of sport coaching is to nurture athletes' development, improve all aspects of their performance, and maximize their sporting achievements (Jones & Kingston, 2013; Lyle & Cushion, 2016). Numerous definitions of sport coaching exist, but for the purpose of this paper it is defined as a dynamic, social, and interpersonal process whereby coaches attempt to positively influence athletes' physical, technical, tactical, and psychological development (cf. Abraham, Collins, & Martindale, 2006; Chelladurai, 2007; Côté & Gilbert, 2009; Cushion 2007, 2010; Horn, 2008; Jowett & Shanmugam, 2016; Lyle, 2002). Coaches operate in a variety of contexts (Cushion, 2010; Lyle, 2002; Trudel & Gilbert, 2006), with performance coaches aiming to optimize athletes' motivation, learning, well-being, and goal-attainment, and supporting athletes to compete in recognized elite competitions such as the Olympic Games (Lyle, 2002; Rynne, Mallett, & Rabjohns, 2016).

The Summer and Winter Olympic Games, each staged every four years, represent the most challenging and prestigious sporting competitions in the world (Gould & Maynard, 2009). This is due to their global nature, duration, unique size and multi-sport format, with no other sporting event combining so many sport competitions at the same time and in the same place (Cogan, 2019). The unrivalled scale and spectacle generate enormous public interest and media scrutiny (Fletcher & Sarkar, 2012), and performing at the Olympic Games has been likened to competing in a crucible, with extraordinary pressure for everyone involved (Haberl & Peterson, 2006). The enhanced expectations from increases in national funding (Rees et al., 2016), combined with other coach stressors such as their continued employment being contingent on

athlete performance, creates an environment that is both physically and psychologically draining (Fletcher & Scott, 2010; Mallett & Lara-Bercial, 2016).

Sport coaching is a dynamic relational process, with the interpersonal relationship fostered between the coach and athlete at its core (Cushion, 2010; Jowett & Shanmugam, 2016), and the coach's psychosocial attributes form an integral element of this coaching process. Psychosocial attributes can be described as pertaining to both the psychological and social aspects of a phenomenon (Merriam-Webster, 2016), and these aspects are recognized to be an important component of effective coaching (International Council for Coaching Excellence, 2013). In terms of the development of understanding of this area, McCarthy and Giges (2016) reflected that "research on the psychology of coaching in sport overwhelmingly favors the act of coaching over the person who does the coaching. It seems sensible that, for the betterment of coaching in all sport, the research emphasis should begin with the person who does the coaching" (p. 108). This emphasizes the importance of moving beyond coaches' technical and tactical knowledge, which has been the traditional focus of coach development and research (Lefebvre, Evans, Turnnidge, Gainforth, & Côté, 2016; Maclean & Lorimer, 2016), towards an understanding of coaches' psychosocial attributes, focusing on who they are, how they think and feel, and how they act within their environment.

Although the primary role of Olympic coaches is to enhance athlete performance, coaches are also performers in their own right (Gould, Greenleaf, Chung, & Guinan, 2002). Coaches are expected to optimize their own functioning within a highly pressurized results-oriented culture (Fletcher & Scott, 2010), manage environmental and organizational issues, and select teams which include athletes and support staff (Rynne et al. 2016; Thelwell, Wagstaff, Rayner, Chapman, & Barker, 2017). Coaches' psychosocial attributes influence both their own

performance, and that of the athletes (Amorose, 2007; Jowett & Meek, 2000; Lyle, 2002; Mageau & Vallerand, 2003; Smith, Smoll, & Cumming, 2007; Vealey, Armstrong, Comar, & Greenleaf, 1998). Indeed, the demands and the pressurized conditions have reportedly had a negative influence on some coaches which has then adversely affected athletes, teams, and the wider organization (Grey-Thompson, 2017).

The importance of the psychosocial aspects of coaching was highlighted in Côté and Gilbert's (2009) integrative definition of coaching effectiveness, with the authors arguing that effective coaches contribute to the holistic development of athletes. They proposed that effective coaches possess three domains of knowledge: professional, interpersonal, and intrapersonal. The authors emphasized the importance of interpersonal and intrapersonal knowledge. Interpersonal knowledge refers to the ability to relate to, connect with, and influence others, and intrapersonal knowledge encompasses self-awareness and consistent reflection. Professional knowledge, including pedagogical, technical, and tactical skills, alone will not lead to optimal athlete outcomes because coaching is not performed in a vacuum, and interpersonal and intrapersonal knowledge is also required to manage relationships and the environment, and to reflect on coaching practice.

Research investigating the psychosocial functioning of Olympic coaches has gathered momentum in recent years (e.g., Chroni, Abrahamsen, & Hemmestad, 2016; Ge, Schinke, Dong, Lu, Si, & Oghene, 2016; Mallett & Coulter, 2016). There is now a need for a review which evaluates, amalgamates, and summarizes this evolving body of literature to identify research trends and overarching messages which may not be apparent in individual studies. The knowledge gained will give a more robust understanding of Olympic coaches' psychosocial qualities and provide evidence-based recommendations for training and development programs

to enhance coach effectiveness (cf. Evans, McGuckin, Gainforth, Bruner, & Côté, 2015).

Indeed, intervention studies have demonstrated that improving coaches' psychosocial knowledge

and mental skills enhances functioning and interactions with athletes (Longshore & Sachs, 2015;

Olusoga, Maynard, Butt, & Hays, 2014), and thereby affects athlete performance outcomes

which are a central component of elite sport (Cook & Fletcher, 2017; McMahon & Penney,

2013). The purpose of this study, therefore, is to systematically review the research investigating

the psychosocial functioning of Olympic coaches and its perceived effect on athlete

performance.

Method

Meta-integration was the method used for this systematic mixed studies review, which

involved combining evidence and results from quantitative, qualitative, and mixed method

studies to gain a multidimensional and comprehensive understanding of the topic (cf. Frantzen &

Fetters, 2016). This method of conducting a systematic review was deemed the most appropriate

because the nature of coaching has lent itself to a diverse range of study designs, therefore

prohibiting a meta-analysis or meta-synthesis. Rather, meta-integration is a powerful tool to

synthesize data or results from studies with different designs, and summarize all research

findings to provide evidence-based recommendations for practice and identify research gaps

(Pluye & Hong, 2014). This systematic review was informed by the Preferred Reporting Items

for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2015) and

followed the recommendations of Van Tulder et al. (2003), Harris, Quatman, Manring, Siston,

and Flanigan (2014), and Frantzen and Fetters (2016). There were five steps used for conducting

this systematic review: literature search, inclusion criteria, methodological quality assessment,

data extraction, and data analysis (Van Tulder et al., 2003).

Literature Search

The literature search strategy involved two stages to identify articles relating to psychosocial functioning of Olympic coaches and its perceived effect on athlete performance. First, seven bibliographic databases were searched: SPORTDiscus, PsycINFO, PsycARTICLES, ScienceDirect, Scopus, Web of Knowledge, and Medline. There were no constraints on the year of publication. The search protocol outlined a process which included a search of title, abstracts, and full studies using the following terms: ("athlete," OR "coach," OR "coach-athlete," OR "elite," OR "effective," OR "expert," OR "high performance,") AND ("Olympic," OR "sport," OR "world," OR "world-class"). The search terms were agreed a priori by the author team, and were intentionally broad to minimize the risk of relevant literature being missed (Gough, Thomas, & Oliver, 2012). The second stage involved hand-searching the reference lists of the studies which met the inclusion criteria (Centre for Reviews & Dissemination; CRD, 2009).

Inclusion Criteria

To be included in the review, studies were required to meet the following inclusion criteria: (i) present original empirical data relating to the psychosocial functioning of Olympic coaches; (ii) the entire study population must be explicitly from Olympic sport or must make reference to Olympic sport, and (iii) English language journal articles only. Although including English language papers only potentially leads to a biased sample, there is evidence that such a bias may not influence the results (Morrison et al., 2012).

Sifting of studies was carried out in three stages. The titles were initially screened by the first author for any indication that the study included relevant data. In instances where the title suggested the inclusion of pertinent data, the abstracts were read to establish whether the three inclusion criteria were met, and full texts were then read (see Figure 1). At each stage of

appraisal, articles were excluded if they did not satisfy the inclusion criteria. For example, studies were excluded if: they did not present original empirical data relating to psychosocial functioning of Olympic coaches (e.g. Chan & Mallett, 2011); the sample did not consist entirely of Olympic participants (e.g. Lara-Bercial & Mallett, 2016); or they were not English language journal articles (e.g. Filgueira, 2016).

Methodological Quality Assessment

To enhance methodological rigor, and in accordance with systematic review guidelines (e.g. Harris et al., 2014; van Tulder et al., 2003) and recent reviews within sport psychology (e.g. Forsdyke, Smith, Jones & Gledhill, 2016; Gledhill, Harwood, & Forsdyke, 2017; Howells, Sarkar, & Fletcher, 2017), a peer-review team was formed to minimize bias and human error. The team included the first author, a senior researcher from the same institution, and a senior researcher from an external institution. Established methods for peer debriefing involve individuals who are either knowledgeable of the topic area and/or methodology supporting the process by providing methodological guidance, and by playing 'devil's advocate' (Spillett, 2003). The search strategy, record screening, and the generation of final themes from the studies was undertaken collaboratively in meetings between the first and second author, with disagreements resolved through a process of constructive debate. Guidance on the process of conducting systematic reviews was provided by the third author via formal and informal meetings with the first author.

