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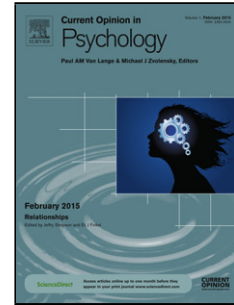
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## Accepted Manuscript

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**Athlete burnout: Review and recommendations**

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**Highlights**

- \*Prevalence is unknown due to a lack of predefined criteria (i.e., diagnostic cut-offs).
- \*Negative social experiences promote the risk of burnout.
- \*Perfectionistic concerns are an important risk factor for athlete burnout.
- \*Prevention research is lacking but findings from job burnout can provide guidelines.

**Abstract**

Over the last two decades, growing concerns regarding the negative implications of athlete burnout have spurred empirical research on the topic. In their citation network analysis of the burnout literature, Gustafsson, Hancock and Coté, cited well over 100 publications on the syndrome [1]. Despite considerable investigation into athlete burnout, there remain a number of unresolved questions and issues. Four main aims guide the current review. First, we highlight various models of athlete burnout. Second, we discuss the measurement of athlete burnout. Third, we describe the symptoms, antecedents, and consequences of athlete burnout with a focus on social perceptions and perfectionism. Finally, we provide suggestions for the prevention and treatment of athlete burnout via an illustration of links between theory and practice. It is our hope that this review can stimulate future research in order to help athletes avoid burnout and other severe forms of training maladaptation.

Keywords: stress, elite sports, social perceptions, perfectionism, coach, CBT

## **Introduction**

Burnout in athletes is associated with many negative outcomes including decreased motivation, reduced performance, and ultimately sport dropout [1]. As such, research on athlete burnout is of great interest to coaches, managers and sport organizations. Athlete burnout is generally defined as a cognitive-affective syndrome comprised of emotional and physical exhaustion, a reduced sense of accomplishment, and sport devaluation [2]. Emotional and physical exhaustion are characterized by the perceived depletion of emotional and physical resources resulting from training and/or competition. Reduced sense of accomplishment is typified by an inclination to negatively evaluate one's sporting abilities and achievements. Finally, sport devaluation reflects the development of a cynical attitude towards sport participation. Empirical evidence has led some scholars to suggest that exhaustion lies at the center of the syndrome [3,4]. Conceptual understanding of athlete burnout has been gleaned from the use of several models which have guided extant research efforts. Limitations of the current knowledge include a lack of information regarding the prevalence of burnout, an over-reliance on cross-sectional, correlational designs, and limited research focused on treatment and prevention. This review will discuss these issues and provide suggestions for potential future research.

### **Conceptual Models and Theories Guiding Athlete Burnout Research**

In an early conceptual effort, Smith [5\*] proposed a Cognitive-Affective Stress Model in which he suggested that burnout developed via a stress-based process influenced by personality and motivational factors. First, the athlete is exposed to demands such as high training loads or excessive performance expectations. Next, the athlete makes a cognitive appraisal of the situation relative to his/her ability to respond to these demands. The athlete's interpretation of his/her ability to meet these demands leads to a physiological response, which in turn, leads to behavioral and coping responses. Such responses may include athlete

burnout. This model has been the most cited model of athlete burnout [1] with research supporting perceived psychological stress to be a consistent, positive predictor of burnout-related perceptions in athletes [6].

A second conceptual perspective of athlete burnout was proposed by Coakley [7], who argued that stress is not the cause of burnout, but rather a symptom. Specifically, he suggested that the social organization of sport causes athletes to experience a lack of control over their sport participation which precludes the development of multi-faceted identities (e.g., student, friend) and instead promotes a unidimensional athletic identity. Coakley argued that a unidimensional athletic identity combined with a lack of control leads athletes to experience burnout. Research has partly but not fully supported Coakley's assumptions [8, 9].

As an alternative perspective to stress-based models, sport commitment was also proposed as an important factor in the development of athlete burnout [9,10]. Athletes whose sport commitment is based on feelings of entrapment are said to be participating in sport because they believe they "have to", rather than "want to". According to this perspective, athletes who develop burnout, do so because they are committed to sport solely for reasons of entrapment [9], an idea which has received empirical support via entrapment-based athlete profiles predicting burnout symptoms in athlete populations [9\*\*].

