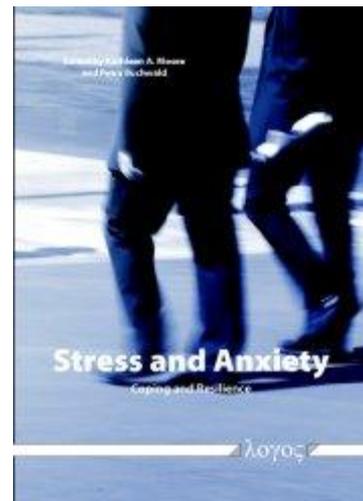


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Stress research in sport psychology: Three limitations and future directions

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Abstract

Although criticism of the quality, assumptions, and methods of sport psychology research is not new, these issues have recently drawn increasing attention, and a flourishing academic debate has evolved regarding the quality of sport research. Sport psychology research initially focused on high-level competitive athletes; however, most of the recent studies have been conducted with convenience samples of non-athletes and college students. This approach has been criticized for increasing the volume of studies while making little contribution to knowledge of the psychological functioning of professional athletes. Thus, future research should aim for higher ecological validity by moving from the laboratory to the field setting of professional athletes. In addition, previous studies of stressors within the professional athlete population are mostly performance-related. This focus creates the impression that research into the well-being and psychological functioning of athletes exists only in the service of better performance. Future research should stem from more holistic theories of human stress process (e.g., Conservation of Resources theory, Self Psychology). Another research limitation is related to the focus on differences *between* athletes, rather than differences *within* athletes, such as exploring the unique dispositions that make an athlete successful. The limitations of such an approach were first addressed more than 35 years ago, when sport research was criticized for studying large groups superficially rather than individuals in depth. Further research should be more dedicated to the exploration of state-like dispositions within individuals. This will help scholars to understand not only why some athletes thrive more than others but also what enables a particular athlete to thrive.

Introduction

Stress is a major factor that affects people's lives. An enormous amount of research has been conducted on the negative effects of stress, and several models of stress have been proposed (McGrath, 1970; Lazarus & Folkman, 1984; Hobfoll, 1988, 1989, 1998). In the sports realm, professional athletes are required to function in a competitive and demanding, and thus often stressful, environment. Professional athletes have been found to experience a greater variety of types of change compared to non-professional athletes (Samuel & Tenenbaum, 2011), illustrating the existence of a demanding environment. An increasing body of research has been dedicated to exploring the sources of stress among professional athletes in many sport fields, including elite track runners (McKay, Niven, Lavalley, & White, 2008), female soccer players (Holt & Hogg, 2002), golfers (Giacobbi, Foore, & Weinberg, 2004) and tennis players (Rees & Hardy, 2004).

Recently, a flourishing academic debate has evolved regarding the quality of sport research (Culver, 2012; Sparkes, 2015). The point has been made that, despite being ahead of its time in some ways, in many other significant ways sport

psychology has lagged behind the times (Aoyagi, Portenga, Poczwadowski, Cohen, & Statler, 2012). This is particularly true in the case of sport psychology research on stress.

In this article, I will explore three research characteristics relevant to the study of stress in the field of sport psychology. Limitations of each characteristic will be discussed, and future research directions will be suggested.