The methodological quality of the studies was evaluated using the Mixed Methods Appraisal Tool (MMAT; Pluye, Gagnon, Griffiths, Johnson-Lafleur, 2009; Pluye et al. 2011). This has been recognized as the most reliable and valid tool for appraising mixed methods research (Hong, Gonzalez-Reyes, & Pluye, 2018; Pace et al., 2012; Souto et al., 2015), and

studies that have used the MMAT have reported the consistency of the global 'quality score'

between 0.72 and 0.94 (Pace et al., 2012). The tool has recently been utilized in contemporary

systematic reviews in sport psychology (Bryan, O'Shea, & MacIntyre, 2017; Forsdyke et al.,

2016; Gledhill et al., 2017; Howells et al., 2017). The MMAT checklist is made up of two

screening questions and 19 items for appraising the methodological quality of five categories of

research study: (1) qualitative studies, (2) quantitative randomized controlled trials, (3)

quantitative non-randomized studies, (4) quantitative descriptive studies, and (5) mixed methods

studies. Each of the studies was appraised using the corresponding methodology-domain

specific criteria. All items were rated as "yes," "no," or "cannot tell," and one point was given to

each yes, and zero points for each no or cannot tell response. These scores produced an overall

quality score ranging from 0-4, and this was converted into a percentage-based score. It is

recognized that generating specific scores from critical appraisal tools, including MMAT, is

controversial (e.g., Higgins et al., 2019; Hong et al., 2018). The scores, therefore, do not provide

an exact metric for study quality, but rather act as a guide to the relative performance of each

included study against the MMAT criteria. In addition to calculating a total score, the

percentage of studies that met each relevant criteria was calculated, and trends across the studies

were explored.

Data Extraction

Study characteristics, including purpose, participants, sport(s), design, data collection,

and the main findings were extracted and presented in Table 1. The findings of each study were

extracted verbatim from the text and transferred into the data extraction table.

Data Analysis

Given the majority (18 of 25, 72 percent) of the included studies used a qualitative

methodology, there was a requirement for a narrative approach to the analysis. A convergent

qualitative meta-integration was therefore used to analyze the data (Frantzen & Fretters, 2016;

Hong, Pluye, Bujold, & Wassef, 2017). Results from all the included studies were transformed

into a qualitative format to present relevant patterns, themes, and concepts (Frantzen & Fretters,

2016; Pluye & Hong, 2014). More specifically, the data from the quantitative and mixed

methods studies were transformed into qualitative findings by using the text from each study's

results section, instead of using the numerical outputs. The data from all of the studies was then

synthesized using convergent thematic analysis (CRD, 2009; Hong et al., 2017; Pope, Mays, &

Popay, 2007). Convergent thematic analysis involves the identification of patterns or recurring

themes through coding relevant findings from multiple studies to bring together, organize, and

describe the findings (Frantzen & Fretters, 2016; Pope et al., 2007). The first stage involved the

process of indwelling (Trumbull, Bonney, & Grudens, 2005), whereby the first author repeatedly

read each study to become fully immersed in the data and inferences. This was followed by

coding the data, and then grouping similar codes together to form themes, which were denoted in

relation to established psychosocial constructs. For example, Jowett (2003) reported

unsuccessful performance outcomes from an athlete whose coach was "trapped in his own

preoccupations and personal obligations…and that causes anxiety in itself" (p. 453), and this was

categorized as high trait anxiety with a perceived debilitative effect on athlete performance. The

relationships within the individual studies were then explored, followed by an examination of the

relationships between the different studies.

Results

The literature search identified 2873 studies which potentially met the inclusion criteria (see Figure 1). All study titles were initially screened for relevance, and following this, 2653 studies were removed. The abstracts of the remaining 220 studies were then evaluated, and 185 of them did not meet the inclusion criteria. The residual 35 studies were finally subjected to full-text review, and 10 further studies were excluded. This process resulted in the identification of 25 studies which fully met the inclusion criteria, and these were included in the review. No additional, relevant studies were identified from the reference lists of included studies.

Study Characteristics

Demographic characteristics. The participants (N = 1143) comprised Olympic coaches (N = 207), Olympic athletes (N = 925), and other (i.e. assistant coach, parents, and Olympic athletes' siblings or significant others; N = 11). The sample sizes ranged from one to 444 (M = 45.7, and SD = 111.9). Six studies provided details relating to the age range of the participants (28 to 68 years). Twenty-four studies reported the gender of the participants. In total, 185 (16.2%) were female, 514 (45.0%) were male, and 444 (38.8%) were unknown. Twenty-two studies reported the participants' country, which were the United States of America, Norway, United Kingdom, Australia, Brazil, Canada, China, Estonia, France, Greece, Latvia, Hungary, Mexico, Russia, Spain, and Switzerland. The countries that were represented in multiple studies were the United States of America, Norway, United Kingdom, and Australia. Participants represented eight team and 13 individual sports. Five studies included participants from multiple sports, eight studies sampled participants in one sport only, and 12 studies did not report participants' sports.

Quality Appraisal

Details of the MMAT methodological quality criteria are provided in Table 2, and the resultant appraisal of each study is reported in Table 3. All of the studies were given a methodological quality percentage score using the MMAT criteria and the quality of each included study ranged from 25% to 100% ($M = 71\%$). The 18 qualitative studies ranged from 25% to 100% ($M = 72.2\%$), the four mixed methods studies all scored 75% ($M = 75\%$), and the three quantitative studies ranged from 50% to 100% ($M = 66.7\%$).

Utilizing the MMAT quality criteria, it was found that few (four of 18, 22 percent) of the qualitative studies reported details about the role of the researcher(s), how the research process was influenced by the researcher(s), or provided information about the researcher(s) epistemological stance. None of the four mixed methods studies reported the limitations associated with the integration of qualitative and quantitative data. Two out of the three quantitative studies did not use validated measures, or report a satisfactory response rate.

Psychosocial Functioning of Olympic Coaches and its Perceived Effect on Athlete Performance

We identified 84 themes, which were further categorized into three main themes. The main themes were labelled according to relevant and established psychosocial constructs, and were termed traits, states, and behaviors that relate to the psychosocial functioning of Olympic coaches. Returning to the literature that has identified psychosocial constructs (Fleeson, 2012), we amended each title to reflect the literature. Thus, we provided connections with established work to reduce confusion regarding terminology. Traits refer to an individual's characteristics that remain relatively stable throughout their lifespan, states relate to characteristics which are situationally-specific and fluctuate from moment to moment, and behaviors refer to overt and observable actions (cf. Fleeson, 2012; Gross, 2015). The convergent thematic analysis identified

18 themes which related to traits, 28 themes which referred to states, and 38 themes which

described behaviors. Based on the paper's description of the finding, the themes were then

categorized as having a perceived facilitative, debilitative, or non-categorized relationship with

athlete performance (see Figure 2).

       Traits. Twenty-two studies presented findings which were interpreted as referring to

coaches' traits. Fourteen traits had a perceived facilitative effect on athlete performance, three a

perceived debilitative effect, and one a perceived non-categorized effect.

       Facilitative traits. Traits that had a perceived positive impact on performance were

reported in 19 studies. In terms of the Big Five personality traits of conscientiousness,

agreeableness, openness, extraversion, and neuroticism (cf. Costa & McCrae, 2010), eleven

studies identified that Olympic coaches were conscientious (Chroni et al., 2016; Din et al., 2015;

Dixon et al., 2012; Gould et al., 1999; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung,

2002; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Mallett

& Coulter, 2016; Olusoga et al., 2012; Trzaskoma-Bicsérdy et al., 2007). For example, Din et al.

(2015) highlighted that a coach was "so methodical in terms of what we were doing each day and

why…everything was so well thought out and planned to the most minute detail" (p. 596). The

remaining four of the Big Five traits were only found in a single study: Mallett and Coulter

(2016) reported that the coach was "high in agreeableness" (p. 117), "high in openness" (p. 117),

"in the average range of extraversion" (p. 117), and "very low neuroticism" (p. 117).

       Moving beyond the Big Five, a high task orientation was identified in seven studies

(Chroni et al., 2016; Din et al., 2015; Dixon et al., 2012; Lyons et al., 2012; Mallett, 2005;

Pensgaard & Roberts, 2000; Pensgaard & Roberts, 2002). For example, Chroni et al. (2016)

reported a coach stating that "I do not get hung up on results…I am not bothered whether an

athlete comes in sixth or tenth or twelfth place…I focus more on their development, and if they have developed, this is very positive for me" (p. 264). Five studies (Din et al., 2015; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Mallett & Coulter, 2016; Phillippe & Seiler, 2006) identified a "sense of optimism" (Gould, Dieffenbach, & Moffett, 2002, p. 193), while a "passion for coaching" (Dixon et al., 2012, p. 357) was also detailed in five studies (Chroni et al., 2016; Currie & Oates-Wilding, 2012; Dixon et al., 2012; Mallett & Coulter, 2016; Olusoga et al., 2012). Trait emotional intelligence was identified as being facilitative in four studies (Kimiecik & Gould, 1987; Mallett & Coulter, 2016; Olusoga et al., 2012; Pensgaard & Roberts, 2002). Three studies reported high self-esteem amongst coaches (Currie & Oates-Wilding, 2012; Din et al., 2015; Olusoga et al., 2012), and trait intelligence was identified in three studies (Chroni et al., 2016; Gould et al., 1999; Seanor et al., 2017). Two studies reported coaches' perfectionism (Chroni et al., 2016; Gould et al., 1999), with Chroni et al. (2016) reporting that a coach perceived their own tendencies as "perfectionist…in their training and organizing their day to day lives and every single detail. There is no space for being lazy or not doing every single thing well" (p. 268). Trait self-control was identified in one study (Olusoga et al., 2012), and finally, one paper reported the coach was "hardy" (Mallett & Coulter, 2016, p. 117).

