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Recent Developments in Team Resilience Research in Elite Sport

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1 Abstract

2 In this paper we review recent developments in team resilience research in elite sport.

3 Although resilience has become a popular and well-researched topic from an individual

4 (psychological) perspective, less attention has been paid to whether this construct is

5 conceptually and operationally robust at a group level. In this review, we provide an

6 overview of definitional aspects of team resilience followed by an outline of research in the

7 general psychology literature, and a discussion of the findings of the first two studies of team

8 resilience in elite sport. Recent developments in this area of sport psychology research

9 suggest that an understanding of how teams mobilize their collective psychosocial resources

10 to withstand stressors is essential for optimal performance.

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1 **Introduction**

2 Elite sport teams perform in highly pressurized situations and although some teams
3 manage to withstand the demands encountered, others experience debilitating effects under
4 pressure. Developing an understanding of how athletes withstand the pressures of elite sport
5 to sustain performance has been addressed in sport psychology research through the study of
6 psychological resilience (e.g., [1,2,3]). Yet, despite the pervasiveness of team sport
7 competition and the strong association that communities, nations, and even continents have
8 with teams [4], it is only recently that resilience research has shifted from individual athletes
9 to teams. This is somewhat surprising considering the challenges that exist for teams to
10 handle the setbacks they often encounter. Indeed, teams encounter stressors that are often
11 specific to groups including group tensions, blame, and sudden slumps in collective
12 performance [5, 6]. Therefore, team resilience in elite sport is being recognized as an
13 important avenue for researchers to investigate to better understand how teams can sustain
14 optimum performance under pressure [4, 7, 8**].

15 Lately, there has been a growing interest in team resilience research across a range of
16 performance domains such as health [9], military [10**], and management [11*]. A common
17 theme running throughout this body of work is that team members do not exist in isolation.
18 Their experiences of adversity are shared and, therefore, team resilience research should
19 investigate resilient factors above the level of the individual [12]. Moreover, the rise in team
20 resilience studies partly reflects that there is no guarantee that a group of resilient individuals
21 will automatically yield a resilient team. Therefore, the purpose of this review is to discuss
22 resilience at the group level and examine recent developments in team resilience research.
23 The narrative is organized into three main sections. First, an overview of emerging
24 definitional aspects of team resilience is provided. Second, a review of team resilience
25 research in general psychology is presented. Third, findings of the two available studies of

1 team resilience in elite sport are discussed. Applied recommendations are offered to maintain
2 high levels of performance despite the pressures that are ubiquitous in elite team sport and
3 suggestions are provided for further research.

4 **Defining Team Resilience**

5 Over the past decade, team resilience has been researched across a range of contexts
6 [see 7,8**,9,10**,11*,13-18,19*-20,21*-25]. There is a general recognition that the
7 relational fabric inherent in teams means that resilience at the group level should be
8 conceived differently to the individual level. Indeed, when researching resilience, it is
9 important to be cognizant of the potential changes in the meaning of constructs at different
10 levels [26]. Definitions of team resilience are presented in Table 1. Of the 18 team resilience
11 publications that exist, only eight include a definition and just five of these are original,
12 empirical studies [7,11*,13,17,18]. Therefore, identification of common features of
13 definitions and conceptualizations of team resilience is limited. However, there is some
14 consensus about the protective nature of team resilience from the potentially harmful effects
15 of stressors. For example, the definitions in Table 1 point to resilient teams' abilities to
16 withstand [7], resist [11*], and overcome [9,21*] stressors. The notion that team resilience is
17 a dynamic, temporal process is another feature arising from the definitions.