From non-professional to professional athlete populations

Although sport psychology research initially focused on high-level competitive athletes (Morgan, 1985), most recent studies have been conducted with convenience samples of non-athletes and college students (Swann, Moran, & Piggott, 2015). However, the generalizability of findings from non-athletes to athletes and from amateur athletes to elite athletes has long been questioned by researchers (for further information, see Martin, 2005). Lately, the inconsistency related to the criteria used to define the term “elite” or “expert” athletes has been argued to threaten research validity and its implementation in sports and performance psychology (Swann et al., 2015). For instance, international/national, club/university and beginner-level competitive athletes were studied together in order to gain a large sample in a study on stress experience (Nicholls, Polman, & Levy, 2012). This approach has been criticized for increasing the volume of studies while making real little contribution to advance the knowledge of the psychological functioning of professional athletes. Craft, Magyar, Becker, and Feltz (2003), in their criticism of using the competitive anxiety scale in the non-athletic population, argued that an examination of the relationship between anxiety and performance may increase the volume of research but does little to advance the knowledge and understanding of competitive athletes. Leunes and Burger (2000) indicated similar problems of methodological shortcomings, including sampling, in their review of studies that used the Profile of Mood States (POM) in research within sport and exercise psychology (POMS). Another illustration of why professional and non-professional athletes should not be study as a homogeneous population comes from the study of deliberate practice (Ericsson & Ward, 2007), which refers to the advantages of training in a highly structured manner for efficient skill acquisition and improved performance. In mixed athlete samples, including both sub-elite athletes (who compete at the state/provincial level) and elite athletes (who compete at the national level or a higher level), deliberate practice accounted for 29% of the variance in performance; however, it accounted for only 1% among elite-level athletes. This clearly supports the notion that different factors account for functioning in different levels of athletes (Macnamara, Moreau, & Hambrick, 2016); thus, they should be treated differently.

In addition, the ecology in which athletes are nested not only influences but also dictates specific demands and available resources for the athletes. Consider, for example, a professional basketball player in the first league. He is exposed to a variety of stressors including a tight training schedule, high media exposure, expectations from the club and his agent, and possible frequent moving from one city or state to another upon every contract renewal. Clearly, he is required to cope with different stressors than a second-league basketball player who trains four times a week with low media exposure, plays in a nearby city, and holds a part-time job in a hi-tech company. Obviously, differences in skill and professional levels (i.e., higher vs. lower leagues) affect many facets of an athlete’s life and therefore should be taken into account when exploring stress as well as other psychological processes, as has been

emphasized in the examination of competitive anxiety (Jones, Hanton, & Swain, 1994).

For all these reasons, future research should not compromise on available participants to produce convenient samples. Awareness of athletes' different levels (Swann et al., 2015) will yield valid samples of athletes and, in turn, will enable a better understanding of psychological processes, including stress, among professional athletes. This also requires attention to advanced research designs and statistical methodology (Grimm & Ram, 2011), which bring into consideration the different groups and environments in which athletes are nested (e.g., high- vs. low-ranked teams of clubs). Data gathered from different levels of athletes should be treated and analyzed as independent and reflected in the reported findings.

From narrow focus on performance to whole athlete psychology

The popular sport assertion that “winning isn’t everything, it’s the only thing,” mistakenly associated with the legendary football coach Vince Lombardi (Overman, 1999), demonstrates the narrow focus on performance in sports shared by club managers, coaches, athletes, fans and journalists. However, this widespread perspective toward performance has been claimed to encapsulate what is wrong with competitive sport (Overman, 1999).

Examining the sport psychology literature, it appears that this perspective has also been espoused by psychology researchers, suggesting that performance is the most important aspect of a professional athlete’s life. The high number of studies focused on stress and anxiety related to athletic performance (Beedie, Terry, & Lane, 2000; Martin & Gill, 1991; Pensgaard & Ursin, 1998) suggests that well-being and psychological functioning are secondary and exist only in the service of better performance. For example, elite athletes were instructed to describe stressful experiences that occurred *only* during competitions or Olympic games (Pensgaard & Ursin, 1998), neglecting stressors outside the sports realm. Performance is also emphasized over psychological functioning in studies of sport injuries (Lu & Hsu, 2013; Yang, Peek-Asa, Lowe, Heiden, & Foster, 2010) and sport-related stressors (Mellalieu, Neil, Hanton, & Fletcher, 2009; Neil, Hanton, Mellalieu, & Fletcher, 2011). Indeed, injuries and poor performance might lead professional athletes to encounter losses of prestige, status, money, and sense of self-worth and thus produce distress; however, in addition to “athletic stressors”, many stressors can be categorized as “non-athletic”—that is, occurring outside the athlete’s sport career. Accordingly, sport psychology researchers have been advised to consider the inclusion of both significant life events and ongoing daily stressors when assessing adversity in athletic performers (Sarkar & Fletcher, 2013).