Finally, a more recent theoretical framework used to understand athlete burnout is Self-Determination Theory (SDT) [11]. According to SDT, the satisfaction of the core human needs of autonomy (perceptions of control and self-endorsement of an activity), competence (perceptions of proficiency), and relatedness (connection with others), are fundamental for optimal psychological well-being and human functioning. Conversely, thwarting of these needs is posited to promote negative outcomes of health and well-being including burnout [12]. Moreover, according to SDT, motivational states exist along a self-determination continuum with amotivation (i.e., the state of lacking the intention to act) representing the

least self-determined form of motivation, and intrinsic motivation (i.e., participating for the enjoyment of the activity itself) reflecting the highest level of self-determination. Studies supporting the use of this theoretical framework to understand burnout have shown that burnout is positively associated with amotivation and negatively associated with intrinsic motivation [13,14].

As the aforementioned models all explain some variance in athlete burnout, Gustafsson and colleagues [15\*\*] incorporated aspects from all of these models into an Integrated Model of Athlete Burnout. This integrated, pedagogical model includes antecedents, early signs, and consequences including personality, coping, and environmental factors. The integrated model provides a holistic conceptual framework for understanding athlete burnout helping sport scientists, coaches, and practitioners alike in understanding and preventing this maladaptive psychological outcome in athlete populations.

### **Measurement of Athlete Burnout**

Athlete burnout research has been hampered historically by a lack of validated domain-specific measures [16,17\*\*]. Thus, an important contribution to the study of burnout was the development of the Athlete Burnout Questionnaire (ABQ) [9\*\*,17\*\*], which was the first validated sport-specific measure of athlete burnout. The ABQ was adapted (to sport) from the Maslach Burnout Inventory (MBI) [18], a measure of occupational burnout. The ABQ has exhibited good reliability and validity in a range of athlete populations [2]. As with occupational burnout, measures of athlete burnout are diagnostically limited since they do not include predefined criteria (i.e., cut-offs) for determining when an athlete is suffering from more severe manifestations of burnout [3]. Thus, current estimates of burnout rates across sports are approximations at best. Based on arbitrary statistical criteria an estimation of the prevalence has been suggested to be between 1 and 9%, with 1-2% displaying high levels of burnout [19]. Moving forward, the development of sport-specific diagnostic cut-offs for the



ABQ are needed for improved clinical diagnosis and to gain a clearer picture of the prevalence of burnout across sport types and sport levels. However, future research is required to explore the underlying structure of burnout scores from the ABQ to determine if scores fall on a continuum or if, indeed, categories (i.e., cut-offs) can be differentiated. In order to achieve this, future studies may want to utilise taxometric analysis techniques, to address the potential validity of cut-offs relative to clinical symptoms [20].

Future research is also needed to investigate the consequences of those endorsing high levels of burnout symptoms, as the bulk of sport research is based on samples of athletes endorsing low-to-moderate levels of burnout symptoms (as indicated by ABQ scores). One way to handle this problem is to adopt a person-centered approach where individuals are viewed holistically and considered as whole entities, rather than focusing on one or few individual characteristics [21\*]. By adopting a person-centered approach one can find groups of athletes that are characterized by distinct “burnout profiles”. This can be a complement to the more commonly used variable approach and useful in future research [22].

### **Potential Antecedents, Consequences and Protective Factors**

Burnout has been shown to lead to a range of deleterious psychophysiological and behavioral outcomes. For example, negative consequences associated with burnout include: depressed mood [23\*], psychological stress [24][25], and negative affect [14]. It has also been suggested that burnout leads to a withdrawal from sport altogether [5,26]. Moreover, adaptive psychological constructs such as coping skills [25], hope [27], perceived control [9], and optimism [24] are negatively associated with burnout.

A large body of evidence has also accrued suggesting personality that factors are associated with athlete burnout [6]. One such personality factor is perfectionism [28]. Importantly, perfectionism is multidimensional and two higher-order dimensions should be differentiated: *perfectionistic strivings* reflecting perfectionist personal standards and a self-

oriented striving for perfection and *perfectionistic concerns* reflecting concerns about making mistakes, feelings of discrepancy between one's standards and performance, and fears of negative evaluation and rejection by others if one fails to be perfect [29].