     Debilitative traits. Four studies reported characteristics that were perceived to be detrimental to performance. Trait anxiety was described in two studies (Greenleaf et al., 2001; Jowett, 2003), and one study described high neuroticism (Greenleaf et al., 2001). Trait pessimism was reported in one study (Gould et al., 1999), with the authors quoting an athlete arguing that, "without [the coaches'] distractions and freak-outs and negativism, I think [the athletes] by ourselves would have medaled" (p. 381).

Non-categorized traits. Six studies identified the trait of ego orientation, which was not consistently reported to have either a perceived positive or negative effect on performance (Chroni et al., 2016; Ge et al., 2016; Gould et al., 1999; Jowett, 2003; Mallett & Coulter, 2016; Pensgaard & Roberts, 2000). To illustrate, Jowett (2003) reported perceived unsuccessful athlete outcomes from a coach that: "was seemingly consumed with personal ambition and thoughts of maintaining and continuously trying to prove his athlete's competencies" (p. 453). In contrast, Mallett and Coulter (2016) reported perceived successful athlete outcomes from a coach who was: "highly motivated for his athletes to be successful and by association, he will consider himself successful" (p. 118).

States. Twenty-four studies included findings which were interpreted as referring to coaches' states. Eighteen states had a perceived facilitative impact on athlete performance, five a perceived debilitative impact, and five a perceived non-categorized impact.

Facilitative states. Twenty studies identified states that were perceived as having a positive effect on performance. Eight studies suggested that coaches demonstrated other-efficacy through their belief that athletes could successfully execute particular behaviors, which reinforced the athletes' self-confidence (Gould et al., 2001; Gould, Dieffenbach, & Moffett, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Kimiecik & Gould, 1987; Mallett & Coulter, 2016; Phillippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). Gould, Dieffenbach, and Moffett (2002) quoted an athlete expressing that "coach X…just believed in me and that is all it takes" (p. 193). Seven of the included studies reported that coaches had high coaching-efficacy and believed that they had the ability to positively affect athletes' learning and performance (Chroni et al., 2016; Currie & Oates-Wilding, 2012; Din et al., 2015; Gould et al., 2001; Jowett, 2003; Jowett & Cockerill, 2003; Mallett, 2005), with Din et al. (2015) quoting an athlete stating

that their coach had "100% confidence with little or no ego…They have to be *very* confident in

what they are doing" (p. 595-596). The related concept of state self-confidence was reported in

three studies (Currie & Oates-Wilding 2012; Din et al., 2015; Olusoga et al., 2012). Five studies

reported state optimism (Din et al., 2015; Dixon et al., 2012; Gould, Guinan, Greenleaf, &

Chung, 2002; Mallett & Coulter, 2016; Phillippe & Seiler, 2006). Five studies identified

coaches' continued learning and pursuit of new knowledge and skills (Chroni et al., 2016; Currie

& Oates-Wilding, 2012; Dixon et al., 2012; Mallet & Coulter, 2016; Seanor et al., 2017), with

Currie and Oates-Wilding (2012) quoting a coach discussing a "commitment to keep learning

and improving" (p. 429). Five studies reported high attentional control (Chroni et al., 2016;

Gould et al., 1999; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett,

2002; Olusoga et al., 2012), and emotion regulation was identified in five studies (Gould et al.,

2001; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Mallett

& Coulter, 2016; Olusoga et al., 2012). Olusoga et al. (2012) quoted a coach stating that they

"try not to react when things have gone wrong and an athlete's annoyed…wait for that emotional

response to pass, until you can get down and say, "right, ok, let's sit down and talk this through

properly"" (p.232).

Four studies identified positive attentional biases (Chroni et al., 2016; Din et al., 2015;

Dixon et al., 2012; Phillippe & Seiler, 2006), and state emotional intelligence was identified in

four studies (Kimiecik & Gould, 1987; Mallett & Coulter, 2016; Olusoga et al., 2012; Pensgaard

& Roberts, 2002). Three studies documented challenge appraisals (Chroni et al., 2016; Din et

al., 2015; Dixon et al., 2012). Chroni et al. (2016) quoted a coach explaining that "when the

results are not OK, underperformance is a challenge, especially when changes do not bring better

performances. This is the good part!" (p. 265). Two studies reported self-awareness (Gould et

al., 2001; Olusoga et al., 2012), and self-control was identified in two studies (Gould, Dieffenbach, & Moffett, 2002; Olusoga et al., 2012). Finally, one study discussed coaches' "resilience" (Currie & Oates-Wilding, 2012, p. 429).

In terms of motivational states, six studies identified high task involvement (Chroni et al., 2016; Din et al., 2015; Dixon et al., 2012; Lyons et al., 2012; Mallett, 2005; Pensgaard & Roberts, 2000; Pensgaard & Roberts, 2002). This can be exemplified by Pensgaard and Roberts (2002) who reported that the "athletes perceived a high mastery climate" (p. 56). Five studies described coaches' benevolent values (Chroni et al., 2016; Currie & Oates-Wilding, 2012; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Mallet & Coulter, 2016). Four studies discussed coaches' intrinsic motivation (Chroni et al., 2016; Kimiecik & Gould, 1987; Lyons et al., 2012; Sullivan & Nashman, 1993). Kimiecik and Gould (1987) quoted a coach stating that "we tend to repeat a pleasant experience and avoid an unpleasant experience. Swimming has always been a pleasant experience for me" (p. 352). Three studies (Lyons et al., 2012; Mallett, 2005; Seanor et al., 2017) identified an autonomy supporting motivational style, with Lyons et al. (2012), stating that "the data showed that both the coach and the athletes were primarily oriented towards a self-determined motivational profile and a preference for an autonomy supportive approach to coaching" (p. 367). Finally, one study identified an achievement striving, with Mallett and Coulter (2016) reporting that the coach "strongly seeks to create an achievement-based environment" (p. 118).

Debilitative states. Four studies were identified that discussed states which had a perceived negative impact on performance. State anxiety was reported in two studies (Greenleaf et al., 2001; Jowett, 2003). Greenleaf et al. (2002), for instance, reported one athlete stating that "there was an atmosphere of stress and tension among the staff, coaching staff, and it kind of

permeated the whole atmosphere where all the athletes were living" (p. 174). Threat appraisal

was reported in two studies (Gould et al., 1999; Gould, Guinan, Greenleaf, & Chung, 2002), and

state pessimism, negative attentional bias, and cognitive rigidity were each reported by one study

(Gould et al., 1999). With respect to cognitive rigidity, the authors stated that "the athletes and

coaches were so "locked" into [their] goals that they had difficulty adjusting to better than

expected performance by other teams" (p. 379).

     Non-categorized states. Eleven studies reported states for which there was little

consistency or consensus regarding their perceived impact on performance. Six studies reported

coaches as ego involved (Chroni et al., 2016; Ge et al., 2016; Jowett, 2003; Mallett & Coulter,

2016; Pensgaard & Roberts, 2000; Sullivan & Nashman, 1993), and cognitive flexibility was

identified in four studies without a perceived effect on athlete performance (Chroni et al., 2016;

Gould et al., 1999; Kimiecik & Gould, 1987; Phillippe & Seiler, 2006). Philippe and Seiler

(2006) quoted an athlete stating that their coach: "is a flexible person who is open to change. I

think his laid-back attitude gives him this flexibility" (p. 166), but it was unclear whether this

flexibility had any perceived impact on the athletes' performance. Extrinsic motivation was

identified in three studies (Ge et al., 2016; Mallett & Coulter, 2016; Sullivan & Nashman, 1993),

three studies reported power strivings (Ge et al., 2016; Greenleaf et al., 2001; Mallett & Coulter,

2016), and finally, an external locus of causality was reported in one study (Currie & Oates-

Wilding, 2012, p. 428).

     Behaviors. All 25 studies reported data which referenced coaches' behaviors. Twenty-

five behaviors had a perceived facilitative effect on athlete performance, six a perceived

debilitative effect, and seven a perceived non-categorized effect.

Facilitative behaviors. Behaviors that were perceived to have a positive impact on performance were reported in all 25 studies. In terms of behaviors that promoted feelings of affiliation between the coach and athlete, thirteen studies reported that coaches demonstrated understanding and concern (Currie & Oates-Wilding, 2012; D'Arripe-Longueville et al., 1998; Din et al., 2015; Dixon et al., 2012; Ge et al., 2016; Gould, Guinan, Greenleaf, & Chung, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Kimiecik & Gould, 1987; Olusoga et al., 2012; Pensgaard & Roberts, 2002; Phillippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). This was noted by Philippe and Seiler (2006) who reported coaches "provide a sympathetic ear when needed" (p. 165). Eleven studies reported that coaches provided praise and encouragement (D'Arripe-Longueville et al., 1998; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Jowett & Cockerill, 2003; Kimiecik & Gould, 1987; Lyons et al., 2012; Mallett & Coulter, 2016; Olusoga et al., 2012; Pensgaard & Roberts, 2002; Phillippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). Eight studies identified that coaches demonstrated trustworthy behaviors (Din et al., 2015; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Greenleaf, Chung, & Guinan, 2002; Greenleaf et al., 2001; Jowett, 2003; Jowett & Cockerill, 2003; Trzaskoma-Bicsérdy et al., 2007). Seven studies identified that coaches tailored their communication to athletes (Currie & Oates-Wilding, 2012; Gould et al., 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Kimiecik & Gould, 1987; Olusoga et al., 2012; Pensgaard & Roberts, 2002; Phillippe & Seiler, 2006), with Olusoga et al. (2012) reporting a coach stating that "it's absolutely about tailoring the communication between athlete and the coach in a form that is mutually acceptable to both parties" (p. 233).