Another major limitation of stress and performance related research concerns the tendency to study performance tasks in isolated from their athletic context. Trying to generalize from isolated experimental laboratory settings to the actual ability to perform under stress has been identified as problematic (Pinder, Davids, Renshaw, & Araújo, 2011). For example, the association between personality, competitive anxiety, somatic anxiety and physiological arousal in athletes with high and low anxiety levels was examined using a computer-simulated soccer match played by participants (Balyan, Tok, Tatar, Binboga, & Balyan, 2016). Again in this case, neglecting the environment in which athletes are nested might result in poor ecological validity. This problem is particularly salient when studying specific performance tasks while using

non-professional athletes, as this paints an inaccurate picture of what influences professional athletic performance. For instance, a study of 122 undergraduate students of sport science (Stoll, Lau, & Stoeber, 2008) was reported elsewhere (Stoeber, 2012) as a field study of undergraduate student athletes. Furthermore, the field study required the performance of a new basketball-training task, the relevance of which to the participants is unclear, since no data were included about their sport practice or athletic status (if any).

It should also be recognized that the consequences of performance-focused research go beyond the research and affect the practice field, as such research dictates somewhat limited interventions for professional athletes. Currently, intervention strategies are usually also performance-related (Sullivan & Nashman, 1998) and mostly stem from cognitive behavioral therapy, aiming for quick and concrete changes while developing and empowering the athletes to change their maladaptive thought processes (Poczwadowski, Sherman, & Ravizza, 2004). As a result, important interventions, such as those aimed at enhancing athletes' well-being, have received less attention, and they are frequently perceived as relevant to the context of exercise psychology (suggested as a sub-discipline of health psychology) rather than to the context of sport psychology (suggested as a sub-discipline of performance psychology; see Portenga et al., 2011). The focus on performance in professional sport research and its impact on consultation has been recognized by an increasing number of sport psychologists taking a holistic perspective in their practice (Friesen & Orlick, 2010; Nahum, 2016).

Future research should stem from more holistic theories of human stress processing. For example, I suggest the use of Conservation of Resources theory (COR theory; Hobfoll, 1988, 1989, 1998), one of the most influential theories in the field of stress and human motivation. COR theory postulates that people are motivated to obtain, retain, protect and foster that which they value, as well as that psychological stress will occur as a reaction to an environment in which there is a threat of or actual resource loss (or a lack of resource gain following investment). Therefore, this theory is suitable to further illuminate and advance our understanding of stress in the sport environment, since it allows us to take into account the context or unique environment in which the athlete is nested, where resources such as self-value, status, health and financial aid are constantly challenged.

Another promising direction might be the assimilation of dynamic and clinical psychology in future research on sports stress and anxiety. The importance of clinical psychology to holistic athlete development has been widely neglected, with clinical psychology usually connected merely to athletes' psychopathology (Stainback, Moncler, & Taylor, 2007). However, it can draw a rich picture of the athlete's whole subjective experience, which has not yet been sufficiently addressed in the sport literature. For example, the use of Kohut's (1971, 1977, 1984) theory of self-psychology has been suggested (Nahum, 2016). This theory emphasizes sense of value and narcissistic needs as important factors in human development and functioning – obviously a highly relevant conceptualization for understanding stress and anxiety in competitive sport.

From between- to within-athletes differences

Another limitation in the study of stress among athletes is related to the focus on mostly between-athletes differences rather than differences within athletes. The preference in sport psychology and other fields for comparing differences between groups in order to generalize human behavior rather than in-depth study of individual

athletes has been previously illuminated by Martens (1987). However, this view is not limited to sports; similarly, personality research is mostly focused on between-person differences (Wood & Beckmann, 2006), and the same approach is common in other performance-demanding environments, such as that of organization psychology, where the study of employees is mostly dominated by the trait approach (Xanthopoulou, Bakker, & Ilies, 2012). Even in the field of positive psychology (Seligman & Csikszentmihalyi, 2000), happiness has been mainly ascribed to individual differences, in spite of the great potential to enhance well-being by exploring in-person changes (Luthans, 2002).