A recent meta-analysis found perfectionistic concerns to be associated with higher levels of burnout and perfectionistic strivings to be associated with lower levels [28]. Moreover, it has been found that perfectionism also predicts changes in burnout over time [30\*\*, 31]. In this research, perfectionistic concerns predict increases in burnout, whereas perfectionistic strivings predict decreases. Researchers have investigated, factors that may serve to mediate the relationship between perfectionism and burnout. A number of possible mediators have been investigated including, unconditional self-acceptance, validation seeking, and coping [32]. In the only longitudinal study of mediational processes, Madigan, Stoeber, and Passfield [33\*\*] showed that autonomous motivation mediated the relationship between perfectionistic strivings and burnout at both the between- and within-person levels, whereas controlled motivation mediated the relationship between perfectionistic concerns and burnout at the between-level only. Taken together, these findings suggest that perfectionism precedes athlete burnout in time and in so doing further suggest that perfectionism may be a contributing factor to the development of burnout. However, this effect appears to be only the case for perfectionistic concerns, as perfectionistic strivings are linked with decreases in athlete burnout and, therefore, may serve as a protective factor.

Beyond psychological constructs specifically proposed by the aforementioned burnout models (i.e., stress, identity control, commitment), social perceptions have been shown to be associated with the burnout-related perceptions of athletes in extant research. Specifically, social support and high quality coach-athlete relationships have been shown to be negatively associated with burnout [34\*\*, 35]. Whereas markers of perceived negative social interactions, including peer conflict [36], and controlling behaviors from coaches [37] have

been shown to be positively associated with burnout. Much of this work has been cross-sectional, yet, a recent study found support for these associations using a longitudinal study design (i.e., four in-season time points) in a sample of American collegiate swimming and track and field athletes [38\*\*]. Altogether, extant research supports social support as preventing and negative social experiences as promoting the risk of burnout in athletes.

### **Prevention and Treatment of Burnout in Athletes**

The development of burnout in athletes is a very personal experience and can be influenced by a variety of antecedents [39]. As such, there are many areas to focus potential prevention and treatment strategies. Research using Cognitive Behavioral Therapy (CBT) indicates that these interventions are effective at reducing signs of burnout [40]. Developments in the third wave of CBT [41] suggest that mindfulness and acceptance are important integrated elements that should be considered in burnout prevention and treatment. Research with athletes suggests that dispositional mindfulness has been negatively associated with athlete burnout [42] and experiential avoidance appears to mediate this relationship [43]. Studies of mindfulness-based interventions [44] and Acceptance Commitment Therapy [45] have shown positive effects in alleviating burnout in health care providers. Descriptions of interventions in sport are limited [46], however, being able to stay in the present moment and avoid rumination appear to be effective ways to reduce stress and anxiety. Furthermore, based on the findings of research on perfectionism and burnout, perfectionistic concerns may be a risk factor predisposing athletes to burnout. In order to reduce the risk of burnout, practitioners may want to reduce perfectionistic concerns in the athletes they work with. There is evidence from clinical studies that cognitive-behavioral interventions and guided self-help can reduce perfectionistic concerns [47]. Though further studies are required to test the efficacy of such interventions in athletes, [48] CBT and mindfulness-based interventions could be of great interest for the prevention and treatment of burnout symptoms.

In addition, organizational factors have been suggested to be vital in the prevention of burnout in athletes [49]. Adapting the job-person fit model [50] to sport, it is postulated that the congruence between the athlete and the team/organization on the six areas of worklife is associated with fewer burnout-related perceptions by athletes. These areas are workload, control, reward, community, fairness, and values. Research in sport has shown promising results, where these theoretical assumptions were supported in athlete populations [34]. Moving forward, these findings indicate a pathway for applied research on a selected set of potential organizational strategies with potential to prevent burnout in athletes.

### **Conclusion and Future Research**

As highlighted, the experience of burnout has detrimental implications for athletes and is therefore an issue worthy of concern among coaches, administrators, parents, and athletes. Several theoretical models have been proposed to better understand the burnout experience, and, although each model has received some empirical support, the integrated model may be the most useful in pedagogically explaining burnout to coaches, clinicians and athletes. It should be noted, however, that the bulk of the aforementioned research is cross-sectional and thus precludes scholars from drawing conclusions regarding the temporal and causal nature of proposed relationships. Although researchers have begun to utilize more sophisticated analyses [33], further longitudinal work is needed to elucidate the direction of relationships between proposed antecedents, burnout, and its associated consequences. As an example, evidence using longitudinal study designs suggests burnout is relatively unstable over short time periods (e.g., six months) [33] and over longer time periods (e.g., five years) [51]. Moreover, recent research suggests that the dimensions of burnout may not develop in tandem. For example, there is evidence that a reduced sense of accomplishment may precede emotional/physical exhaustion and devaluation in time [52\*\*]. Therefore, more research investigating the temporal relationships between the three dimensions of burnout is required.

