Performance management: A systematic review of processes in elite sport and other performance domains

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Abstract

Performance management is integral for high-performing organizations and teams. The purpose of this review was to synthesize evidence on performance management across elite sport and other performance-focused domains (business, performing arts, high-risk professions). A systematic search and screening strategy was undertaken. Twenty studies satisfied the inclusion criteria. Thematic synthesis enabled the identification of key components of performance management. Similarities and differences between elite sport and other domains are identified across the following themes: *strategic performance management; operational performance management; individual performance management; and leadership of the performance team.* Implications for practitioners in elite sport are also considered across these themes.

Keywords: expertise, high performance, organizational psychology in sport, Olympic, organizational functioning

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Traditionally, the focus for psychologists in elite sport has centered on providing clinical and performance support services for athletes and coaches. However, practitioners are increasingly required to apply their skills beyond individual-level interactions to wider organizational processes (Fletcher & Wagstaff, 2009). While acknowledging that there is a myriad of factors that directly and indirectly influence performers in elite sport, organizational processes have emerged as a salient area of focus for sport psychologists due to the potential of these processes to influence the behaviors and attitudes of individuals and the wider performance team (Fletcher & Arnold, 2015). Consequently, there is a small but growing body of research examining organizational processes within elite sport (Wagstaff & Larner, 2015).

One such organizational process is performance management which can be defined as "a continuing process of identifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of the organization" (Aguinis, 2013 p.2). Initially, performance management research focused on the individual employee, with researchers and practitioners first concerned with how best to accurately measure the performance of individuals (i.e., performance appraisal), before shifting to focus upon how individual performance could be improved (performance management) (DeNisi & Murphy, 2017). For example, Landy, Barnes, and Murphy (1978) examined employee reactions to performance evaluation whereas, Pritchard, Harrell, Diaz Granados, and Guzman (2008) highlighted how a performance management system that combines feedback, goal setting, and incentives can improve employee performance.

More recently, studies have begun to look beyond the individual employee and to examine performance management at the operational and strategic level of organizations

(Brudan, 2010). Typically, operational performance management is focused on the achievement of group objectives, or how a department is functioning, and involves using performance indicators to guide management or human resource decisions (e.g. staffing, level of supervision), which may result in improvements to efficiency or effectiveness (Brudan, 2010; Pritchard, et al., 2008). Strategic performance management can be defined as a process that steers an organization through development of their vision, strategy, and objectives, making these measurable in order to evaluate performance and inform planning (Brudan, 2010; DeNisi & Murphy, 2017). Performance management now needs to be considered as an approach integrated across individual, operational, and strategic levels in order to have a meaningful effect on the organization (DeNisi & Murphy, 2017). However, there is a lack of research exploring the interaction of these levels and what combination of performance management practices are used. Furthermore, how these practices influence organizational performance will likely depend on additional contextual factors such as the culture of the organization and the leadership function.

Organizational culture can be viewed as the basic assumptions and values that guide life in organizations and is recognized as a key component that can facilitate high performance in business (Balthazard, Cooke, & Potter, 2006) and sport environments (Maitland, Hills & Rhind, 2015). Indeed, Hartnell, Ou, and Kinicki (2011) recently used the competing values framework (CVF) as a lens through which to view the positive relationship between culture and organizational performance. Briefly, the CVF generates four cultural types which are based on a distinct set of competing values. The findings highlighted how organizations scoring higher on certain cultural types were more successful across three organizational effectiveness criteria (i.e., financial performance, operational performance, and employee attitudes). Indeed, the CVF has been used in an elite sport context to explain the link between culture and performance (Jones, Gittins, & Hardy, 2009). Thus, it seems

important that selected performance management practices should align with the desired cultural type of the organization and it is through these interactions that improved organization-level performance is most likely to happen. Leadership is also an important contextual factor guiding performance management processes. To elaborate, effective performance management processes will depend on the ability of the leader to disseminate an organization's vision, clarify expectations, coordinate teams, motivate followers, and consistently recognize good performance behaviors (Reilly & Aronson, 2009). Therefore, it is vital to consider how leadership behaviors may co-occur with organizational processes, such as performance management.

Performance management has emerged as an area of significant interest within elite sport due to its potential for influencing the behaviors and attitudes of personnel working in the "twilight zone" (i.e. the layer that exists between the individual and governance levels of sporting organizations) (Fletcher & Arnold, 2015; Fletcher & Wagstaff, 2009). Currently there are a limited number of studies examining performance management in elite sport. However, the process of assessing and managing people's performance is not restricted to the business or sport domains and psychological researchers have been encouraged to examine concepts in different applied contexts (Jones, 2002). Indeed, performance management has been identified as a salient process within military, healthcare, and fire and rescue settings (e.g. Hedge, Borman, Bruskiewicz, & Bourne, 2002; Murphy & Greenhalgh, 2013). For example, Hedge et al. (2002), designed a performance management strategy to develop the knowledge, skills, and abilities required by sailors to drive organizational success in the US Navy. Interestingly, researchers have not yet considered how performance management is conceptualized and operationalized across different domains and if there are similarities and differences in their processes. This is somewhat surprising due to the increasing body of literature highlighting potential links between elite sport and different performance domains,

such as surgery, military, and the performing arts (e.g. Cotterill, 2014; Hays, 2002). For example, there are similarities between sport, business, performing arts, and military in how coaching methodologies can be used to enhance people's performance (e.g. Gould & Wright, 2012). Further to this, Bryan, O'Shea, and McIntyre (2017) recently conducted a systematic review on the concept of resilience across competitive sport and business workplace settings, as both contexts require similar achievement and goal-oriented behavior.