In sport stress research, this preference partly stems from the acceptance of Lazarus' conceptions of stress and emotion (Neil et al., 2011). Lazarus and Folkman's theory (1984) of individual differences in appraisal goes hand in hand with a common sportsman perspective that perception is crucial to performance (as reflected in the popular Jimmy Connors quote that "tennis is 90% mental"). This perspective has encouraged researchers to try to identify the unique disposition that makes an athlete a champion—exploration that was clearly dominated by the trait approach (Coulter, Mallett, Singer, & Gucciardi, 2016). And indeed, seeking athletes' dispositions that enable athletic success underlines many empirical investigations of traits among athletes (Barrell & Terry, 2003; Tok, Binboğa, Guven, Çatikkas, & Dane, 2013), including the five-factor model of personality (Costa & McCrae, 1992) as a predictor of athletic performance (Piedmont, Hill, & Blanco, 1999). However, many researchers believe that this research direction has not been as successful as expected and has not yielded useful findings (Diane & Williams, 2008; Vealey, 2002). Therefore, sport psychology research has shifted toward more specific foci, such as trait anxiety or optimism, while failing to progress to the level of systematic research synthesis (Allen, Greenlees, & Jones, 2013). Consequently, detachment from the whole athlete perspective has increased (Coulter et al., 2016), as described in the previous topic.

Although individual differences are important, this research trend has limitations, which were addressed more than 35 years ago in Morgan's (1980) classic article "The Trait Psychology Controversy", which criticized sport psychology research for studying large groups superficially rather than individuals in depth. Obviously, both trait and state dispositions deserve research attention when trying to understand the antecedents of stress; however, measuring the fluctuation of state (vs. trait) dispositions is highly important for several reasons. First, more intra-individual personality structure exploration will advance our knowledge of individuals' well-being and performance (Cervone, Shadel, Smith, & Fiori, 2006). As suggested by a recent study (Xanthopoulou et al., 2012), treating psychological variables as a dynamic phenomenon might lead to success to capture within-person fluctuations (Bakker & Xanthopoulou, 2009) and with the ability to better explain stress and, in turn, performance and well-being. Second, in addition to theoretical advantages of within-person exploration, there are obvious methodological advantages, since such exploration reduces measurement biases and leads to a stronger evaluation of causal effects.

Further research should be more dedicated to the exploration of state-like dispositions within individuals, which will provide a better explanation of the dynamic psychological processes that enable coping with stress, enhancing performance and fostering well-being. Understanding not only why some people thrive more than others but also what enables a particular individual to thrive may offer a real contribution to the emerging field of sport psychology. In addition,

embracing other personality paradigms (Wiggins, 2003) will better clarify the affect of environmental factors and will impose more responsibility upon the community and social milieu (e.g., club managers, coaching staff) to provide favorable conditions for individuals to thrive.

Summary

Sport psychology is a new and exciting field in psychology. As an emerging field, research in this area is still in its early stages, as reflected in its volume and methodology. Although criticism on the quality, assumptions, and methods of sport psychology research is not new (Martens, 1987; Morgan, 1980), these issues have recently drawn increased attention, and a flourishing academic debate has started to evolve regarding the quality of sport research (Culver et al., 2012; Holt & Tamminen, 2010; Sparkes, 2015; Weed, 2010).

Three future research directions were discussed: 1) the exploration of more homogenous samples of professional athletes according to their professional levels; 2) the adoption of a more holistic focus on the whole athletes' personalities and life contexts as opposed to merely on performance or specific foci; and 3) the exploration of state-like traits and within-athlete psychological changes as antecedents and results of the stress process.