18 Given that team resilience research recognizes the particular importance of
19 relationships, it is perhaps surprising that most definitions do not refer to team resilience as a
20 shared, collective, and psychosocial phenomenon. There are, therefore, opportunities for
21 researchers to advance knowledge by explaining the basis of their definition and
22 conceptualization of team resilience in future studies. For example, in the area of
23 organizational psychology, Meneghel, Martínez, and Salanova [24] justified their
24 conceptualization of team resilience as a collective level construct by drawing on studies
25 across a range of psychology contexts and using multilevel approaches [27]. Furthermore,

1 these authors [23] directed attention to the potential role of affective processes in groups.
2 Employing structural equation modelling, their findings revealed a positive relationship
3 between collective positive emotions, team resilience, and performance in teams. Since team
4 resilience research is at a nascent, albeit burgeoning stage of development, we recommend
5 that researchers adopt an integrated (i.e., cross-disciplinary), systematic approach to advance
6 definitional, conceptual, and theoretical development.

7 **Team Resilience Research in General Psychology**

8 In general psychology, team resilience investigations have begun to identify collective
9 resilient characteristics of teams that can protect them from the potential negative effects of
10 stressors. Examples include: the quality of emotional expression among team members [18],
11 high quality relationships and structural ties [17], coordination [19*,24], diverse team
12 composition and talents [11*,19*], and social support [21*,24]. Particularly at the group
13 level, research suggests that the cultivation of relational protective factors buffer teams from
14 potentially harmful consequences [17]. Furthermore, in addition to conceiving team resilience
15 as a constellation of collective traits, some researchers have conceptualized team resilience as
16 a process that can be developed over time rather than comprising a set of static group
17 attributes [e.g., 10**,13,17]. To illustrate, researchers have suggested that leadership
18 processes may influence the development of team resilience [9,21*]. Indeed, Alliger et al.
19 [21*] proposed that leadership processes equip resilient teams with the physical and
20 psychosocial resources to withstand stressors. In findings that resonate with team resilience
21 research in sport psychology [8**], other researchers have highlighted the role of
22 transformational and shared team leadership for work teams to stimulate a proactive approach
23 to challenging situations [9, 22].

24 Stevens, Galloway, Lamb, Steed, and Lamb [10**] adopted a novel design to
25 establish links between neurodynamic measures and observations of team performance.

1 Specifically, they explored the role of cognitive behavioral group processes in a military
2 context when team members were exposed to disruptions. Findings showed that a high level
3 of collective organization prior to a task facilitated performance during stressors. The
4 researchers proposed that developing collective organization of a task facilitates a team's
5 ability to reorganize this knowledge during pressurized situations. In summary, it is evident
6 from developments in general psychology that team resilience research has illuminated the
7 distinctive role of group-level factors to withstand stressors. However, since this research is
8 in its infancy, questions remain about how team resilience should be defined, conceptualized,
9 measured, and developed in specific contexts.

10 **Team Resilience Research in Sport Psychology**

11 A feature of early team resilience research across psychology subdisciplines is,
12 perhaps, the piecemeal approach and lack of integrated development. In contrast, recent
13 advances in sport psychology include a more systematic agenda of team resilience research
14 [7,8**]. In accordance with recommendations by Luthar, Cicchetti, and Becker [28], this
15 programme of research aimed to explore team resilience to develop contextually-specific
16 meanings (i.e., team sport). In the first study of team resilience in sport psychology, Morgan,
17 Fletcher and, Sarkar [7] conducted focus groups with members of five elite sport teams.
18 Using thematic analysis to analyze the data, team resilience was defined as a “dynamic
19 psychosocial process which protects a group of individuals from the potential negative effect
20 of the stressors they collectively encounter. It comprises of processes whereby team members
21 use their individual and combined resources to positively adapt when experiencing adversity”
22 [7, p. 522]. Four resilient characteristics of elite sport teams were identified: group structure
23 (i.e., working communication channels during stressors), mastery approaches (i.e., a
24 collective commitment to ongoing learning despite adversity), social capital (i.e., high
25 quality, caring relationships), and collective efficacy (i.e., drawing on setbacks to increase

1 shared belief for future success). This study advanced resilience research by providing greater
2 definitional clarity about the nature, meaning, and scope of team resilience (i.e., what team
3 resilience is), and proposing a framework to profile the resilient characteristics of elite sport
4 teams (i.e., what a resilient team ‘looks’ like). Notwithstanding these advancements, by
5 describing team resilience as a “dynamic psychosocial process” [7, p. 552], Morgan et al. [7]
6 recommended that future research should explore the processes underpinning the resilient
7 characteristics to examine how a resilient team functions over time.