Six studies highlighted coaches displaying confident body language (Din et al., 2015; Gould, Guinan, Greenleaf, & Chung, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Olusoga et

al., 2012; Trzaskoma-Bicsérdy et al., 2007). Din et al. (2015), for example, quoted an athlete describing their coach "as portraying confidence in the face of adversity" (p. 596). Six studies identified that coaches made fair and decisive decisions (D'Arripe-Longueville et al., 1998; Din et al., 2015; Gould et al., 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Jowett & Cockerill, 2003; Trzaskoma-Bicsérdy et al., 2007), and five studies reported coaches creating enjoyable training sessions (Din et al., 2015; Dixon et al., 2012; Kimiecik & Gould, 1987; Lyons et al., 2012; Seanor et al., 2017). Three studies described coaches as communicating enthusiasm (Gould et al., 1999; Kimiecik & Gould, 1987; Mallett & Coulter, 2016), and two studies highlighted that coaches explicitly reinforced athlete's self-belief (Kimiecik & Gould, 1987; Mallett and Coulter, 2016). Mallett and Coulter (2016), for example, described the coach prior to the final at the Olympic Games "telling the athlete what they had done to give themselves the opportunity to win" (p. 120).

In terms of behaviors that were aligned with self-determination theory and were autonomy-supporting, eight studies reported that coaches acknowledged the feelings and perspectives of others (Dixon et al., 2012; Ge et al., 2016; Jowett, 2003; Jowett & Cockerill, 2003; Lyons et al., 2012; Mallett, 2005; Phillippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). Ge et al (2016) quoted an athlete stating that "my coach started to ask about my feelings about my injury and even listened to my opinions about techniques…and I think that's one of the reasons I experienced a big performance improvement before the Olympics and won the medal" (p. 5).

Four studies described coaches providing choices to athletes in their training (Lyons et al., 2012; Mallett, 2005; Phillippe & Seiler, 2006; Seanor et al., 2017). Two studies reported that coaches asked facilitative questions (Mallett, 2005; Seanor et al., 2017), with Seanor et al. (2017)

stating that "coaches ask facilitative questions in order to facilitate their development rather than tethering the athlete to the coaches input" (p. 103). Two studies identified coaches providing a rationale for tasks and decision making (Lyons et al., 2012; Mallett, 2005), and one study described the coach providing athletes with opportunities for independent work (Mallett, 2005).

Regarding behaviors relating to planning, and sport-specific and sport-science knowledge, eleven studies identified that coaches created detailed training programs (Chroni et al., 2016; Din et al., 2015; Ge et al., 2016; Gould et al., 1999; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001; Mallett & Coulter, 2016; Phillippe & Seiler, 2006). Three studies described the creation of detailed plans for the Olympic Games (Chroni et al., 2016; Gould et al., 1999; Mallett & Coulter, 2016). Seven studies reported that coaches actively taught psychological skills to athletes (D'Arripe-Longueville et al., 1998; Dixon et al., 2012; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001; Kimiecik & Gould, 1987), with Gould et al. (2001) stating that the specified coach "developed and implemented a sound physical and mental preparation program" (p. 168). Six studies reported that coaches demonstrated knowledge of the sport (Currie & Oates-Wilding, 2012; Dixon et al., 2012; Gould et al., 1999; Gould, Greenleaf, Chung, & Guinan, 2002; Lyons et al., 2012; Phillippe & Seiler, 2006), and three studies described coaches leading and/or monitoring sport science support (Din et al., 2015; Dixon et al., 2012; Seanor et al., 2017). Dixon et al. (2012) suggested that "whilst the coach leads and monitors that provision of sport science support, [coach's name] recognizes the importance of expertise…and encourages practitioners to use their own initiative" (p. 356).

In terms of feedback, evaluation-focus, and coping behaviors, ten studies discussed the provision of corrective feedback (D'Arripe-Longueville et al., 1998; Din et al., 2015; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Lyons et al., 2012; Mallett, 2005; Pensgaard & Roberts, 2002; Phillippe & Seiler, 2006), and three studies reported that coaches provided positive feedback (Gould, Guinan, Greenleaf, & Chung, 2002; Kimiecik & Gould, 1987; Lyons et al., 2012). Gould, Dieffenbach, and Moffett (2002), for example, stated that "coaches provided positive and helpful feedback and critiques that helped guide athletes' development as well as provided positive growing environments and opportunities" (p. 193). Eight studies reported that coaches set realistic expectations and goals which served to strengthen motivation (Gould et al., 2001; Gould, Dieffenbach, & Moffett, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Kimiecik & Gould, 1987; Olusoga et al., 2012; Phillippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). One study reported that the coach emphasized process goals, with Dixon et al. (2012) highlighting that "maintaining a process focus in a results-driven environment reflects not only persistency, but a high degree of coaching expertize" (p. 357). One study reported that the coaches evaluated athletes on their personal development (Pensgaard & Roberts, 2000), and finally, two studies highlighted coaches' utilization of problem-focused coping strategies, such as planning (Chroni et al., 2016; Olusoga et al., 2012).

Debilitative behaviors. Nine studies reported behaviors that had a perceived negative impact on performance. Four studies identified that coaches were unfocused, which became particularly pronounced and debilitating for athletes at the Olympic Games (Gould et al., 1999; Gould et al., 2001; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001). Three studies reported visible stress amongst coaches which caused difficulties at the Olympic Games (Gould

et al., 1999; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001), and three studies highlighted coaches displaying uncaring behaviors (D'Arripe-Longueville et al., 1998; Jowett, 2003; Jowett & Cockerill, 2003). To illustrate, Jowett and Cockerill (2003) quoted an athlete stating that they had worked with a "coach who couldn't care less for you… [He] did not explicitly express an interest in me personally, nor in my training sessions…the worst of all I felt I was being used by him" (p. 321). Three studies (D'Arripe-Longueville et al., 1998; Ge et al., 2016; Jowett, 2003) highlighted that coaches ignored athletes' feelings or perspectives. Three studies identified that coaches demonstrated a lack of sport knowledge which reduced the trust required between coach and athlete (Gould et al., 1999; Greenleaf et al., 2001; Jowett & Cockerill, 2003). Jowett and Cockerill (2003) quoted an athlete stating that "at times I felt that I knew much more than the coach about the sport…I felt that the training plan was not always the best. So there were times where I could sense his weaknesses" (pp. 324-325). Finally, one paper reported coaches setting unrealistic expectations and goals, with Gould, Greenleaf, Chung and Guinan (2002) stating that "athletes indicated that their coach had unrealistic expectations for athletes' performance and felt this negatively affected their performance" (p. 180).

   Non-categorized behaviors. Ten studies reported behaviors of which there is little consensus or consistency regarding their perceived effect on performance outcomes. Five studies highlighted that coaches evaluated athletes on their relative standing to others (D'Arripe-Longueville et al., 1998; Ge et al., 2016; Jowett, 2003; Pensgaard & Roberts, 2000; Seanor et al., 2017). The following two quotes provide an example of how this behavior was interpreted as either facilitative or debilitative. Jowett (2003) quoted an athlete stating that "I have come to believe that [my coach] does things just to annoy me, to create problems; for example, he compares me with other athletes in a degrading way" (p. 449), and Seanor et al. (2017) stated

that "the degree of difficulty wall has the names and difficulties of every national level routine performed. The wall helps to keep current athletes motivated and focused on their development" (p. 102).

In terms of leaderships style, four studies (D'Arripe-Longueville et al., 1998; Ge et al., 2016; Jowett, 2003; Trzaskoma-Bicsérdy et al., 2007) reported an "authoritarian" (D'Arripe-Longueville et al., 1998p. 321) leadership style, and one study identified both "liberal" (Trzaskoma-Bicsérdy et al., 2007, p. 492) and "democratic" (Trzaskoma-Bicsérdy et al., 2007, p. 492) leadership styles. Moving to coping behaviors, three studies highlighted that coaches utilized emotion-focused coping strategies (Gould et al., 2001; Olusoga et al., 2012; Sullivan & Nashman, 1993). Two studies reported coaches providing negative feedback, which was not consistently perceived as having either a facilitative or debilitative effect on athlete performance (D'Arripe-Longueville et al., 1998; Kimiecik & Gould, 1987). D'Arripe-Longueviile et al. (1998), for example, stating that the coaches used "aggressive or ironic tones during verbal exchanges, or negative feedback in training or just before competition" (p. 323). Finally, one study reported that coaches created difficulties to build team spirit (D'Arripe-Longueviile et al., 1998).

Discussion

Using meta-integration techniques, this study systematically reviewed research investigating the psychosocial functioning of Olympic coaches and its perceived effect on athlete performance. The convergent thematic analysis identified three themes from the literature, namely traits, states, and behaviors. The theme of traits refers to the Olympic coaches' cognitive, motivational and affective processes which are stable across time and situation, and states are situationally-specific and momentary outcomes of cognitive, motivational, and

affective processes. The final tier of coaches' psychosocial attributes relates to their behaviors, which are socially meaningful overt or observable actions.