Applying these suggested approaches carries the potential to produce better research and, thus, to advance our knowledge of the stress process (and its related variables, such as performance and well-being) among professional athletes in particular, as well as among other individuals who are required to perform in demanding environments.

To date, several theories have served as theoretical frameworks in sport psychology, including Lazarus and Folkman's (1984) transactional model of stress appraisal and coping, which is probably the most prevalent theory in sport psychology stress research. It has been suggested that new theories of stress can enrich both the research and the practice of psychologists working with professional athletes. These can include psychodynamic theories of self-value like Kohut's (1971, 1977, 1984) theory of self-psychology, which is highly relevant to the competitive environment of sports, or alternative theories of stress like Hobfoll's (1988, 1989, 1998) Conservation of Resources theory. Applying advances in stress research to sport psychology can also help to merge academic research and psychologists' practice, two elements that have long been argued to diverge rather than converge in sport psychology (Martens, 1987; Weinberg, 1989).

References

- Allen, M. S., Greenlees, I., & Jones, M. (2013). Personality in sport: a comprehensive review. *International Review of Sport and Exercise Psychology*, 6(1), 184–208. <http://doi.org/10.1080/1750984X.2013.769614>
- Aoyagi, M. W., Portenga, S. T., Poczwadowski, A., Cohen, A. B., & Statler, T. (2012). Reflections and directions: The profession of sport psychology past, present, and future. *Professional Psychology: Research and Practice*, 43(1), 32–38. <http://doi.org/10.1037/a0025676>
- Bakker, A. B., & Xanthopoulou, D. (2009). The crossover of daily work engagement: test of an actor-partner interdependence model. *The Journal of Applied Psychology*, 94(6), 1562–1571. <http://doi.org/10.1037/a0017525>
- Balyan, K. Y., Tok, S., Tatar, A., Binboga, E., & Balyan, M. (2016). The Relationship among Personality, Cognitive Anxiety, Somatic Anxiety, Physiological Arousal, and Performance in Male Athletes. *Journal of Clinical Sport Psychology*, 10(1), 48–58. <http://doi.org/10.1123/jcsp.2015-0013>
- Barrell, G. M., & Terry, P. C. (2003). Trait anxiety and coping strategies among ballet dancers. *Medical Problems of Performing Artists*, 18(2), 59–64.
- Beedie, C. J., Terry, P. C., & Lane, A. M. (2000). The profile of mood states and athletic performance: Two meta-analyses. *Journal of Applied Sport Psychology*, 12(1), 49–68. <http://doi.org/10.1080/10413200008404213>
- Cervone, D., Shadel, W. G., Smith, R. E., & Fiori, M. (2006). Self-regulation: Reminders and suggestions from personality science. *Applied Psychology*, 55(3), 333–385. <http://doi.org/10.1111/j.1464-0597.2006.00261.x>
- Costa, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences*, 13(6), 653–665. [http://doi.org/10.1016/0191-8869\(92\)90236-I](http://doi.org/10.1016/0191-8869(92)90236-I)
- Coulter, T. J., Mallett, C. J., Singer, J. a., & Gucciardi, D. F. (2016). Personality in sport and exercise psychology: Integrating a whole person perspective. *International Journal of Sport and Exercise Psychology*, 14(1), 23–41. <http://doi.org/10.1080/1612197X.2015.1016085>
- Craft, L. L., Magyar, T. M., Becker, B. J., & Feltz, D. L. (2003). The Relationship between the Competitive State Anxiety Inventory-2 and Sport Performance: A Meta-Analysis. *Journal of Sport and Exercise Psychology*, 25(1), 44–65. <http://doi.org/10.1123/jsep.25.1.44>
- Culver, D. M., Gilbert, W., & Sparkes, A. (2012). Qualitative Research in Sport Psychology Journals: The Next Decade 2000-2009 and Beyond. *The Sport Psychologist*, 26(2), 261–281. <http://doi.org/10.1123/tsp.26.2.261>
- Diane, G., & Williams, L. (2008). Personality. In *Psychological dynamics of sport and exercise* (Third Edit, pp. 37–56). Champaign, IL: Human Kinetics.
- Ericsson, K. A., & Ward, P. (2007). Capturing the Naturally Occurring Superior Performance of Experts in the Laboratory: Toward a Science of Expert and Exceptional Performance. *Current Directions in Psychological Science*, 16(6), 346–350. <http://doi.org/10.1111/j.1467-8721.2007.00533.x>
- Friesen, A., & Orlick, T. (2010). A Qualitative Analysis of Holistic Sport Psychology