Acknowledging the contextual differences between elite sport and other performance-focused professions, it is important to identify the similarities in the psychosocial challenges where performance management can make an impact (Cotterill, 2014; Fletcher & Wagstaff, 2009). In a business context, the pressure on individuals, teams or organizations to perform tends to be dispersed over time; however, similar to elite sport, it is crucial to understand the demands placed on people to perform (i.e. requirements of the job), and identify organizational processes that will maximize support and minimize constraints of their performance (Jones, 2002). In relation to the performing arts, (e.g., dance, music), like elite sport, the individuals and groups involved require management and support to execute their skills for an audience (Hays, 2002). Further commonalities exist between elite sport and domains centered on people in high-risk professions (Hays, 2009). These domains can be identified as high-stress, high-demand performance settings, such as surgical or emergency medicine, fire and rescue, aviation, law enforcement, and military operations, where the people working in them require processes to manage the potential risk, harm, or error involved (Salas, Driskell & Hughes, 2013). While these performance domains are all seemingly diverse in organizational structure and have specific nuances, they all require core performance management processes or employ components of performance management to optimize the behavior of people tasked with delivering performance (Hays, 2009).

In summary, the study of performance management within elite sport is in its infancy, and there is a lack of understanding as to the mechanisms that might underpin the performance management process and the contextual variables that influence it. Furthermore, there is uncertainty as to the similarities or differences in performance management processes across other performance-focused domains and ultimately their relevance to elite sport. Consequently, there is a need for a systematic review of the performance management literature to provide a clearer understanding across domains. While several reviews on performance management have been already conducted within the wider academic literature, they are somewhat limited in their contribution due to conceptual and methodological issues. Firstly, these reviews have tended to solely focus on narrative or conceptual information on this topic (e.g., Brudan, 2010), leading to calls for a focus on empirical research (DeNisi & Murphy, 2017). In addition, a rigorous systematic procedure in appraising the literature has not been applied, or at least reported (e.g., DeNisi & Murphy, 2017). Therefore, considering the emerging importance of performance management in elite sport, the potential for knowledge transfer across performance-focused domains, and the limited methodological rigour and absence of empirical research in previous reviews, the purpose of this study is to conduct a systematic review of performance management studies within elite sport, business, performing arts, and high-risk professions. The review aims to synthesize empirical evidence from across these domains, identify the similarities and differences in key components of the performance management process, and highlight implications for practitioners in elite sport.

Method

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines to ensure an appropriate standard of reporting (Moher, Liberati, Tetzlaff, & Altman, 2009).

Performance-focused Domain Definitions

For the purposes of the review, elite sport was defined as the highest level of international or professional competitive sport where the athletes feature in major events and championships (e.g., Olympic Games, English Premier League) thus demonstrating their expertise (Swann, Moran, & Piggott, 2015). In order to examine leading business organizations, it was logical to select studies that sample high-performing firms operating in competitive markets in order to further understand how performance management contributes to achieving high levels of performance (Truss, 2001). In this review high-performing firms were defined as organizations demonstrating superior performance and reputation as an employer as identified by Fortune 500 listings[1] or equivalent national rankings. In relation to the performing arts, on-stage professional dance, music, or similar disciplines were identified, as these professions are strongly achievement-oriented and place emphasis on flawless technique and performance (Hays, 2002). Finally, high-risk occupations were defined as professions consisting of goal-oriented action teams working in high-stress, high-demand performance settings. Examples of such settings include surgical medicine, fire and rescue, military, aviation, and law enforcement, where there is considerable potential for risk, harm, or error for the people working within them (Salas, Driskell, & Hughes, 2013).

Sources

A systematic search of the literature was conducted using the following relevant electronic databases; Web of Science, Sport Discus (EBSCO), Business Source Complete (EBSCO), Wiley, JStor, SAGE Journals, Taylor and Francis, PsycINFO (ProQuest), Science Direct, Emerald Insight, and PubMed. The search strategy followed by Swann, et al. (2015) was used as a guide within each database (see supplementary file 3). Additionally, the search

[1] Fortune listings are annual rankings of the world's top companies across various industries published by Fortune magazine. The rankings typically include the best companies to work for, most admired companies, fastest growing start-ups, and organizations with the greatest leaders.

strategy included citation pearl growing which involved searching reference lists of the included full-text documents, to identify further articles not captured in the original search.