Given the lack of established clinical cut-offs within burnout measures, the number of athletes afflicted with burnout also still remains unknown. Continued development of valid and reliable diagnostic measures of burnout is therefore needed. Finally, very little research on prevention and treatment has been conducted, organizational and CBT based interventions used for stress and burnout reduction outside the sport domain may, however, provide useful guidelines for practitioners attempting to reduce and/or prevent burnout in the sport domain. Despite significant advances in athlete burnout research, it is evident that more work is needed to reduce the likelihood of athletes developing burnout and to promote more positive psychological outcomes of health and well-being for those investing mental and physical energy into sport participation.

## References

- [1] Gustafsson H, Hancock DJ, Côté, J: Describing citation structures in sport burnout literature: A citation network analysis. *Psychol Sport Exerc* 2014, 15: 620-626.
- [2] Raedeke TD, Smith AL: *The athlete burnout questionnaire manual*. Morgantown, WV: Fitness Information Technology; 2009.
- [3] Gustafsson, H, Lundkvist, E, Podlog, L, Lundqvist C: Conceptual Confusion and Potential Advances in Athlete Burnout Research. *Percept Mot Skills* 2016, 1-8
- [4] Maslach C, Schaufeli WB, Leiter MP: Job burnout. *Annu Rev Psychol* 2001, 52: 397-422.
- [5] \*Smith RE. Toward a cognitive-affective model of athletic burnout. *J Sport Psychol* 1986, 8: 36–50.
- The most cited paper on athlete burnout and the most influential burnout model.
- [6] Goodger K, Gorely T, Lavalley D, Harwood C: Burnout in Sport: A systematic review. *Sport Psychol* 2007, 21: 127-151.
- [7] Coakley J: Burnout among adolescents: a personal failure of a social problem? *Social Sport J* 1992, 9: 271–285.
- [8] Black JM., Smith AL: An examination of Coakley's perspective of identity, control and burnout among adolescent athletes. *Int J Spo Psychol* 2007, 38, 417-436.
- [9] \*\*Raedeke, TD: Is athlete burnout more than stress? A commitment perspective. *J Sport Exerc Psychol* 1997, 19: 396-417.
- An important study in where the most influential definition of athlete burnout was presented.
- [10] Schmidt GW, Stein GL: Sport commitment: A model integrating enjoyment, dropout and burnout. *J Sport Exerc Psychol* 1991, 8: 254-265.
- [11] Ryan RM, Deci EL. Self-Determination Theory and the facilitation of intrinsic motivation, social development, and well-being. *Am Psychol*, 2000, 55: 68-78.

- [12] Li C, Wang C J, Kee YH: Burnout and its relations with basic psychological needs and motivation among athletes: A systematic review and meta-analysis. *Psychol Sport Exerc* 2013, 14: 692-700.
- [13] Lonsdale C, Hodge, K: Temporal ordering of motivational quality and athlete burnout in elite sport. *Med Sci Sports Exerc* 2011, 43: 913-921.
- [14] Lemyre PN, Hall, HK, & Roberts, GC: A social cognitive approach to burnout in elite athletes. *Scand J Med Sci Sports* 2008, 18: 221-234.
- [15] \*\*Gustafsson H, Kenttä G, Hassmén P: Athlete burnout: An integrated model and future research directions. *Int Rev Sport Exerc Psychol* 2011, 4: 3-24.
- Findings from earlier burnout models are integrated and presented into one model of athlete burnout.
- [16] Dale J, Weinberg, R: Burnout in sport: A review and critique. *J Applied Sport Psychol*, 1990, 1: 67-83.
- [17]\*\* Raedeke TD, Smith AL: Development and preliminary validation of an athlete burnout measure. *J Sport Exerc Psychol* 2001, 23: 281–306.
- Development of the most used measure of athlete burnout.
- [18] Maslach C, Jackson SE, Leiter, MP: *Maslach Burnout Inventory. Manual* (3<sup>rd</sup> ed). Consulting Psychologists Press; 1996.
- [19] Gustafsson H, Kenttä G, Hassmén P, Lundqvist C: Prevalence of burnout in adolescent competitive athletes. *Sport Psychol* 2007, 21: 21-37.
- [20] Waller, NG, Meehl, PE. (1998). *Multivariate taxometric procedures: Distinguishing types from continua*, Newberry Park, CA: Sage; 1998.