Olympic coaching research is both multi-paradigmatic and multi-disciplinary, containing an array of related concepts. The multi-disciplinary nature means that many of the concepts originate from different knowledge bases, such as psychology or sociology. Despite the inherent strength this brings, the fragmentation hinders the different streams from communicating effectively with each other and impedes the research. This lack of consistent conceptualization across the studies and lack of common language made the findings difficult to synthesize and interpret. There was also a general emphasis on 'bright' characteristics of Olympic coaches that describe their socially desirable attributes (cf. Judge et al., 2009), and this may paint an unrealistic and somewhat simplistic picture of Olympic coaching. Indeed, there has been a recent shift within the related field of organizational leadership towards understanding the full spectrum of leaders' attributes including 'dark' characteristics and the primarily derailing, although sometimes advantageous, effects of these on organizational outcomes (e.g. Furnham, Trickey, & Hyde, 2012; Harms & Spain, 2015; Judge et al., 2009). Dark characteristics represent an individual's socially undesirable attributes (Hogan & Hogan, 2001), and it has been suggested that research examining these characteristics would create practically meaningful knowledge within sport (Arnold, Fletcher, & Hobson, 2018; Cruickshank & Collins, 2016, 2017; Fletcher & Arnold, 2011).

Traits

Eighteen traits were identified across the studies. Traits were the least examined characteristics across the research, which is surprising given the intuitive belief that personality traits predict behavior (Laborde, Allen, Katschak, Mattonet, & Lachner, 2019; Roberts, Hill, & Davis, 2017). There was a narrow focus on specific traits and lack of apparent empirical

progression beyond these attributes. Conscientiousness was perceived to have a positive

relationship with athlete performance because it confers a tendency to be controlled, persistent,

and industrious (John, Naumann, & Soto, 2008; MacCann, Duckworth, & Roberts, 2009). It was

suggested that coaches who are responsible, organized, and willing to work hard are likely to

cope well, and even thrive, with the demanding and often relentless requirements of Olympic

sport. The research also highlighted characteristics of positive, committed, and focused

individuals. It is surprising that only Mallett and Coulter (2016) utilized the Big Five theory to

understand coaches' personality traits. This contrasts with research from the related field of

organizational leadership, where a substantial literature base has been built demonstrating the

relationship between the Big Five traits and leadership emergence and effectiveness, with many

meta-analyses demonstrating the strength of these relationships (e.g. Judge, Bono, Ilies, &

Gerhardt, 2002; Judge et al., 2009).

States

Twenty-eight states were highlighted across the literature. Much of the research

regarding states has highlighted coaches' other-efficacy and coaching-efficacy. Both of these

were perceived to enhance athlete outcomes by improving the coach-athlete relationship and

increasing commitment, effort, and perseverance when faced with difficulty. There was a

noticeable trend towards identifying whether coaches were task- or ego-involved, which reflects

the importance that the wider sport psychology literature has placed upon these constructs (e.g.

Harwood, Keegan, Smith, & Raine, 2015). As ego-involvement was perceived to have a non-

categorized effect on performance outcomes, further work is required to explore this construct

and fully understand the effects on Olympic-level athletes. Few of the studies examined the

context and the situational-cues which activated the coach's states. This is an important

omission from the literature as there may be certain environmental factors which trigger specific

states, and this knowledge is required if researchers pursue intervention studies. Taken together,

many of the states identified in the literature were replicated across a number of studies, thus

progressing knowledge and providing a platform for future research.

Behaviors

Thirty-eight behaviors were identified across the studies, and research examining coach

behaviors represented the largest body of work across the studies. There was a significant trend

towards identifying the behaviors which underpinned the coach-athlete relationship, particularly

coaches' demonstrating understanding and concern towards athletes, and providing praise and

encouragement. It was suggested that coaches' expressions of warmth were perceived as signals

of affiliation, promoting psychological safety and enhancing athletes' willingness to openly share

information, which facilitated performance outcomes. There was a trend towards investigating

coaches use of autonomy supporting behaviors, which were suggested to facilitate Olympic

athlete's motivation, performance, and well-being. However, there was limited discussion of the

context in which specific coaching behaviors occurred. It is important that future research gives

more space to explaining and examining the context so that the findings can be, where

appropriate, generalized or transferred. It was surprising that none of the studies used systematic

observation of coaches given that these methods represent one of the most common forms of

research within coaching as a whole (Cope, Partington, & Harvey, 2017).

Methods

The vast majority of the studies utilized a qualitative design, with semi-structured

interviews being the most used data collection method. Although this methodology provides

many insights and nuances, there would be a benefit in more studies employing quantitative or

mixed methods designs to create testable hypotheses and measure theoretically relevant constructs with validated instruments. The studies examined psychosocial functioning of Olympic coaches from both athlete and coach perspectives. This is encouraging as coaches self-reported perceptions of their own characteristics and performance provides an insight into their internal world, and athlete observer-reports represent an additional and important source of information about coaches' behaviors and reputations. Surprisingly, there was limited use of longitudinal studies, and greater use of this design would facilitate an understanding of the relationship between coaches' characteristics and performance outcomes. There was also a lack of research which used comparative designs. This is an important point for future researchers to address so that a greater understanding of which factors may discriminate between more or less successful Olympic coaches can begin to be developed. Finally, the majority of studies provided a limited description of coaches' characteristics, such as the sport coached, their age, or years of coaching experience. This limits the ability to determine whether coaching experience has a facilitative effect on athlete performance, and whether this may be more or less influential in specific sports. It also restricts the ability of future studies to replicate these findings. Recently, the need to replicate studies has attracted considerable attention within the field of psychology (Maxwell, Lau, & Howard, 2015), and it is important that future research within coaching reports the participant characteristics (whilst maintaining anonymity) so that we can begin to understand whether patterns within the data are just noise or whether they reflect a deeper meaning.

Limitations of This Review

This was the first review to systematically synthesize and evaluate the research relating to psychosocial functioning of Olympic coaches, and allows a growing body of literature to become more easily accessible. It has provided original information regarding research trends which

may not be apparent from any individual study, and provides inferences and conclusions based on the collation of these findings. However, there are some limitations which require consideration when interpreting the results. The number of studies per finding is not meant to indicate the relative importance of any trait, state, or behavior, and researchers could adopt methods that focus on exploring the meaning behind the numbers, recognizing that frequency does not imply meaning. Further, the focus of the studies was rarely to specifically investigate coaches' psychosocial functioning through the lens of established constructs or theories. This meant that some of the results were translated into psychosocial terminology, for example findings which highlighted a coach's consistent worries across contexts were interpreted as trait anxiety. This review did not employ a comparison group as the purpose was to examine the Olympic coaching literature, and so it is unclear whether the psychosocial characteristics outlined in this review are different from the characteristics exhibited by coaches from other levels of sport. It would be interesting to understand whether certain characteristics are particularly salient at certain standards of competition, as each level of sport has its own set of internal and external pressures. The review was limited to English language journal articles, meaning that information from non-English language studies may have been missed, and therefore these findings may not reflect the global body of coaching research.

Future Research Directions

There are a number of avenues that would benefit from further exploration. Personality traits do not exist within a vacuum, instead they function collectively with other personality subsystems to enable the expression of psychological individuality (Coulter, Mallett, Singer, & Gucciardi, 2016; Roberts & Woodman, 2017). Rather than examining traits in isolation, multi-variate designs would be a useful next step towards understanding the role of theoretically

relevant constructs in Olympic coaching. This research would not only facilitate an understanding of the relative importance of each trait, but also how they interact together to produce behavioral and performance outcomes. The complexity of coaching lends itself to diverse study designs, and using both quantitative and qualitative methods would enrich our understanding of psychosocial functioning of Olympic coaches. Indeed, different qualitative methodologies, such as ethnographic or narrative research, would help to further develop our understanding of who these coaches are, what they do, why they do it, and what drives their behavior (Denzin & Lincoln, 2011; Sparkes & Smith, 2014). In addition, examining other influencing factors, such as the environmental, social, cultural, and organizational aspects, would help to develop a broader understanding of the complexities. It is also important that future research examines whether there are any psychosocial factors which discriminate between coaches whose athletes have produced different performance outcomes in Olympic competition. There may, for example, be discriminating characteristics between coaches who have coached athletes to win Olympic gold medals and those whose athletes have reached the Olympic Games but not won a gold medal, or between coaches whose athletes have achieved an Olympic podium or non-podium finish. Studies using these comparator groups would then be able to develop an understanding of the unique factors which may discriminate these gold-medal winning or podium Olympic coaches, rather than the existing research which compares all Olympic coaches as a single cohort with non-Olympic coaches. This would develop the empirical research base and help to determine the factors which may be advantageous towards coaching an athlete to win an Olympic gold, silver or bronze medal.

Implications for Practice

Several applied implications arise from the findings. The results provide coach educators, National Governing Bodies, and applied sport psychologists with an outline of the characteristics which may be important for Olympic coaches to develop. Applied sport psychologists often monitor individuals across training and competitions in order to strengthen their existing facilitative skillsets and identify maladaptive patterns which may require intervention. Identifying the characteristics which are likely to have a debilitative effect on coaches' performance is important for applied sport psychologists, and recent research has demonstrated that many characteristics, including traits, are modifiable through evidence-based interventions (see Roberts & Woodman, 2017). Studies within this review emphasized the importance of coaches' conscientiousness, coaching-efficacy, and the role of the coach-athlete relationship for positive athlete performance outcomes. It is important that coach educators and National Governing Bodies integrate these findings into their coach development programs to enhance coaches' practice.

Concluding Remarks

This is the first synthesis of all the relevant, published evidence on psychosocial functioning of Olympic coaches and its perceived effect on athlete performance. It highlights what the research has found to be facilitative, debilitative, or non-categorized, and this can be used proactively by relevant stakeholders. The identified limitations of the existing research provide directions for future work to further enrich our understanding of Olympic coaching, and so enhance coach development programs and performance outcomes.