Eligibility Criteria

The review employed the following inclusion criteria: studies were required to (1) focus on one of the specified performance-focused domains, (2) examine a performance management process at individual, operational, or strategic level, (3) contain original empirical evidence, and (4) be published in an English language, peer-reviewed article. The performance management process should focus on a set of activities that involves aligning and developing people, gathering performance feedback, and providing supervision in line with organizational goals (DeNisi & Murphy, 2017). Studies clearly focused solely on the measurement of job performance (e.g. appraisals) without activities aimed at developing or improving performance (e.g. rewards, training) were deemed outside the scope of the review and excluded. In addition, studies that only focused on micro-level (e.g., coach-athlete dyad or mental skills training) or macro-level (e.g., governance related) processes were also deemed outside the aims of the review and excluded. Studies that included leadership or culture as part of a process aimed at managing group performance were included if the study satisfied the other eligibility criteria (e.g., Rowold, 2011). However, studies focused only on leader performance or culture diagnosis without a performance management component were excluded.

Procedure

Screening process.

Stage one – preliminary screening. After identifying and excluding duplicate references, the first author screened studies based on journal title only to exclude references that could be easily identified as book chapters, book reviews, conference proceedings, magazine articles, and editorials. In order to efficiently screen the high number of remaining

search results, the first author assessed the studies by article title only (Mateen, Oh, Tergas, Bhayani, & Kamdar, 2013) in order to identify and exclude titles that did not contain any reference explicitly, or implicitly, to performance management (see Figure 1).

Stage two – title and abstract screening. Initially, a pilot screening process was undertaken by the first and last author with a selection of articles (n = 20), to assess each reviewer's interpretation of the eligibility criteria. No issues were reported in the interpretations of the criteria. Next, the same two authors screened all remaining articles by title and abstract using the eligibility criteria (see Figure 1). Any disagreements were discussed and resolved by consensus. If consensus could not be achieved, the third author independently screened the study in question and the decision of the majority was taken.

Stage three – full text screening. The final stage involved screening all remaining articles by full text for eligibility criteria. Two authors completed the screening and selection separately (see Figure 1). Any disagreements not resolved through discussion were independently screened and decided by the third author.

Quality Assessment.

Due to a number of heterogeneous study designs included, a quality assessment was undertaken using the Mixed Method Appraisal Tool (MMAT) (Pluye et al., 2011). The MMAT is intended as a checklist for appraising the methodological quality of studies included in a systematic review containing both qualitative and quantitative studies. While no studies were excluded based on the quality assessment, the quality scores were reported in order for readers to contrast the quality of the studies and consider their relative contributions to the final themes and practical implications (Thomas & Harden, 2008).

Data Collection.

Data from included studies was recorded in a data extraction form (see supplementary file 2). The data extracted consisted of factors related to the performance management processes identified in each study.

Synthesis of Results.

Thematic synthesis was specifically chosen as it offers a method of integrating and structuring diverse types of evidence (e.g., qualitative and quantitative) by identifying prominent themes in the studies. The three-stage thematic synthesis process, as outlined by Thomas and Harden (2008), was primarily conducted by the first and last author who met frequently to discuss and resolve any issues. The other authors acted as a review panel to critique and challenge decisions made throughout the process.

Stage one. Full-text hard copies of each study were read and re-read in order to ascertain the key components of performance management in each study. In correlational studies, the variables that correlated with performance outcomes were identified as key factors and extracted as reported in the study findings (Park, Lavallee, & Todd, 2013). In the case of qualitative or other methodological studies, key factors or concepts associated with performance, as interpreted by the original authors, were extracted as raw data to ensure the analysis remained close to the studies' original findings (Park, Lavallee, & Todd, 2013)

Stage two. The next stage of synthesis involved grouping factors with similar meanings and constructing 'descriptive themes' (Thomas & Harden, 2008). First, the factors from elite sport studies were organized separately to generate relevant descriptive themes. Following this, factors from other performance-focused domains were categorized into descriptive themes to facilitate critical analysis against the descriptive themes from elite sport.

Stage three. The third stage involved presenting and discussing the data-driven descriptive themes under higher-level 'analytical themes' based on current theoretical

conceptualizations of performance management (e.g., individual-level, operational-level, strategic-level, key contextual influences).

Results

Search Strategy

Following the search strategy and document screening process, 20 studies were identified as eligible for inclusion in the review. Seven studies were focused on elite sport, while 13 studies were included from other performance-focused domains (see supplementary file 4 for summary of included studies). While the search strategy was broad, returning 12,848 results, the eligibility criteria, including the requirement for original empirical evidence, were applied rigorously as evidenced by the reduction to 20 studies. The PRISMA flow diagram in Figure 1 illustrates the results at each stage of the screening process (Moher, et al., 2009).

[INSERT FIGURE 1 HERE]

Research Design, Sample Characteristics and Quality Assessment

A detailed table was created classifying the research design, sample characteristics and quality assessment scores (see Table 1). Samples were distinguished by size, gender, location at which study was conducted, and type of performance domain.