[21] \*Gustafsson H, Hill AP, Stenling A, Wagnsson S: Profiles of perfectionism, parental climate, and burnout among competitive junior athletes. *Scand J Med Sci Sports* 2016, 26: 1256–1264.

Interesting use of a person-centered approach to investigate perfectionism and parental motivation and the association with burnout.

[22] Gustafsson H, Sagar, SS, Stenling, A: Fear of failure, psychological stress, and burnout among adolescent athletes competing in high level sport. *Scand J Med Sci Sports, in press.*

[23] \*Gustafsson H, Hassmén P, Kenttä G, Johansson M: A qualitative analysis of burnout in elite Swedish athletes. *Psychol Sport Exerc* 2008, 9: 800-816.

A qualitative study based on interviews with burned out elite level athletes providing important information of the burnout experience.

[24] Gustafsson H, Skoog T: The mediational role of stress in the relation between optimism and burnout in competitive athletes. *Anxiety, Stress & Coping* 2012, 25: 183-200.

[25] Raedeke, TD, Smith, AL: Coping resources and athlete burnout: An examination of stress mediated and moderation hypotheses. *J Sport Exerc Psychol*, 2004, 26: 525-541.

[26] Isoard-Gauthier S., Guillet-Descas E, Gustafsson, H: Athlete Burnout and the Risk of Dropout among Young Elite Handball Players. *Sport Psychol.* 30, 123 -130

[27] Gustafsson H, Skoog T, Podlog L, Lundqvist C, Wagnsson S: Hope and athlete burnout: Stress and affect as mediators. *Psychol Sport Exerc* 2013, 14: 640-649.

[28] \*\*Hill AP, Curran T: Multidimensional perfectionism and burnout: A meta-analysis. *Pers Social Psychol Rev* 2016, 20: 269-288.

The study presents a meta-analysis of the relationship between perfectionism and burnout in a number of achievement contexts including sport. A consistent set of relationships was found showing that perfectionistic strivings were negatively associated with athlete burnout, whereas perfectionistic concerns were positively associated.



[29] Stoeber J, Madigan, DJ: Measuring perfectionism in sport, dance, and exercise: Review, critique, recommendations. In A. P. Hill (Ed.), *The psychology of perfectionism in sport, dance and exercise* (pp. 31-56). Routledge. 2016.

[30] \*\*Madigan DJ, Stoeber J, Passfield L: Perfectionism and burnout in junior athletes: A three-month longitudinal study. *J Sport Exerc Psychol* 2015, 37: 305-315.

The first longitudinal study to show that perfectionism predicts changes in athlete burnout over time. Moreover, the study showed that perfectionistic strivings predicted decreases in burnout, whereas perfectionistic concerns predicted increases.

[31] Madigan DJ, Stoeber J, Passfield L: Perfectionism and changes in athlete burnout over three months: Interactive effects of personal standards and evaluative concerns perfectionism. *Psychol Sport Exerc* 2016, 26, 32-39.

[32] Jowett GE, Mallinson-Howard SH, Hill AP: An Independent Effects Approach to Perfectionism in Sport, Dance, and Exercise. In: Hill, Andrew P., (ed.) *The Psychology of Perfectionism in Sport, Dance, and Exercise*. Routledge. 2016.

[33]\*\* Madigan D J, Stoeber J, Passfield L: Motivation mediates the perfectionism burnout relationship: A three-wave longitudinal study with junior athletes. *J Sport Exerc Psychol*(in press).

This study showed that autonomous and controlled motivation help explain the perfectionism-burnout relationship.

[34] \*\*DeFreese JD, Smith AL: Teammate social support, burnout, and self-determined motivation in collegiate athletes. *Psychol Sport Exerce* 2013, 14, 258-265.

First paper to investigate the importance of teammate support in relation to athlete burnout.

[35] Isoard-Gauthier S, Trouilloud D, Gustafsson , Guillet-Descas E: Relations between the perceived quality of the relationship with the coach and athlete burnout: an examination of the mediation role of mastery achievement goals. *Psychol Sport Exerc* 2016, 22: 210-217.