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Table 1

Summary of Studies Included in the Review

Author(s)	Purpose	Participants	Sport(s)	Design	Data collection	Main findings
Chroni, Abrahamsen, and Hemmestad (2016)	Explore stress experiences of coaches	$N = 7$ (7 males), age range of coaches = 28-53 years, coaching experience range = 4-30 years, type of participants = coaches, Olympic standard = not reported, country represented = Norway	Not reported	Qualitative	Semi-structured interviews	The findings indicated that coaches evaluated stressors as manageable (i.e. challenge appraisal) due to their positive response outcome expectancies and their specific defense mechanisms. Further, coaches were found to have both high ego and task orientations, cognitive flexibility, coaching-efficacy, and trait self-confidence.
Currie and Oates-Wilding (2012)	Investigate the factors that contribute towards coaching success and goal fulfilment	$N = 8$ (8 males), age range of coaches = not reported, mean years of coaching experience = 15 years, type of participants = coaches, Olympic	Beach volleyball, fencing, modern pentathlon, water polo, kayaking, and volleyball	Qualitative	Unstructured conversations	Coaches identified passion, commitment, desire to succeed, past athletic experience, and focusing on individual athlete's needs as integral factors contributing to their success.

		standard = not reported, country represented = Not reported				
D'Arripe-Longueville, Fournier, and Dubois (1998)	Investigate perceptions of effective coach-athlete interactions	N = 9 (3 males, 6 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches and athletes, Olympic standard = not reported, country represented = France	Judo	Qualitative	Semi-structured interviews	Coaches and athletes perceived the coaches' main interaction style as authoritative. This leadership style was operationalized using strategies and behaviors including: stimulating interpersonal rivalry, displaying indifference to athlete's needs, displaying favoritism, and developing specific team cohesion.
Din, Paskevich, Gabriele, and Werthner (2015)	Develop a detailed description of leadership in Olympic medal-winning sport	N = 22 (13 males, 9 females), age range of coaches = 39-68 years, mean years of coaching experience = not reported,	Not reported	Qualitative	Semi-structured interviews	Coaches' leadership was described as demanding (i.e. directive coach behavior, and decisive decision making), relational (i.e. the coach-athlete relationship was characterized by trust and respect, teaching, and role modeling) and solution

		type of participants = coaches and athletes, Olympic standard = medalist, country represented = Canada				focused leadership (i.e. vision, structured learning culture, role clarity and recognition, and analytic tenacity).
Dixon, Lee, and Ghaye (2012)	Explore how a specific Olympic diving coach operates in a high-performance environment, his background, and coaching philosophy	$N = 1$ (1 male), age of coach = not reported, mean years of coaching experience = not reported, type of participants = coach, Olympic standard = not reported, country represented = United Kingdom	Diving	Qualitative	Reflexive conversation	The findings identified that the coach defined achievement as helping individuals achieve their personal best, utilized an athlete-centered, empowering, and understanding approach, and inspired athletes through positivity and persistence.
Ge et al. (2016)	Understand the impact of the socio-cultural environment on Chinese Olympic athletes	$N = 2$ (2 males), age range of coaches = not reported, mean years of coaching experience = not reported,	Trampoline	Qualitative	Discussion and co-authorship with two trampoline Olympic champions	Within their environment, the Olympic athletes perceived medal-oriented pressure, and discussed the difficulties associated with their growing needs for autonomy.

		type of participants = athletes, Olympic standard = gold medalists, country represented = China				
Gould, Dieffenbach, and Moffett (2002)	Examine psychological characteristics and their development in Olympic champions	N = 30 (15 males, 15 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches, athletes, parents, siblings, and significant others, Olympic standard = gold medalists, country represented = United States of America	Skiing, wrestling, swimming, ice hockey, speed skating, and track and field	Mixed methods	Questionnaires (i.e. The Sport Anxiety Scale (Smith et al., 1990), Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990), Revised Life Orientation Test (Scheier et al., 1994), The Adult Trait Hope Scale (Snyder et al., 1999; Snyder et al., 1991), Task Ego Orientation Scale Questionnaire (Duda, 1989), The Test of Performance	The findings indicated that coaches influenced athletes' psychological attributes by providing encouragement and unconditional support, setting expectations, meeting individual needs, being optimistic, trustworthy, and displaying confidence in athletes.

					Strategies (Thomas et al., 1999), and The Athletic Coping Skills Inventory (Smith et al., 1995) and semi-structured interviews	
Gould, Greenleaf, Guinan, Dieffenbach, and McCann (2001)	Examine performance related lessons from Summer and Winter Olympic Games	N = 444 (not reported), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches and athletes, Olympic standard = not reported, country represented = United States of America	Not reported	Mixed methods	Questionnaires (i.e. Atlanta survey, and Nagano survey) and individual and focus group interviews	Coaches and athletes identified many lessons for the future, including the importance of trust and team cohesion, detailed planning, enhanced fun and enjoyment during trials, and coach mental preparation strategies centering around coaching-efficacy and coping.
Gould, Greenleaf, Chung, and	Examine the variables perceived to have affected U.S.	N = 379 (293 males, 86 females),	Not reported	Quantitative	Surveys (i.e. USOC Atlanta Olympic Coach Survey, and	The performance influencing variables included positive coach-athlete relationships,

Guinan (2002)	Olympic athlete performance	age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = not reported, country represented = United States of America			USOC Nagano Olympic Coach Survey)	coaches' ability to withstand pressure and crises, and coaches' expectations.
Gould, Guinan, Greenleaf, and Chung (2002)	Examine variables perceived to have influenced athlete performance and coach effectiveness in Olympic competition	N = 65 (53 males, 12 females), age range of coaches = 28-65 years, mean years of coaching experience = 17.29 years, type of participants = coaches, Olympic standard = not reported, country	Not reported	Quantitative	Surveys (i.e. U.S. Atlanta Olympic Games Athlete Survey, and U.S. Olympic Games Nagano Athlete Survey)	Variables perceived to have positively influenced athlete's performance included coaches' consistency of behavior, coping, setting realistic expectations, making fair but decisive decisions, and being trustworthy.

		represented = United States of America				
Gould, Guinan, Greenleaf, Medbery, and Peterson (1999)	Examine whether mental skills and strategies, as well as physical, social, and environmental factors affect Olympic performance	N = 33 (18 males, 15 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches and athletes, Olympic standard = gold medalists, medalists, and non-medalists, country represented = United States of America	Not reported	Qualitative	Individual and focus group interviews	Coaches and athletes that did not meet their performance expectations identified planning and team cohesion concerns, and coaching problems including poor communication, limited coaching credibility, threat appraisal, and an unfocused demeanor. Coaches and athletes that met or exceeded performance expectations indicated that coaches' attributes included detailed planning, contentiousness, and knowledge of the sport.
Greenleaf, Gould, and Dieffenbach (2001)	Investigate the factors perceived to influence Olympic athlete performance	N = 15 (4 males, 11 females), age range of coaches = not reported, mean years of coaching experience = not	Not reported	Qualitative	Interviews	Coaching-specific positive performance influences included being trustworthy, creating detailed plans, providing specific feedback, teaching psychological skills, and

		reported, type of participants = athletes, Olympic standard = not reported, country represented = United States of America				clarifying athlete roles. Negative coach-specific performance influences included valuing power, being unfocused, lacking emotional regulation, relaying inaccurate technical information, trait anxiety, threat appraisal, and neuroticism.
Jowett (2003)	Examine the nature of a coach-athlete dyad that experiences interpersonal conflict	$N = 2$ (1 male, 1 female), age of coach = not reported, years of coaching experience = 12 years, type of participants = coach and athlete, Olympic standard = silver medalist, country represented = Not reported	Not reported	Qualitative	Structured interviews	The findings revealed coach-specific themes relating to closeness (e.g. setting goals, showing commitment, trait self-confidence, coaching-efficacy, domineering, evaluating athlete on relative standing to others), co-orientation (e.g. acknowledging athlete's feelings and opinions, trait anxiety, state anxiety, ego involved, and ego oriented) and complementarity (e.g. uncaring, inattentive, and lack of emotional support).
Jowett and Cockerill (2003)	Investigate the nature of the athlete–coach relationship	$N = 12$ (9 males, 3 females), age range of coaches = not reported,	Gymnastics, sailing, swimming, track and	Qualitative	Structured interviews	Results identified coach-athlete dyad feelings of closeness (i.e. intimacy, trust, liking, respect,

		mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = medalist, country represented = Brazil, Greece, Estonia, Latvia, Mexico, Russia, Spain, United States of America	field athletics, and wrestling			belief, and commitment), co-orientation (i.e. information exchange, common goals, and influence) and complementarity (i.e. roles and tasks, and support).
Kimiecik and Gould (1993)	Explore a specific coach's perceived behaviors	$N = 1$ (1 male), age of coach = 66 years, years of coaching experience = 42 years, type of participant = coach, Olympic standard = gold medalist, country represented = United States of America	Swimming	Qualitative	Interview	Findings revealed that the coach communicated enthusiasm, showed concern and understanding, demonstrated state and trait emotional intelligence, tailored communication to athletes, set realistic goals, showed cognitive flexibility, provided positive and negative feedback, reinforced athlete's self-belief, and was intrinsically motivated.