8 Employing narrative inquiry, Morgan, Fletcher, and Sarkar [8**] subsequently
9 analyzed autobiographies of eight members of the 2003 England rugby union World Cup
10 winning team. Findings revealed five main psychosocial processes underpinning team
11 resilience: transformational leadership (e.g., inspiring team members’ commitment to their
12 shared vision despite setbacks), shared team leadership (e.g., a wide distribution of team
13 member responsibilities), team learning (e.g., sharing knowledge of setbacks), social identity
14 (e.g., developing a distinctive team identity), and positive emotions (e.g., promoting humor
15 despite setbacks). This study illustrated how team resilience processes were essential for the
16 development of excellence which resonates with other research in sport psychology that has
17 identified the critical role of transformational leadership, team leadership, and team identity
18 during challenging situations in elite sport [4,29,30]. Importantly, in both studies conducted
19 by Morgan et al. [7,8**], team resilience was portrayed as a dynamic, temporal process.
20 Teams do not exist in static environments [31,32] and these findings suggest that team
21 resilience development should occur in accordance with the stage of a team’s existence and
22 the specific stressors encountered in that context and at that time. In summary, sport
23 psychology research has captured the contextual and temporal nature of team resilience in
24 elite sport and suggests that leveraging a team’s collective resources can enhance their ability
25 to withstand stressors and ultimately perform at the highest level.

1 **Applied Implications**

2 A number of practical suggestions arise from team resilience research. Indeed,
3 understanding how teams should collectively perform in the context of pressure and setbacks
4 has particular benefit for coaches and sport psychologists. An overarching theme is that,
5 while teams consist of individuals, there are distinct factors peculiar to groups that must be
6 considered when developing a resilient team. Research findings have defined team resilience
7 as a shared experience and a resilience training and education programme should commence
8 by involving team members in discussions about their own team's resilience [7]. By
9 exchanging views about stressors they have experienced together, team members can isolate
10 situations when they have collectively withstood stressors. This could enhance shared
11 anticipation and identify early warning indicators for future stressors [21*,22]. Using the
12 findings of Morgan et al.'s [7] study as a framework, coaches should profile and assess the
13 resilient characteristics of their team and identify strategies to mobilize specific psychosocial
14 resources to enhance team resilience. For example, group structures could enhance team
15 resilience by facilitating working communication channels (e.g., practising effective verbal
16 and non-verbal communication during pressurized situations). When profiling a team's
17 resilience, coaches should observe signs of brittleness such as disorganized pre-match team
18 briefings and poor coordination during stressors [10**,19*,21*].

19 Another overarching theme is that psychosocial processes leverage team resilience by
20 ensuring that team members are 'on the same wavelength' during stressors. The processes
21 identified in Morgan et al.'s [8**] study provide practitioners with a scaffold to boost the
22 combined relational, cognitive, and affective protective processes of teams. Transformational
23 leadership strategies should generate a compelling team vision which is reinforced during
24 setbacks to stimulate collective constructive sensemaking (e.g., to see the 'bigger picture').
25 Those working with teams should also consider shared team leadership as a vital

1 psychosocial process [33]. Leadership groups and role rotation will improve team members'
2 connectivity and accountability during setbacks.