[INSERT TABLE 1 HERE]

Similarities and Differences in Performance Management Processes across Domains

The results were organized under the four analytical themes: strategic performance management, operational performance management, individual performance management, and leadership of the performance team (see Table 2). To identify key similarities and differences in each section, the descriptive themes in elite sport will be discussed first, followed by descriptive themes identified in other domains.

Strategic Performance Management

The review found that at a strategic level, performance management within elite sport comprised of 15 factors (see supplementary file 2 for details on extracted factors) across two descriptive themes: establishing the vision and working with organizational stakeholders. Establishing the vision referred to how general managers of professional sport organizations or Olympic sport performance directors developed and communicated their vision of success. Working with organizational stakeholders involved professional sport team managers interacting with important groups (e.g. board, media) in order to develop strategically important relationships that will support the vision and future plans.

In relation to other performance-focused domains, the review identified only two factors and one descriptive theme at a strategic level: alignment with organizational objectives. This descriptive theme originated from a study on world-leading business firms and referred to managers viewing performance management as a strategic tool that can help achieve organizational objectives. Specifically, this involved clearly aligning operational measures with the strategic objectives and including senior managers in the design and implementation of the performance management process.

A notable finding is the lack of evidence across elite sport and other performance-focused domains for strategic performance management. However, a key difference between business and elite sport domains at a strategic level did emerge. Specifically, in a business context performance management is viewed as organizational tool aimed at supporting the delivery of strategic objectives, while in elite sport the performance management process primarily involves the organization or performance department leader developing and negotiating their vision for success.

[INSERT TABLE 2 HERE]

Operational Performance Management

In terms of operational performance management in elite sport, 35 factors were extracted across five descriptive themes: understanding the context, assessing the performance, internal processes and procedures, adapting the culture, and debriefing, feedback and learning. Understanding the context involved management being acutely aware of how evolving situations inside (e.g. interactions with the board) and outside the organization (e.g. level of competition) may impact on their operational decisions. Addressing the performance environment referred to creating optimal conditions for athletes, coaches, staff, and management by identifying and removing unnecessary interferences. Internal processes and procedures consisted of implementing systems and structures, the management of policies and regulations, and performance planning. Adapting the culture involved creating an inclusive approach and shaping the values, behaviors, and attitudes within the performance team. In a professional sport context this included identifying social allies and cultural architects and making decisions clearly in line with the new values. Debriefing, feedback, and learning in elite sport referred to processes that athletes, coaches, and staff followed to assess performance and identify areas for improvement.

With regard to other performance-focused domains, the review identified 27 factors across four descriptive themes: addressing the performance environment, internal processes and procedures, building performance team relationships, and debriefing, feedback and learning. The factors emerged from nine different studies around high-risk domains such as emergency and surgical medicine, fire rescue services, and military operations. Addressing the performance environment referred to analyzing mission complexity in military settings, structured examinations of medical emergency scenes, and assessing available support and resources for surgical operating rooms. Internal processes and procedures involved developing action plans and pre-surgery briefings for surgical teams in order to take a systematic approach to avoiding error and clearly defining tasks, routines, and schedules for

personnel within fire rescue services and military domains. Building performance team relationships referred to improving social cohesion and the quality of interpersonal relationships within military and medical surgery settings, and how group cohesiveness assisted the development high performing groups within fire rescue services. Debriefing, feedback, and learning included using post-surgery reviews and continuous improvement processes with surgical operating room staff, and structured feedback processes with flight crew following military aviation missions.

There appears to be strong similarities in operational performance management between elite sport and certain action teams working in high-risk domains (e.g. medical surgery team, fire rescue services). In particular, addressing the performance environment (e.g. minimizing interferences to athlete training, identifying necessary resources and support for surgical operating rooms), having domain-specific processes and procedures in place, and using structured debriefing and feedback mechanisms are common performance management themes. Conversely, understanding the broader organizational context and adapting the culture was vital within elite sport but was not a prominent feature of performance management with high-risk professions.

Individual Performance Management

Moving to individual performance management in elite sport, the review identified 11 factors across two descriptive themes: evaluating the performance of people and enhancing the capability and capacity of people. Evaluating the performance of people referred to coaches and management using appropriate information (e.g. results, training data, athlete feedback) to assess athlete performance but also the effectiveness of role delivery within the performance department. Enhancing the capability and capacity of people included general managers of professional sports teams expressing an interest in the growth of their staff (e.g.

developing new mindsets in their role, promotions to new positions) and national sport organizations providing development opportunities for their Olympic performance staff.

In terms of other performance-focused domains, 15 factors emerged across two descriptive themes: evaluating the performance of people and enhancing the capability and capacity of people. The factors were extracted from seven studies on performing arts, business, military, fire rescue, and surgical medicine. Evaluating the performance of people referred to linking employee performance appraisal to decisions on rewards or contract terminations within leading companies and identifying measures of role effectiveness within medical surgery teams. Enhancing the capability and capacity of people included improving crisis situation and teamwork skills with surgical staff, autonomy-supportive strategies with musicians in classical orchestras, and using structured HR practices in business for acquiring, developing, and retaining employees.