Lyons, Rynee, and Mallett (2012)	Examine coach-athlete interactions, with a particular interest in the implementation of autonomy supportive coaching behaviors	$N = 4$ (1 male, 3 females), age of coach = not reported, mean years of coaching experience = 17 years, type of participants = coach and athletes, Olympic standard = not reported, country represented = Not reported	Olympic ski cross	Qualitative	Semi-structured interviews	Within their environment, coaches and athletes identified the presence of autonomy-supportive coaching behaviors, the coach's autonomy supporting motivational style, both coach and athlete preferences for autonomy supporting behaviors, and the importance of the psychological need of relatedness.
Mallett (2005)	Reports on the application of self-determination theory to coaching elite athletes	$N = 1$ (1 male), age of coach = not reported, mean years of coaching experience = not reported, type of participants = coach, Olympic standard = finalist, country represented = Australia	Track and field athletics	Qualitative	Case study	Findings revealed that the participant coach's task orientation and autonomy supporting behaviors promoted an adaptive and enjoyable training environment, which was proposed to optimize athletes' performances.
Mallett and Coulter (2016)	Examine the personality (i.e. dispositional	$N = 1$ (1 male), age of coach = not reported,	Not reported	Mixed methods	Questionnaires (i.e. NEO-FFI-3, self report (Costa	Results demonstrated that the coach was emotionally stable, agreeable,

	traits, personal strivings, and narrative identify) of a successful Olympic coach	mean years of coaching experience = 30 years, type of participant = coach, Olympic standard = multiple medalist, country represented = Not reported			& McRae, 2010) and Personal Strivings (Emmons, 1989)) and semi-structured interview	conscientious, open to new experiences, optimistic, passionate, task and ego oriented, extrinsically motivated, utilized emotion-focused coping, reinforced athlete self-belief, demonstrated other-efficacy, hardy, emotional intelligent, aimed to help and develop others, and strived for power and achievement.
Olusoga, Maynard, Hays, and Butt (2012)	Explored Olympic coaches' perceptions of the factors that enabled them to coach successfully in a stressful Olympic environment	N = 8 (8 males), age range of coaches = 33-53 years, mean years of coaching experience = 13.1 years, type of participants = coaches, Olympic standard = not reported, country represented = United Kingdom	Not reported	Qualitative	Semi-structured interviews	Coaches reported that psychological attributes (i.e. emotional control, perception, confidence, athlete focus, communication, focus, passion, support, commitment, consistency, and fun), preparation (i.e. strategic approach, lifestyle choices, previous experience, contingency planning, team preparation, and athlete preparation), and coping (i.e. coach-specific strategies, team support, taking time out, drinking, and psychological skills) were essential for their

						own successful Olympic performance
Pensgaard and Roberts (2000)	Examine athlete perceptions of distress, with particular attention paid to the relative importance of dispositional and situational factors	N = 69 (49 males, 20 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = not reported, country represented = Norway	Not reported	Quantitative	Questionnaires (i.e. Perceived Motivational Climate in Sport Questionnaire (Seifriz et al., 1992), Perception of Success Questionnaire (Ommundsen & Roberts, 1996; Roberts et al., 1998), Sources of Distress Questionnaire (based on Scanlan et al., 1991; Perception of Ability (based on Nicholls et al., 1990).	Findings revealed the presence of both performance and mastery climates, indicating coaches possessed both task and ego orientations. Performance climates were associated with athlete cognitive stress, and the coach was perceived to be one source of this stress.
Pensgaard and Roberts (2002)	Understand the importance of a mastery climate and the role of the coach in creating the climate	N = 7 (5 males, 2 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes,	Not reported	Mixed methods	Questionnaires (i.e. Perception of Success Questionnaire (Roberts et al., 1998) and Perception of Motivational Climate Questionnaire	Athletes reported a high mastery climate and low performance climate. Further, they stated a preference for a supportive and caring climate which coaches were instrumental in creating. Coaches demonstrated emotional intelligence and

		Olympic standard = not reported, country represented = Norway			(Seifriz et al., 1992), and structured interviews	understanding, tailored their communication to athletes, utilized corrective feedback, provided praise/encouragement, and were task oriented.
Phillippe and Seiler (2006)	Study athletes' perceptions of the quality of their relationships with their coaches	$N = 5$ (5 males), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = not reported, country represented = Switzerland	Swimming	Qualitative	Structured interviews	Athletes reported that maintaining a good relationship with their coach was a priority, and the elements of an effective coach-athlete relationship were as follows: closeness (i.e. respect, esteem, admiration, appreciation, professional relationship, friendship, and love), co-orientation (i.e. technical communication, savoir-être, verbal interchange, problem resolution, common goals, and respect the goals set), and complementarity (i.e. seeing the positive side, using the differences, assuming responsibilities, and respecting the task).
Seanor, Schinke, Stamulova, Ross, and	Investigate how athletes' training environments influence their	$N = 3$ (2 males, 1 female), age range of coaches = not reported,	Trampoline	Qualitative	Mobile conversational interview	Results revealed coaches displayed an autonomy supporting motivational style, provided choice to

Kpazai (2017)	subsequent Olympic accomplishments	mean years of coaching experience = not reported, type of participants = coach, assistant coach, and athlete, Olympic standard = medalist, country represented = Canada				athletes, asked facilitative questions, monitored sport science support, and created an enjoyable training environment.
Sullivan and Nashman (1993)	Examine Olympic coaches' perceptions of job-related satisfactions and stressors	N = 10 (9 males, 1 female), age range of coaches = 35-65 years, mean years of coaching experience = not reported, type of participants = coaches, Olympic standard = not reported, country represented = United States of America	Water polo, bobsleigh, volleyball, baseball, soccer, basketball, ice hockey, and handball	Qualitative	Structured interview	Findings described coaches as exhibiting stress-induced behaviors, and under-utilizing stress-reduction techniques.

Trzaskoma-Bicsérdy, Bognár, Révéz, and Géczi (2007)	Examine successful coach-athlete relationships	*N* = 5 (5 males), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches and athletes, Olympic standard = medalist, country represented = Hungary	Kayaking, swimming, and wrestling	Qualitative	Semi-structured interviews	Results identified that successful coach-athlete relationships were primarily contingent upon the coach tailoring their approach to the specific needs of the athlete.

Table 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 how findings relate to the context, e.g., the setting, in which the data were collected?	2.3. Are there complete outcome data (80% or above)?	3.3. In the groups being compared (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?	4.3. Are measurements appropriate (clear origin, or validity known, or standard instrument)?	5.3. Is appropriate consideration given to the 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)?	-

Table 3
Studies Included in the Review Scored Against MMAT Criteria

Author(s)	Screening questions		Qualitative				Quantitative				Mixed methods			Overall quality score	Quality percentage score
	A	B	1.1	1.2	1.3	1.4	4.1	4.2	4.3	4.4	5.1	5.2	5.3		
Chroni et al. (2016)	1	1	1	1	1	1	-	-	-	-	-	-	-	4	100
Currie and Oates-Wilding (2012)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
D'Arripe-Longueville et al. (1998)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Din et al. (2015)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Dixon et al. (2012)	0	0	1	0	1	0	-	-	-	-	-	-	-	2	50
Ge et al. (2016)	1	1	1	0	1	1	-	-	-	-	-	-	-	3	75
Gould et al. (1999)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Gould et al. (2001)	1	1	-	-	-	-	1	1	0	0	-	-	-	2	50
Gould, Dieffenbach, and Moffett (2002)	1	1	-	-	-	-	-	-	-	-	1	1	0	2	75
Gould, Greenleaf, Chung, and Guinan (2002)	1	1	-	-	-	-	-	-	-	-	1	1	0	2	75
Gould, Guinan, Greenleaf, and Chung (2002)	1	1	-	-	-	-	1	1	0	0	-	-	-	2	50
Greenleaf et al. (2001)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total	%
Jowett (2003)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Jowett and Cockerill (2003)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Kimiecik and Gould (1987)	1	1	1	0	0	0	-	-	-	-	-	-	-	1	25
Lyons et al. (2012)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Mallett (2005)	1	1	1	0	1	1	-	-	-	-	-	-	-	3	75
Mallett and Coulter (2016)	1	1	-	-	-	-	-	-	-	-	1	1	0	2	75
Olusoga et al. (2012)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Pensgaard and Roberts (2000)	1	1	-	-	-	-	1	1	1	1	-	-	-	4	100
Pensgaard and Roberts (2002)	1	1	-	-	-	-	-	-	-	-	1	1	0	2	75
Phillippe and Seiler (2006)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Seanor et al. (2017)	1	1	1	1	1	1	-	-	-	-	-	-	-	4	100
Sullivan and Nasham (1993)	1	1	1	0	1	0	-	-	-	-	-	-	-	2	50
Trzaskoma-Bicsérdy et al. (2007)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75
Percentage of studies that met relevant criteria	96	96	100	72	94	22	100	100	33	33	100	100	0		

Note. 1 = Yes; 0 = No or insufficient information provided in the study; - = Criteria not relevant to the study.