3 Furthermore, coaches should devise team learning strategies to facilitate team
4 resilience. Through group reflections of adversity pooled knowledge can be collated of 'what
5 works' in pressurized situations. Simulation training, error exposure drills, and 'what-ifs' can
6 facilitate team resilience through effective learning [8**,10**,19*,21*,22]. Practitioners
7 should consider how pressurized situations are rehearsed during training (i.e., adverse
8 weather, poor officiating, fatigue). Interestingly, research in the emergency response context
9 showed that team resilience was enhanced when simulations involved dynamic unpredictable
10 situations rather than static predictable tasks [19*]. Social identity strategies could improve
11 team resilience by strengthening team bonds, displaying team imagery and celebrating
12 'resilient successes'. Finally, positive emotion strategies include monitoring for fatigue,
13 promoting enjoyment, and social opportunities.

14 Our findings suggest that the relative emphasis of team resilience processes will vary
15 at different times and in different situations (e.g., in line with a team's development and/or
16 the types of stressors encountered). This resonates with Alliger et al.'s [21*] framework of
17 behavioral strategies that could be applied. To illustrate, coaches and sport psychologists
18 should consider how they *anticipate* challenging situations (e.g., identify warning signs); how
19 they will *manage* stressors (e.g., quickly assess what's not working); and how they *mend*
20 difficult situations (e.g., identify future risk points). Based on insights in general psychology
21 [11*], teams should develop a prioritized list of collectively agreed team resilience actions,
22 behaviors, or protocols that will harness shared sensemaking and relationships during
23 stressors.

24 **Future Research**

25 There are a number of directions for future research. Kleinert et al. [34] commented

1 that team-level topics are underrepresented in sport psychology and a need exists to address
2 the lack of investigations focused on the everyday practices of teams. Team resilience
3 provides researchers with many fruitful opportunities to tackle these gaps [4,35,36]. First,
4 researchers could build on existing studies to investigate the specific role of psychosocial
5 processes for team resilience development. For example, qualitative approaches such as
6 ethnography have been recommended to capture ‘first-hand’ the dynamic nature of team
7 resilience [8**]. In general psychology, explanations of the role of particular psychosocial
8 processes for team resilience are emerging. Meneghel et al. [23] proposed that collective
9 positive emotions might be harnessed through social contagion. Researchers should
10 investigate this concept to explain how the ripple effects of team members’ responses during
11 adversity influences team resilience. Interestingly, while social identity has been reported as a
12 key team resilience process in elite sport teams [8**], there is little evidence in other
13 contexts.

14 Second, since team resilience is conceptualized as a dynamic process that evolves
15 over time [7], research designs should reflect this conception. Longitudinal research
16 conducted over the cycle of a team’s existence would advance our knowledge of its temporal,
17 unfolding nature [8**,34]. In other areas of psychology, dynamic team processes have been
18 regarded as emergent phenomena [37,38] although longitudinal approaches should be
19 employed to provide empirical evidence. Bonnano, Romero, and Klein [39] provided a
20 framework to explore the temporal nature of resilience (i.e., baseline functioning, aversive
21 circumstances, resilient outcomes, predictors of resilient outcomes), which could be applied
22 to research at the team level. The framework proposed by Alliger et al. [21*] could also be
23 used to investigate team resilience strategies over time.

24 Third, the protective characteristics and processes identified by Morgan et al. [7,8**]
25 should be used as a framework in the design of team resilience interventions. Quantitative

1 methods could be used to advance our knowledge of what works in specific types of
2 stressors. For example, Gomes et al. [19*] conducted observations of teams during
3 simulations and used timeline analysis to identify sequences of resilient actions. Furthermore,
4 quasi-experimental designs could be employed to assess pre-post changes in measures of
5 team resilience protective factors during a sports season. A recent systematic review has
6 shown that resilience training interventions (in the workplace) have significant positive
7 effects on mental health and subjective well-being, psychosocial outcomes,
8 physical/biological outcomes, and performance [40]. Post-intervention qualitative evaluations
9 of the process of conducting team resilience interventions also provide intriguing
10 opportunities to examine the intervention experience itself [41].