At an individual level, although the descriptive themes across elite sport and the other performance-focused domains were labelled the same, the factors extracted from the studies across these domains were different. To elaborate, the practices utilized to develop personnel within business and high-risk professions appear to be more structured and professionalized compared to elite sport. Furthermore, the measurement and appraisal of role effectiveness appears to be more developed within business and medical surgery domains compared to elite sport which focused on athlete outcomes to evaluate staff performance.

Leadership of the performance team

The review found that leadership was an important contextual variable within elite sport that has significant influence at all levels of the performance management process. Leadership of the performance team consisted of 10 factors across three descriptive themes: transformational leadership, transactional leadership, and other leadership approaches. Transformational leadership primarily referred to examples of individual consideration with

athletes (e.g. understanding and supporting athlete and staff needs). Transactional leadership involved managers' use of contingent reward (e.g. positive reinforcement in return for enhanced performance) and active management-by-exception with athletes and staff (e.g. continually monitoring and managing interactions). For other leadership approaches there was only one factor which suggested that dark leadership traits (e.g. Machiavellianism), may be beneficial for manager's delivering their vision to key stakeholders (e.g. board, coaches).

Leadership of the performance team also emerged as an analytical theme in other performance-focused domains and consisted of 13 factors across three descriptive themes: transformational leadership, transactional leadership, and other leadership approaches. The factors emerged from studies on fire rescue, emergency medicine, and performing arts domains. Transformational leadership involved behaviors such as inspirational motivation, individual consideration, and high performance expectations which were used by fire rescue team managers to enhance employee self-efficacy and cohesiveness and by orchestra conductors to communicate performance demands to musicians. Transactional leadership referred to contingent reward (e.g. praise in return for enhanced performance) and active management-by-exception in relation to orchestra conductors monitoring musician performance. Other leadership approaches included senior medical professionals using precise instructions and feedback with team members in medical emergency situations and how team member leadership emerges within fire rescue services in the absence of a formal leadership figure.

While the evidence suggests that similar transactional leadership behaviors may be important for maintaining the performance of athletes in elite sport and musicians in classical orchestras, other leadership approaches appear to be strongly situation and context-dependent. For example, different types of leadership may be effective for senior medical

professionals managing the performance of emergency teams (e.g. directive leadership) and Olympic sport performance directors implementing their vision (e.g. dark leadership).

Discussion

The purpose of this review was to synthesis the evidence on performance management in elite sport and across other performance-focused domains. Following a comprehensive and rigorous assessment of the empirical literature, the similarities and differences between performance management processes in elite sport and other performance-focused domains were examined.

Strategic Performance Management

The findings indicated different approaches to performance management at a strategic level between elite sport and business domains. For example, the results suggested that strategic performance management with Olympic sport programmes or professional sports teams is primarily focused on a social (and politically charged) process of negotiating and implementing the performance leader's vision (e.g. Collins & Cruickshank, 2012). Whereas in world-leading firms, strategic performance management is most effective when it is viewed as an integrated organizational process that incorporates tactical goals, and senior staff are included in the design, implementation, and monitoring of strategy (e.g. Biron, 2012). Strategic roles in elite sport (e.g. performance directors) may benefit from considering how their vision can be more effectively integrated within the organization. Signaling theory (Spence, 1973) may be useful for understanding how the performance director's vision can be translated into meaningful practice and communicated to promote positive staff and organizational outcomes. Signaling theory suggests that people need tangible information to help them understand what the organization really values and what the organization expects of them (Spence, 1973). To elaborate, observable strategic actions within elite sport (e.g. explicit communication of values and organizational objectives, development of strategic

plans, publication of aligned policies) are likely to be interpreted as signals which can influence the perceptions and behaviors of stakeholders (e.g. staff, clubs, funding agencies).

Operational Performance Management

There are commonalities in the performance management processes used within elite sport and with action teams working in high-risk domains (e.g. fire rescue services, medical surgery, military) at an operational level. For example, addressing the performance environment within medical surgery domains involved assessing if the necessary support and resources were in place for efficient operating room performance (Forse, Bramble, & McQuillan, 2011). While in Olympic sport, minimizing unnecessary distractions and interferences in the performance environment is important to ensure athletes and staff function effectively (Arnold, Fletcher, & Molyneux, 2012). In terms of differences, the results suggest that understanding the context and adapting the culture are unique components of performance management within elite sport and can have a significant influence at an operational level. Indeed, developing context-specific expertise is key for managers to understand and make decisions while facing cultural challenges within the sport (Collins & Cruickshank, 2012). Moreover, the CVF may be useful for practitioners to diagnose the existing organizational culture and understand the type of culture they might adapt to (e.g. achievement, wellbeing, innovation, internal processes) (Jones et al., 2009). Once this is understood, cultural change may be facilitated via performance management practices in order to ultimately influence organizational effectiveness. For example, an Olympic sport programme with excessive focus on a culture of achievement may benefit from prioritizing performance management practices that value and promote a sense of wellbeing among personnel (e.g. enhancing interpersonal relationships) (Wagstaff, Fletcher, & Hanton, 2012).