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Identification  │ Records after duplicates removed │
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Screening       │ Titles screened for eligibility│─────▶│ Records excluded    │
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Eligibility     │ Full-text articles assessed for│────▶│ Full-text articles      │
                │ eligibility                    │      │ excluded (n = 10)       │
                │ (n = 35)                       │      │                         │
                └──────────────────────────────┘      │ Rationale for           │
                            │                          │ exclusion:              │
                            │                          │ • Type of               │
                            │                          │ participants            │
                            │                          │ (n = 9)                 │
                            │                          │ • Empirical data not    │
                            │                          │ related to              │
                            │                          │ psychosocial            │
                            │                          │ functioning of          │
                            │                          │ Olympic coaches         │
                            │                          │ (n = 1)                 │
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Included        │ Articles included in systematic│
                │ review (n = 25)                │
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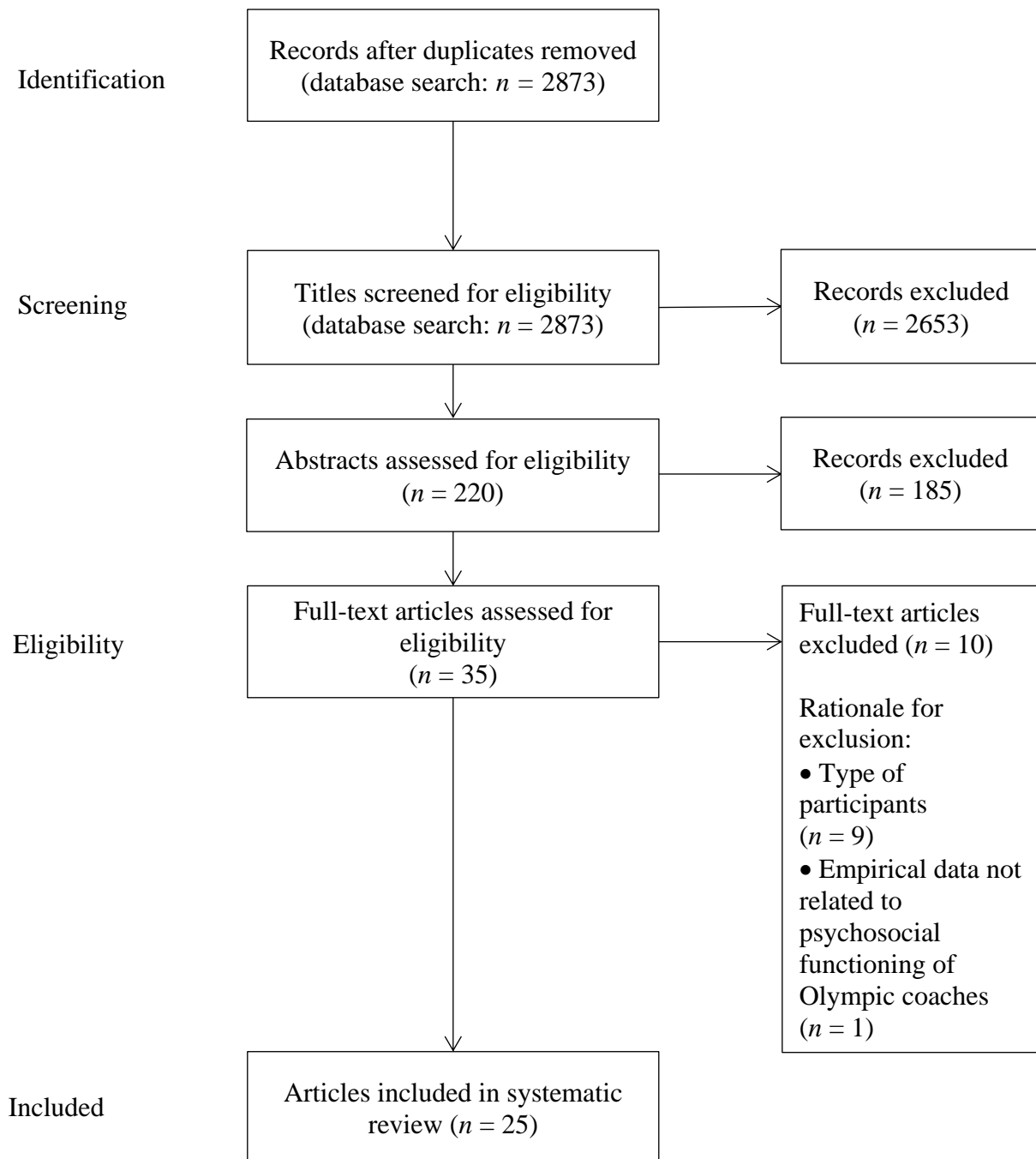
Figure 1. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart. *N* number of papers.

Behaviors

Demonstrate understanding and concern + [2, 3, 4, 5, 6, 11, 13, 14, 15, 19, 21, 22, 25]
Trustworthy + [4, 9, 11, 10, 12, 13, 14, 25]
Confident body language + [4, 11, 13, 14, 19, 25]
Create enjoyable training sessions + [4, 5, 15, 16, 23]
Reinforce athletes' self-belief + [15, 18]
Acknowledge the feelings and perspectives of others + [5, 6, 13, 14, 16, 17, 22, 25]
Provide choice to athletes' in training + [16, 17, 22, 23]
Provide a rationale for tasks and decision making + [16, 17]
Create detailed training programs + [1, 4, 6, 7, 8, 9, 10, 11, 12, 18, 22]
Teach psychological skills + [3, 5, 7, 9, 11, 12, 15]
Lead and/or monitor sport science support + [4, 5, 23]
Provide positive feedback + [11, 15, 16]
Emphasize process goals + [5]
Problem-focused coping strategies (e.g. planning) + [1, 19]
Visibly stressed at Olympic Games - [7, 8, 12]
Ignore athletes' feelings and perspectives - [3, 6, 13]
Set unrealistic expectations and goals - [10]
Authoritarian leadership style +/- [3, 6, 13, 25]
Democratic leadership style +/- [25]
Provide negative feedback +/- [3, 15]

Provide praise and encouragement + [3, 5, 11, 14, 15, 16, 18, 19, 21, 22, 25]
Tailor communication to athlete + [2, 9, 10, 15, 19, 21, 22]
Make fair and decisive decisions + [3, 4, 9, 10, 14, 25]
Communicate enthusiasm + [8, 15, 18]

Ask athletes' facilitative questions + [17, 23]
Provide athletes' with opportunities for independent work + [17]
Create detailed plans for Olympic Games + [1, 8, 18]
Demonstrate knowledge of sport + [2, 5, 8, 10, 16, 22]
Provide corrective feedback + [3, 4, 5, 11, 13, 14, 16, 17, 21, 22]
Set realistic expectations and goals + [7, 9, 13, 14, 15, 19, 22, 25]
Evaluate athletes' on personal development + [20]
Unfocused - [7, 8, 9, 12]
Uncaring - [3, 13, 14]
Demonstrate lack of sport knowledge - [8, 12, 14]
Evaluate athletes' on relative standing to others +/- [3, 6, 13, 20, 23]
Liberal leadership style +/- [25]
Emotion-focused coping strategies (e.g. socializing) +/- [9, 19, 24]
Create difficulties to build team spirit +/- [3]

States

Other-efficacy + [9, 11, 13, 14, 15, 18, 22, 25]
Learning + [1, 2, 5, 18, 23]
State emotional intelligence + [15, 18, 19, 21]
Resilience + [2]
Autonomy supporting motivational style + [16, 17, 23]
State pessimism - [8]
Cognitive flexibility +/- [1, 8, 15, 22]

Coaching-efficacy + [1, 2, 4, 9, 13, 14, 19]
Attentional control + [1, 7, 8, 10, 19]
Challenge appraisal + [1, 4, 5]
Task involved + [1, 4, 5, 17, 20, 21]
Achievement striving + [18]
Negative attentional bias - [8]
Extrinsic motivation +/- [6, 18, 24]

State self-confidence + [2, 4, 19]
Emotion regulation + [7, 9, 10, 18, 19]
Self-awareness + [9, 19]
Benevolence + [1, 2, 5, 11, 18]
State anxiety - [12, 13]
Cognitive rigidity - [8]
Power striving +/- [6, 12, 18]

State optimism + [4, 5, 11, 18, 22]
Positive attentional bias + [1, 4, 5, 22]
State self-control + [7, 19]
Intrinsic motivation + [1, 15, 16, 24]
Threat appraisal - [7, 8]
Ego involved +/- [1, 6, 13, 18, 20, 24]
External locus of causality +/- [2]

Traits

Conscientiousness + [1, 4, 5, 7, 8, 9, 10, 11, 18, 19, 25]
Task-orientation + [1, 4, 5, 16, 17, 20, 21]
Trait intelligence + [1, 8, 23]
Neuroticism - [12]

Agreeableness + [18]
Trait optimism + [4, 5, 11, 18, 22]
Perfectionism + [1, 8]
Trait pessimism - [8]

Openness + [18]
Passion + [1, 2, 5, 18, 19]
Trait self-control + [19]
Ego-orientation +/- [1, 6, 8, 13, 18, 20]

Moderate extraversion + [18]
Trait emotional intelligence + [15, 18, 19, 21]
Hardiness + [18]

Emotional stability + [18]
Self-esteem + [2, 4, 19]
Trait anxiety - [12, 13]

Figure 2. Psychosocial functioning of Olympic coaches and its perceived effect on athlete performance

Note. + denotes a perceived facilitative trait, state and/or behavior; - denotes a perceived debilitative trait, state and/or behavior; and +/- detonates a perceived non-categorized trait, state and/or behavior.

Reference numbers of studies that present data relating to this trait, state, and/or behavior: 1 = Chroni et al. (2016); 2 = Currie and Oates-Wilding (2012); 3 = D'Arripe-Longueville et al. (1998); 4 = Din et al. (2015); 5 = Dixon et al. (2012); 6 = Ge et al. (2016); 7 = Gould, Dieffenbach, and Moffett (2002); 8 = Gould et al. (1999); 9 = Gould et al. (2001); 10 = Gould, Greenleaf, Chung, and Guinan (2002); 11 = Gould, Guinan, Greenleaf, and Chung (2002); 12 = Greenleaf et al. (2001); 13 = Jowett (2003); 14 = Jowett and Cockerill (2003); 15 = Kimiecik and Gould (1993); 16 = Lyons et al. (2012); 17 = Mallett (2005); 18 = Mallett and Coulter (2016); 19 = Olusoga et al. (2012); 20 = Pensgaard and Roberts (2000); 21 = Pensgaard and Roberts (2002); 22 = Phillippe and Seiler (2006); 23 = Seanor et al. (2017); 24 = Sullivan and Nashman (1993); 25 = Trzaskoma-Bicsérdy et al. (2007).