11 Fourth, there is a need to address team resilience measurement. This should include
12 the operationalization of each integral component of the resilience process (i.e., adversity,
13 protective factors, positive adaptation) [36,42] and researchers should adopt multilevel
14 approaches [8**,27,43]. Given the relative infancy of team resilience research, investigators
15 should provide clear definitional, conceptual, and theoretical consideration when developing
16 a measure. Furthermore, if team resilience is conceptualized as a process, measures should
17 reflect this, rather than relying on trait conceptualizations and cross-sectional designs [24].
18 Interestingly, in general psychology, the findings of Morgan et al. [7] were recently used as
19 the basis for team resilience scale development [25] although future research should
20 operationalize the constituent components of the resilience process [36,42].

21 Finally, the integration of psychological data (e.g., via interviews) and physiological
22 assessments (e.g., salivary cortisol) has the potential to generate a more holistic
23 understanding of team resilience. Recently, individual level resilience research investigated
24 the relationship between physiological arousal and resilience and findings indicated that
25 protective factors moderated the potential negative effects of high cortisol levels in elite

1 athletes [44]. At the team level, Stevens et al. [10**] adopted a neurodynamic approach (e.g.,
2 using electroencephalography) for the study of team resilience in the US Navy involving
3 simulation of exposure to hazards.

4 **Conclusion**

5 This review has highlighted the growing interest in team resilience research. Recent
6 investigations in elite sport have provided greater definitional and conceptual clarity of team
7 resilience and identified several team-level protective characteristics and processes. A future
8 research agenda is provided which points toward further examination of the role of protective
9 psychosocial processes, team resilience development, the design and evaluation of team
10 resilience interventions, and the measurement of team resilience. Finally, it is hoped that this
11 review highlights the theoretical and practical benefits of advancing our understanding of the
12 relationship between team resilience and optimal group functioning.

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1 *Table 1.* Definitions of team resilience

Authors (year)	Context	Definition
West, Carsten, and Patera (2009)	Work teams	“A positive team level capacity that aids in the repair and rebound of teams when facing potentially stressful situations. Teams which display the ability to either thrive under high liability situations, improvise, and adapt to significant change or stress, or simply recover from a negative experience are less likely to experience the potentially damaging effects of threatening situations” (p. 254).
Morgan, Fletcher, and Sarkar (2013)	Elite sport teams	“A dynamic psychosocial process which protects a group of individuals from the potential negative effects of the stressors they collectively encounter. It comprises of processes whereby team members use their individual and combined resources to positively adapt when experiencing adversity” (p. 522).
Carmeli, Friedman, and Tishler (2013)	Top management teams	“. . . a team’s belief that it can absorb and cope with strain, as well as a team’s capacity to cope, recover and adjust positively to difficulties” (p. 149).
Stephens, Heaphy, Carmeli, Spreitzer, and Dutton (2013)	Top management teams	“Resilience refers to the ability of individuals, groups, and organizations to absorb the stress that arises from . . . challenges and to not only recover functioning back to a ‘normal’ level but also learn and grow from the adversity to emerge stronger than before” (p. 15).
Rodríguez- Sánchez and Perea (2015)	Emergency services/work teams	“A capacity teams have to overcome crises and difficulties” (p. 30).
Alliger, Cerasoli, Tannenbaum, and Vessey (2015)	Business teams	“. . . the capacity of a team to withstand and overcome stressors in a manner that enables sustained performance; it helps teams handle and bounce back from challenges that can endanger their cohesiveness and performance” (p. 177).
Amaral, Fernandes, and Varajão (2015)	Project teams	“The resilience of a team can be defined as the team’s ability to deal with problems, overcome obstacles, or resist the pressure of adverse situations, without entering into rupture, and allowing a positive adjustment to successfully perform particular tasks, increase reliability, longevity, and the overall performance” (p. 1182).

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- 20 The authors of this investigation extended the findings of their original study of team
- 21 resilience in elite sport by using qualitative methods to explore the psychosocial processes
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- 23 protecting teams from the pressures encountered along this team’s pathway to excellence:
- 24 transformational leadership, shared team leadership, social identity, team learning, and
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2 and their framework includes three behavioral strategies to enhance a team's ability to
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