Individual Performance Management

The findings suggest that, at an individual level, there are differences in performance management processes between elite sport and other performance-focused domains, such as high-performing business and medical surgery. Although each domain aims to evaluate and enhance the performance of its people, the methods for training and development of staff within business and high-risk professions appears to be significantly more advanced compared to elite sport. For example, evidence from business suggests that organizations that use a system of high-commitment HR practices with staff, such as extensive training and development practices and routine performance feedback from multiple sources, can demonstrate higher levels of business performance (Armstrong et al., 2010). Despite evidence supporting the use of feedback mechanisms for staff and encouraging personal growth (e.g. Fletcher & Arnold, 2011), the review indicates that the professional development of coaches, support staff, and management in elite sport organizations is heavily focused towards informal or on-the-job learning. Practitioners may draw on principles from organizational psychology to inform the development of professional development procedures. For example, role re-design or job crafting theory (e.g. van Wingerden, Bakker, & Derks, 2017) may help organizations achieve a better understanding of demands faced by coaches, staff, and management, and the support they require to achieve professional growth within elite sport.

Leadership of the performance team

While performance management is conceptualized as a distinct organizational process, leadership of the performance team emerged in the review as a significant element across various domains. In complex performance-focused settings, such as elite sport, performing arts, and high-risk professions, leadership behaviors provide much needed social exchanges that shape the performance management process (Reilly & Aronson, 2009). While similar transactional leadership behaviors were evident in elite sport and performing arts domains, overall the leadership behaviors identified appear to be strongly context and situation

dependent. For example, dark leadership traits may be important for facilitating the vision of newly appointed Olympic sport performance director's (Collins & Cruickshank, 2012), while directive leadership appears vital for senior medical professionals coordinating emergency response teams (Tschan et al., 2006). Aligning with the proposed layers of performance management, a multi-level approach to leadership (Peachey, et al., 2015) may be a useful model to further understand the relationship between leadership and performance management in elite sport. This model highlights the unique factors in sport that impact on the leader's capacity to guide activities at the organizational level (e.g. strategic performance management within politicized governance structures), at the group/team level (e.g. operational performance management within the performance department), at the dyad level (e.g. individual performance management with coaches), and at the personal level (e.g. influence of lived experience, adoption of darker traits). Recognizing these levels of leadership may help explain the dynamic interaction between performance management activities and the performance leader's role within elite sport.

Practical implications

The findings in this review should be targeted at sport psychologists and managers working within the performance departments of sport organizations (e.g. Olympic sport programmes, professional teams). By considering the components of performance management at individual, operational, and strategic levels and their interaction with contextual variables such as leadership and organizational culture, practitioners will be better positioned to develop, support, and implement performance management processes within elite sport. At the strategic level, performance leaders should negotiate with key institutional stakeholders (e.g. CEO, board members) to build strategic consensus and develop appropriate signals (e.g. vision, strategic goals) that will explicitly communicate a shared understanding of organizational priorities. It is imperative that practitioners subsequently translate these

priorities into meaningful practice for individual roles and groups. At an operational level, debriefing and feedback processes should examine if team members demonstrated performance behaviors that align with the desired culture. For example, if the intention is to adapt towards a culture that emphasizes well-being, post-competition debriefs may include analysis of specific teamwork behaviors or how the team handled stressful situations. At the individual level, it is important that coaches, staff, and management have clarity on where they invest time within their roles. By reflecting on this, personnel can try to ensure that they focus on areas that will maximize impact on athlete performance. This will also enable them to identify gaps or opportunities for professional development. Moreover, this process will ensure that their role delivery is evaluated based on proximal outcomes (e.g. coach's strategy for competition preparation) rather than distal ones such as athlete performance. Overall, these findings will help sport psychologists and performance managers further understand specifically where support may be required in the performance management process.

Future research

The limited research to date on performance management within elite sport provides significant opportunities for theoretical, conceptual, and methodological advances in future studies. In terms of theoretical implications, socio-ecological theory (Bronfenbrenner, 1979) may be a useful perspective for examining how context-related features across multiple levels interact with performance management processes within the elite sport environment. To investigate this interaction, qualitative studies are required to explore performance management as an integrated process across strategic, operational, and individual layers in elite sport. Future research should also aim to address the limited experimental research on management-led processes in elite sport by conducting and evaluating theory-based interventions (Wagstaff, Hanton, & Fletcher, 2013). After engaging with and assessing the needs of organizations, researchers may consider the theoretical frameworks referenced in the

discussion section (e.g. job crafting theory, signaling theory) to inform bespoke interventions and further understand how performance management can support organizational functioning within elite sport.

Strengths and limitations

The review applied considerable rigor to integrating and reporting such diverse data. This is a significant strength of the study considering the apparent difficulty in synthesizing data in reviews of mixed studies. A potential limitation was that the methodological quality of three studies, based on criteria in the MMAT, is questionable and should be acknowledged. Moreover, despite conducting a comprehensive search of published peer-reviewed literature, the review did not include non-English language studies, grey literature, or unpublished research. This was decided based on the known difficulties in identifying and including relevant non-English studies and grey literature, and issues in assessing their methodological quality.