- Consultants' Professional Philosophies. *The Sport Psychologist*, 24(2), 227–244. <http://doi.org/10.1123/tsp.24.2.227>
- Giacobbi, P., Foore, B., & Weinberg, R. S. (2004). Broken Clubs and Expletives: The Sources of Stress and Coping Responses of Skilled and Moderately Skilled Golfers. *Journal of Applied Sport Psychology*, 16(2), 166–182. <http://doi.org/10.1080/10413200490437688>
- Grimm, K. J., & Ram, N. (2011). Modeling change over time. In G. Tenenbaum, R. C. Eklund, & A. Kamata (Eds.), *Measurement in sport and exercise psychology* (pp. 65–74).
- Hobfoll, S. E. (1988). *The ecology of stress. The ecology of stress*. Taylor & Francis.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513–524. <http://doi.org/10.1037/0003-066X.44.3.513>
- Hobfoll, S. E. (1998). *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum.
- Holt, N. L., & Hogg, J. M. (2002). Perceptions of stress and coping during preparations for the 1999 women's soccer world cup final. *The Sport Psychologist*, 16, 251–271., 251–271.
- Holt, N. L., & Tamminen, K. A. (2010). Moving forward with grounded theory in sport and exercise psychology. *Psychology of Sport and Exercise*, 11(6), 419–422. <http://doi.org/10.1016/j.psychsport.2010.07.009>
- Jones, G., Hanton, S., & Swain, A. (1994). Intensity and interpretation of anxiety symptoms in elite and non-elite sports performers. *Personality and Individual Differences*, 17(5), 657–663.
- Kohut, H. (1971). *The Analysis of the Self* New York: Int. Univ. Press.
- Kohut, H. (1977). *The Restoration of the Self*. New York (International Universities Press) 1977.
- Kohut, H. (1984). *How does analysis cure Chicago*. Univ. Chicago Press.
- Lazarus, R. S., & Folkman, S. (1984). The Stress Concept in the Life Sciences. In *Stress, appraisal, and coping* (pp. 1–21).
- Leunes, A., & Burger, J. (2000). Profile of Mood States Research in Sport and Exercise Psychology: Past, Present, and Future. *Journal of Applied Sport Psychology*, 12(1), 5–15. <http://doi.org/10.1080/10413200008404210>
- Lu, F. J. H., & Hsu, Y. (2013). Injured athletes' rehabilitation beliefs and subjective well-being: The contribution of hope and social support. *Journal of Athletic Training*, 48(1), 92–98. <http://doi.org/10.4085/1062-6050-48.1.03>
- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior*, 23(6), 695–706. <http://doi.org/10.1002/job.165>
- Macnamara, B. N., Moreau, D., & Hambrick, D. Z. (2016). The relationship between deliberate practice and performance in sports: A meta-analysis. *Perspectives on Psychological Science*, 11(3), 333–350. <http://doi.org/10.1177/1745691616663591>
- Martens, R. (1987). Science, Knowledge, and Sport Psychology. *The Sport Psychologist*,

