Examination of reported cognitive appraisal, mental effort, cortisol response and shooting performance

Abstract

Identifying and understanding stressors has become an important area within sport psychology (Thatcher & Day, 2008). Furthermore, it has been suggested that stressors encountered in a sporting situation can have an impact upon performance (Wagstaff, Flectcher & Hanton, 2012); in particular, cognitive appraisals and the resources available to cope with the demands of the task. The Theory of Challenge and Threat in Athletes model (TCTSA; Jones et al, 2009) indicate that neuroendocrine responses such as noradrenaline, adrenaline and cortisol release are associated with Challenge and Threat appraisal within Athletes. In addition it has also been suggested that mental effort will decrease with a Challenge state (Jones et al, 2009), however this has been seldom examined within the literature. The aim of this study was to explore whether there was any association between Challenge and Threat appraisal, mental effort self-report, cortisol response and shooting performance. Thirty nine participants (mean age=25.16, SD=2.01) included within the study gave self-report of Challenge and Threat (Cognitive Appraisal Ratio (CAR); Tomaka et al, 1993) and mental effort (Rating Scale Mental Effort (RSME; Zijstra, 1993). In addition, cortisol responses were measured pre and post a shooting performance task within a laboratory setting. Data analysis suggested there was a significant correlation observed between report on the CAR and cortisol response($r=.38$, $p< 0.05$) and cortisol response and mental effort ($r=-.40$, $p< 0.05$). However there was no significant relationship with performance ($p>0.05$). This data suggested that a decrease in mental effort is potentially associated with Threat based upon cortisol response and self-report of Threat is positively associated with cortisol response. However, performance data is not linked to Challenge, Threat, cortisol response or mental effort in this instance. Further studies should examine adrenaline and cortisol response to self-report measures of stress appraisal and sporting performance.