In conclusion, this systematic review is the first study to appraise studies on management across multiple domains with a view to informing elite sport research and practice. The findings provide an important step in understanding performance management processes across elite sport and similar performance-focused domains. By synthesizing the data from the selected studies, the findings highlight how performance management processes occur at individual, operational, and strategic levels of an organization. Further exploration of these processes will inform practitioners on how performance management can be packaged and introduced within elite sport to positively impact on organizational effectiveness.

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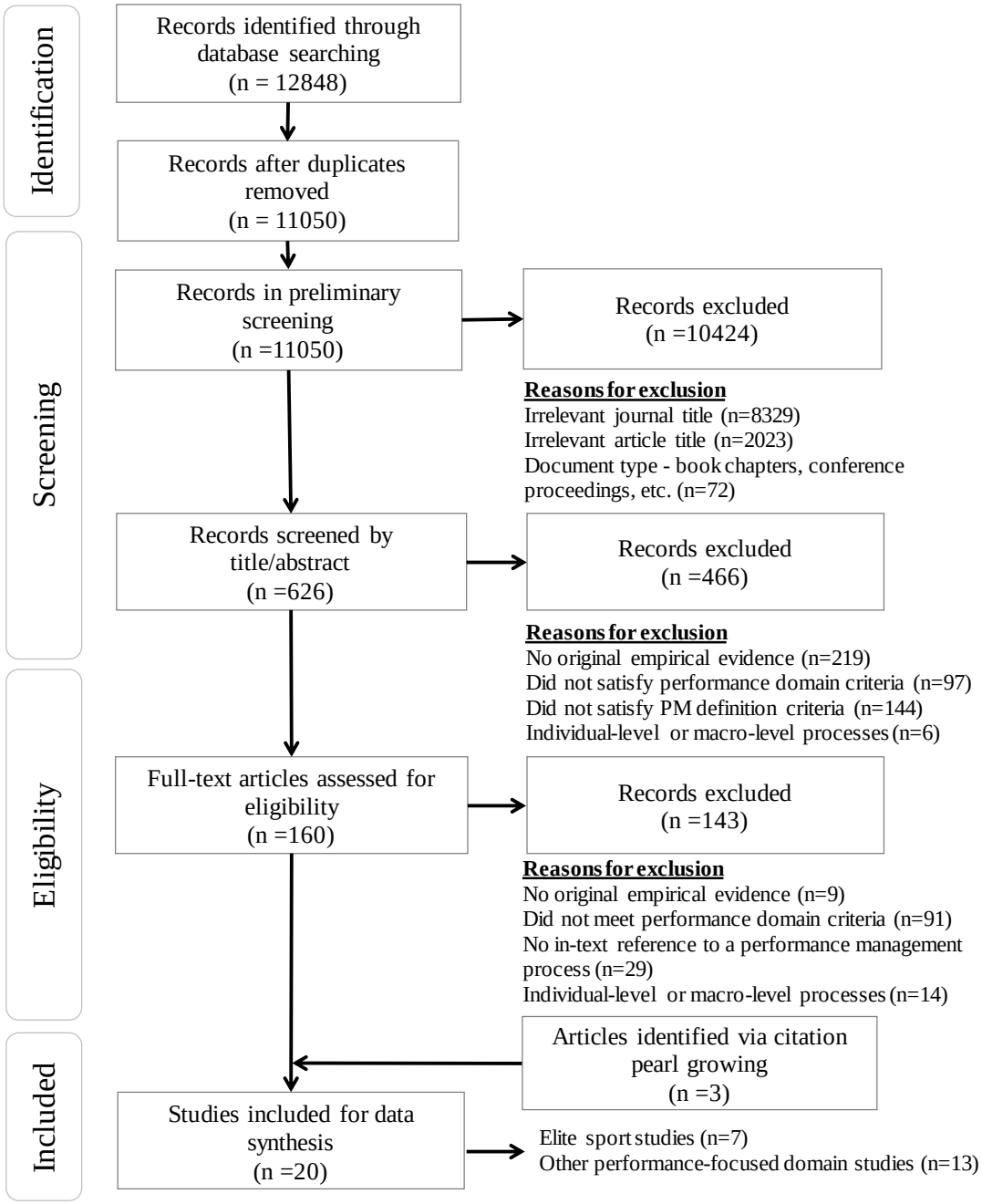