1(1), 29–55. <http://doi.org/10.1123/tsp.1.1.29>

- Martin, G. L. (2005). Experimental Studies of Psychological Interventions With Athletes in Competitions: Why So Few? *Behavior Modification*, 29(4), 616–641. <http://doi.org/10.1177/0145445503259394>
- Martin, J. J., & Gill, D. L. (1991). The Relationships Among Competitive Orientation, Sport-Confidence, Self-Efficacy, Anxiety, and Performance. *Journal of Sport and Exercise Psychology*, 13(2), 149–159. <http://doi.org/10.1123/jsep.13.2.149>
- McGrath, J. E. (1970). A conceptual formulation for research on stress.. *Social and Psychological Factors in Stress*, 10(21).
- McKay, J., Niven, A. G., Lavalley, D., & White, A. (2008). Sources of Strain among Elite UK Track Athletes. *The Sport Psychologist*, 22(2), 143–163. <http://doi.org/10.1123/tsp.22.2.143>
- Mellalieu, S. D., Neil, R., Hanton, S., & Fletcher, D. (2009). Competition stress in sport performers: stressors experienced in the competition environment. *Journal of Sports Sciences*, 27(7), 729–744. <http://doi.org/10.1080/02640410902889834>
- Morgan, W. P. (1980). Trait psychology controversy. *Research Quarterly for Exercise and Sport*, 51, 50–76.
- Morgan, W. P. (1985). Selected Psychological Factors Limiting Performance: A Mental Health Model. In *Limits of Human Performance* (p. 70–80).
- Nahum, O. (2016). *Clinical Sport Psychology - Beyond Performance and Psychopathology. Oral presentation conducted at the Annual Stress and Anxiety Research Association. Zagreb, Croatia.*
- Neil, R., Hanton, S., Mellalieu, S. D., & Fletcher, D. (2011). Competition stress and emotions in sport performers: The role of further appraisals. *Psychology of Sport and Exercise*, 12(4), 460–470. <http://doi.org/10.1016/j.psychsport.2011.02.001>
- Nicholls, A. R., Polman, R. C. J., & Levy, A. R. (2012). A path analysis of stress appraisals, emotions, coping, and performance satisfaction among athletes. *Psychology of Sport and Exercise*, 13(3), 263–270. <http://doi.org/10.1016/j.psychsport.2011.12.003>
- Overman, S. J. (1999). “Winning Isn’t Everything, It’s The Only Thing”, the Origin, Attribution, and Influence of a Famous Football Quote. *Football Studies*, 2(2), 77–99.
- Pensgaard, A. M., & Ursin, H. (1998). Stress, control, and coping in elite athletes. *Scandinavian Journal of Medicine & Science in Sports*, 8(3), 183–189. <http://doi.org/10.1111/j.1600-0838.1998.tb00190.x>
- Piedmont, R. L., Hill, D. C., & Blanco, S. (1999). Predicting athletic performance using the five-factor model of personality. *Personality and Individual Differences*, 27(4), 769–777. [http://doi.org/10.1016/S0191-8869\(98\)00280-3](http://doi.org/10.1016/S0191-8869(98)00280-3)
- Pinder, R. a, Davids, K., Renshaw, I., & Araújo, D. (2011). Representative Learning Design and Functionality of Research and Practice in Sport. *Journal of Sport and Exercise Psychology*, 33(1), 146–155. <http://doi.org/10.1123/jsep.33.1.146>
- Poczwadowski, A., Sherman, C. P., & Ravizza, K. (2004). Professional Philosophy in the Sport Psychology Service Delivery: Building on Theory and Practice. *The Sport Psychologist*, 18(4), 445–463. <http://doi.org/10.1123/tsp.18.4.445>