[36] Smith AL, Gustafsson H, Hassmén P: Peer motivational climate and burnout perceptions of adolescent athletes. *Psychol Sport Exerc* 2010, 11: 453-460.

[37] Barcza-Renner K, Eklund R C, Morin AJS, Habeeb CM: Controlling coaching behaviors and athlete burnout: Investigating the mediating roles of perfectionism and motivation. *J Sport Exerc Psychol* 2016, 38: 30-44.

[38] \*\*DeFreese JD, Smith, A L: Athlete social support, negative social interactions, and psychological health across a competitive sport season. *J Sport Exerc Psychol*, 2014, 36: 619-630.

This study provides longitudinal evidence that social support, positively, and negative social interactions, negatively contribute to athlete burnout perception development across a competitive sport season.

[39] Gustafsson H, Kenttä G, Hassmén P, Lundqvist C, Durand-Bush N: The process of burnout: A multiple case study of three elite endurance athletes. *Int J Sport Psychol*, 2007, 38: 388-416.

[40] Lagerveld SE, Blonk RW, Brenninkmeijer, V, Wijngaards-de Meij L, Schaufeli, WB. Work-focused treatment of common mental disorders and return to work: a comparative outcome study. *J Occupational Health Psychology*, 2012, 17: 220-234.

[41] Dimidjian S, Arch JJ, Schneider R L, Desormeau P, Felder, JN, Segal, ZV: Considering Meta-Analysis, Meaning, and Metaphor: A Systematic Review and Critical Examination of “Third Wave” Cognitive and Behavioral Therapies. *Behavior Therapy* 2016.

[42] Gustafsson H, Davis P, Skoog T, Kenttä G, Harberl, P: Mindfulness and its relationship with perceived stress, affect, and burnout in elite junior athletes. *J Clinical Sport Psychol*, 2015, 9: 263-281.

[43] Zhang CQ, Si G, Chung, PK, Gucciardi, DF: Mindfulness and Burnout in Elite Junior Athletes: The Mediating Role of Experiential Avoidance. *J Appl Sport Psychol*, 2016, 1-15.

- [44] Virgili M. Mindfulness-Based Interventions Reduce Psychological Distress in Working Adults: a Meta-Analysis of Intervention Studies. *Mindfulness* 2015, 6: 326.
- [45] Lloyd J, Bond FW, Flaxman PE: The value of psychological flexibility: Examining psychological mechanisms underpinning a cognitive behavioural therapy intervention for burnout. *Work & Stress*, 2013, 27: 181-199.
- [46] Jouper J. Gustafsson H: Mindful recovery: A case study of a burned-out elite shooter. *Sport Psychol*, 2013, 27: 92-102.
- [47] Egan SJ, van Noort E, Chee A, Kane RT, Hoiles KJ, Shafran R, Wade TD: A randomised controlled trial of face to face versus pure online self-help cognitive behavioural treatment for perfectionism. *Behav Res Ther*, 2014, 63: 107–113.
- [48] Gustafsson H, Lundqvist C: Working with perfectionism in elite sport athletes – A cognitive behavior therapy perspective. In A. Hill (Ed.), *Perfectionism in Sport, Dance and Exercise* Routledge. 2016.
- [49] DeFreese JD, Smith AL, Raedeke TD: Individual and Organizational Solutions to Athlete Burnout. In J. M. Williams & V. Krane (Eds.), *Applied Sport Psychology* (pp. 444-461). McGraw-Hill. 2015.
- [50] Maslach C, Leiter MP: Burnout and engagement in the workplace: A contextual analysis. *Advances in Motivation and Achievement*, 1999,11: 275–302
- [51] Isoard-Gautheur S, Guillet-Descas E, Gaudreau P, Chanal J: Development of burnout perceptions during adolescence among high-level athletes: A developmental and gendered perspective. *J Sport Exerc Psychol*, 36: 436-448.
- [52] \*\*Martinent G, Louvet B, Decret JC: Longitudinal trajectories of athlete burnout among young table tennis players: A 3-wave study. *Journal of Sport and Health Science*. 2016.

This longitudinal study found that the 3 dimensions of athlete burnout did not develop in tandem. Instead the athletes perception of reduced sense of accomplishment at time 1 influenced emerging trajectories of sport devaluation and physical/emotional exhaustion.