Figure 1. PRISMA flow diagram for document search and screening process

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Table 1

Research Designs and Sample Characteristics

Study characteristics	**Reference Number**	**Sample**	***k***
Design			
Quantitative descriptive (correlational)	8, 13, 14, 15, 16, 18	6	
Quantitative non-randomised (cohort study)	12, 17, 20	3	
Quantitative randomised control (trial)	11	1	
Qualitative (phenomenology)	1, 4, 6, 7	4	3
Qualitative (description)	9	1	
Qualitative (narrative)	2	1	
Qualitative (case study or case studies)	10, 5	2	
Qualitative (grounded theory)	3	1	
Action research	19	1	
Data collection			
Questionnaire(s)	8, 12, 13, 14, 15, 16	6	
Interview	1, 2, 3, 4, 5, 7, 9, 10	10	9
Various measures of task and workload performance	17	1	
Video recording and time-based coding	18	1	
Observation protocol	20	1	
Questionnaire and blinded observation assessment	11	1	
Performance domain			
Business	8, 10, 14	3	
Performing arts	9	1	
Elite sport	1, 2, 3, 4, 5, 6, 7	7	6
High-risk occupations:			
Military setting	13, 17, 19	3	
Fire & rescue	15, 16	2	
Surgical/Emergency medicine	11, 12, 18, 20	4	
Sample Size			
1-10	2, 3, 6, 7	4	
11-50	1, 4, 5, 9, 11, 17, 19	7	6
51-100	14, 18	2	
101-200	8	1	
201-300	10, 15, 16	3	
Over 300	13, 20	2	
Not identified	12	1	

Table 1 (continued)

Research Designs and Sample Characteristics

Study characteristics	Reference Number	Sample	*k*
Gender			
Male-only	2, 3, 6, 17	4	
Female-only		0	
Combined	1, 4, 5, 7, 11, 13, 15, 16, 18	9	8
Not identified	8, 9 ,10, 12, 14, 19, 20	7	
Location			
North America	6, 11, 12, 13, 14, 15, 17	7	
Europe	1, 2, 3, 4, 5, 7, 8, 16, 18	9	8
Other nations	10 (various), 19, 20 (Israel)	3	
Not identified	9	1	
MMAT Quality Assessment			
High quality (100%)	1, 3, 4, 10, 15, 16	6	
Good quality (75%)	5, 6, 7, 8, 11, 13, 18	8	
Moderate quality (50%)	2, 17	2	
Low quality (0-25%)	9, 12, 14	3	
N/A (could not be assessed with tool)	19	1	
Inter-rater reliability (Cohen's Kappa value)	0.85		

Note: *k* = number of sample populations

Note: Same samples (11/1, 11/2)

References: 1 = Arnold, Fletcher, & Molyneux (2012), 2 = Collins & Cruickshank (2012), 3 = Cruickshank, Collins, & Minten (2015), 4 = Fletcher & Arnold (2011), 5 = Fletcher & Streeter (2016), 6= Frontiera (2010), 7 = Macquet, Ferrand, & Stanton (2015), 8 = Armstrong, Flood, Guthrie, Liu, MacCurtain & Mkamwa (2010), 9 = Atik (1994), , 10 = Biron, Farndale, & Pauuwe (2012), 11 = Dedy, Bonrath, Ahmed, & Grantcharov (2016), 12 = Forse, Bramble, & McQuillan (2011), 13 = Jordan, Feild, & Armenakis (2002), 14 = Lawler III (2003), 15 = Pillai & Williams (2004), 16 = Rowold (2011), 17 = Sperling & Pritchett (2011), 18 = Tschan, Semmer, Gautschi, Hunziker, Spychiger, & Marsch (2006), 19 = Vashdi, Bamberger, & Erez (2013), 20 = Vashdi, Bamberger, Erez, & Weiss-Meilik (2007)

Table 2

Thematic Synthesis representing performance management processes in elite sport and across other performance-focused domains

Analytical themes	**Descriptive themes (Elite Sport domains)**	**No. of factors**	**No. of studies**	**Descriptive themes (Other domains)**	**No. of factors**	**No. of studies**
Strategic Performance Management	Establish the vision	7	5 (1, 2, 4, 5, 6)	Alignment with organizational objectives	2	1 (10)
	Working with organizational stakeholders	8	3 (1, 3, 6)			
Operational Performance Management	Addressing the performance environment	5	3 (1, 5, 6)	Addressing the performance environment	5	3 (12, 17, 18)
	Understanding the context	8	4 (1, 2, 3, 6)	Internal processes & procedures	10	6 (11,12,16,17, 19,20)
	Internal processes & procedures	4	4 (1, 4, 5, 7)	Building performance team relationships	7	4 (12, 13, 15, 19)
	Adapting the culture	12	5 (1, 3, 4, 5, 6)	Debriefing, feedback, & learning	5	3 (12, 19, 20)
	Debriefing, feedback, & learning	6	2 (6, 7)			
Individual Performance Management	Enhancing the capability & capacity of people	7	4 (1, 4, 5, 6)	Enhancing the capability & capacity of people	10	6 (8, 9 ,10, 11, 12, 15)
	Evaluating the performance of people	4	2 (3, 5)	Evaluating the performance of people	6	3 (10, 12, 14)
Leadership of the performance team	Transformational leadership	4	2 (5, 7)	Transformational leadership	5	3 (9, 15, 16)
	Transactional leadership	5	4 (3, 5, 6, 7)	Transactional leadership	3	1 (9)
	Other leadership approaches	1	1 (2)	Other leadership approaches	5	3 (12, 16, 18)

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