- Portenga, S. T., Aoyagi, M. W., Balague, G., Cohen, A., & Harmison, B. (2011). Defining the practice of sport and performance psychology. *Manuscript submitted for publication*.
- Rees, T., & Hardy, L. (2004). Matching social support with stressors: Effects on factors underlying performance in tennis. *Psychology of Sport and Exercise, 5*(3), 319–337. [http://doi.org/10.1016/S1469-0292\(03\)00018-9](http://doi.org/10.1016/S1469-0292(03)00018-9)
- Samuel, R. D., & Tenenbaum, G. (2011). How do athletes perceive and respond to change-events: An exploratory measurement tool. *Psychology of Sport and Exercise, 12*(4), 392–406. <http://doi.org/10.1016/j.psychsport.2011.03.002>
- Sarkar, M., & Fletcher, D. (2013). How Should We Measure Psychological Resilience in Sport Performers? *Measurement in Physical Education and Exercise Science, 17*(4), 264–280. <http://doi.org/10.1080/1091367X.2013.805141>
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5–14. <http://doi.org/10.1037//0003-066X.55.1.5>
- Sparkes, A. C. (2015). Developing mixed methods research in sport and exercise psychology: Critical reflections on five points of controversy. *Psychology of Sport and Exercise, 16*(P3), 49–59. <http://doi.org/10.1016/j.psychsport.2014.08.014>
- Stainback, R. D., Moncler, J. C., & Taylor, R. E. (2007). Sport psychology: A clinicians perspective. *Handbook of Sport Psychology, 310–331*.
- Stoeber, J. (2012). Perfectionism and performance. In S. M. Murphy (Ed.), *The Oxford handbook of sport and performance psychology* (pp. 294–306). New York: Oxford University Press.
- Stoll, O., Lau, A., & Stoeber, J. (2008). Perfectionism and performance in a new basketball training task: Does striving for perfection enhance or undermine performance? *Psychology of Sport and Exercise, 9*(5), 620–629. <http://doi.org/10.1016/j.psychsport.2007.10.001>
- Sullivan, P. A., & Nashman, H. W. (1998). Self-Perceptions of the Role of USOC Sport Psychologists in Working with Olympic Athletes. *The Sport Psychologist, 12*(1), 95–103. <http://doi.org/10.1123/tsp.12.1.95>
- Swann, C., Moran, A., & Piggott, D. (2015). Defining elite athletes: Issues in the study of expert performance in sport psychology. *Psychology of Sport and Exercise, 16*(P1), 3–14. <http://doi.org/10.1016/j.psychsport.2014.07.004>
- Tok, S., Binboğa, E., Guven, S., Çatikkas, F., & Dane, S. (2013). Trait emotional intelligence, the Big Five personality traits and isometric maximal voluntary contraction level under stress in athletes. *Neurology Psychiatry and Brain Research, 19*(16), 133–138. <http://doi.org/10.1016/j.npbr.2013.04.005>
- Vealey, R. S. P. and sport behavior. (2002). Personality and sport behavior. In T. Horn (Ed.), *Advances in Sport Psychology* (2nd ed., pp. 43–82). Champaign, IL: Human Kinetics.
- Weed, M. (2010). A quality debate on grounded theory in sport and exercise psychology? A commentary on potential areas for future debate. *Psychology of Sport and Exercise, 11*(6), 414–418. <http://doi.org/10.1016/j.psychsport.2010.07.001>
- Weinberg, R. S. (1989). Applied sport psychology: Issues and challenges. *Journal of Applied Sport Psychology, 1*(2), 181–195. <http://doi.org/10.1080/10413208908406414>
- Wiggins, J. S. (2003). Paradigms of personality assessment: An interpersonal odyssey.

Journal of Personality Assessment, 80(1), 11–18.
http://doi.org/http://dx.doi.org/10.1207/S15327752JPA8001_08

Wood, R. E., & Beckmann, N. (2006). Personality architecture and the FFM in organisational psychology. *Applied Psychology*, 55(3), 453–469. <http://doi.org/10.1111/j.1464-0597.2006.00263.x>

Xanthopoulou, D., Bakker, A. B., & Ilies, R. (2012). Everyday working life: Explaining within-person fluctuations in employee well-being. *Human Relations*, 65(9), 1051–1069. <http://doi.org/10.1177/0018726712451283>

Yang, J., Peek-Asa, C., Lowe, J. B., Heiden, E., & Foster, D. T. (2010). Social support patterns of collegiate athletes before and after injury. *Journal of Athletic Training*, 45, 372–379. <http://doi.org/10.4085/1062-6050-45.4.372>