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Coping Tendencies and Changes in Athlete Burnout Over Time

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Abstract

Burnout can lead to numerous negative outcomes for athletes. While we know a reasonable amount about how athlete burnout develops over time, we know comparably less about the role of coping in this process. The present study aimed to help address this issue by examining the role of coping tendencies in predicting changes in athlete burnout over a six-month period. A sample of 141 junior athletes (mean age = 17.3 years) completed measures of coping tendencies (problem-focused and avoidance coping) and burnout. Participants also completed the measure of burnout on two further occasions, three months and six months after the initial assessment. Conditional latent growth curve modelling revealed that coping tendencies predicted changes in athlete burnout over time. In this regard, avoidance coping predicted increases in athlete burnout, whereas problem-focused coping was unrelated to changes in athlete burnout. These findings provide evidence that an athlete's tendency to use avoidance coping strategies is linked to burnout development over time.

Keywords: appraisal, exhaustion, health, motivation, stress

Introduction

Playing competitive sport can be stressful. Indeed, athletes can experience stressors during and outside of competition, which can result in stress becoming chronic for some people that play sport (Nicholls, Taylor, Carroll, & Perry, 2016). One negative outcome linked to chronic stress is burnout. Burnout is problematic for all athletes, but especially for junior athletes. Not only does burnout disrupt and degrade motivation, it also negatively affects wellbeing (Madigan, Gustafsson, Smith, Raedeke, & Hill, 2019). It is understandable, then, that sport psychologists, sport scientists, and coaches have sought to determine factors involved in the development of athlete burnout. In this regard, several cross-sectional studies have shown that how athletes typically cope with stress (i.e., coping tendencies) correlates with athlete burnout (Hill, Hall, & Appleton, 2010; Pacewicz, Gotwals, & Blanton, 2018; Schellenberg, Gaudreau, & Crocker, 2013). The aim of the present study was to extend this research by examining whether coping tendencies also predict changes in athlete burnout over time. In doing so, we hope to further our understanding of effective coping tendencies so as to help junior athletes avoid or reduce burnout and facilitate long-term participation in sport.

Athlete Burnout

Athlete burnout is a debilitating form of sport disillusionment (Raedeke & Smith, 2001). It comprises three symptoms, namely, a reduced sense of accomplishment, devaluation or cynicism directed at sport, and physical and emotional exhaustion (Raedeke & Smith, 2001). These symptoms are significant contributors to diminished physical and psychological wellbeing (Gustafsson, Madigan, & Lundkvist, 2017). For example, there is evidence that burnout reduces performance, negatively affects interpersonal relationships, and increases the risk of depression (Smith, Pacewicz, & Raedeke, 2019). Burnout is also linked to maladaptive forms of motivation (Li, Wang, & Kee, 2013). In combination, these

consequences can lead athletes to actively leave their sport, and in some instances, never return again (Larson, Young, McHugh, & Rogers, 2019).

Several models have been proposed to explain the development of athlete burnout (see Gustafsson, DeFreese, & Madigan 2017). Of these, Smith's (1986) cognitive-affective model is perhaps the most well studied and most well-suited to the present study. This model posits that burnout develops in response to chronic stress. Accordingly, when athletes appraise an imbalance between the demands of a situation (e.g., training) and their resources to cope with these demands, they will experience stress. Over time, a chronic imbalance between perceived demands and resources to cope will result in rigid behavioral responses (e.g., withdrawal) that comprise the athletes' attempt to alleviate the negative experiences associated with chronic stress. One such behavioral response is burnout.

Numerous studies have examined stress and burnout in sport (e.g., Chyi, Lu, Wang, Hsu, & Chang, 2018), including longitudinal studies that assessed how burnout changed over time in relation to stress (DeFreese & Smith, 2014). In every instance, stress has emerged as a positive correlate of burnout. The stress and burnout relationship is particularly strong for junior athletes (e.g., Gustafsson, Sagar, & Stenling, 2017). This is perhaps unsurprising given that the youth sport environment provides many opportunities for athletes to experience stress. This includes high training volumes, pressure for selection, and the potential for de-selection as one progresses through age groups and into the professional sphere (Rumbold, Fletcher, & Daniels, 2018). As such, there is likely little respite from potential stress for junior athletes, especially those striving to compete at the higher echelons of sport.

Coping

A particularly important resource in mitigating the development of chronic stress is coping. Coping is defined as the cognitive and behavioral efforts that an individual makes in order to manage internal and external sources of psychological stress (Lazarus & Folkman,

1984). Athletes can use a wide range of coping strategies in order to try to reduce stress and can be proficient at dealing with the stressors they encounter (Nicholls & Polman, 2007). In sport, coping is associated with optimal performance (Nicholls, Taylor, et al., 2016), sustained motivation (Crocker, Tamminen, & Gaudreau, 2015), and higher levels of psychological wellbeing (Nicholls, Levy, Carson, Thompson, & Perry, 2016). However, some coping strategies are ineffective, such as when athletes disengage from their goals, and are associated with lower levels of psychological wellbeing (Nicholls, Levy, et al., 2016). Among some of the extreme adverse outcomes linked to ineffective coping in athletes are depression and burnout (Nixdorf, Frank, Hautzinger, & Beckmann, 2013). Both of which will have important and potentially serious psychosocial consequences for athletes, including reduced performance and wellbeing.

Two widely used dimensions of coping strategies are problem-focused and avoidance coping (Nicholls & Polman, 2007). These dimensions are based on the distinction between approach and avoidance (Roth & Cohen, 1986), and more specifically, the difference between actively engaging and disengaging with ones' experience of stress (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). Problem-focused coping involves strategies directly aimed at altering or removing the stressful situation. By contrast, avoidance coping involves strategies aimed at evading the source(s) of stress (see Skinner, Edge, Altman, & Sherwood, 2003). Problem-focused coping is generally more effective at alleviating stress, because these strategies reduce levels of stress by proactively dealing with the stressors encountered by athletes (Nicholls, Taylor, et al., 2016; Zhang, Zhang, Ng, & Lam, 2019). The effectiveness of avoidance coping in reducing stress is more complex. It can be effective and helpful in the short-term but in the long-term its use is normally regarded as ineffective, particularly among young people (Compas et al., 2001). This is because avoidance represents active withdrawal from the process of dealing with stressful

experiences, which over time can result in the chronic accrual of stress (see Nicholls & Polman, 2007). Although the effectiveness of coping can vary from situation-to-situation, athletes can learn to cope with stress in a consistent (and rigid) manner (see Gaudreau, Nicholls, & Levy, 2010). This can include the tendency to use some methods of coping more often than others (e.g., avoidance coping more often than problem-focused coping). Such trait-like coping tendencies are likely to play a key role in the development of burnout.

Coping and Athlete Burnout

According to many psychology theories of coping and burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Hobfoll, 1989; Lazarus & Folkman, 1984), the ability to use coping resources to tackle stressors/demands is critical in mediating the relationship between one's environment deemed to be stressful and burnout. In this regard, problem-focused and avoidance coping are likely to be differentially associated with athlete burnout (e.g., Raedeke & Smith, 2004). Because avoidance coping is a tendency to reorient inner resources away from the demands of a situation and associated negative emotions, it is likely to be related to increased devaluation (Nicholls, Levy, & Polman, 2012). Moreover, the effort required to reorient away from dealing with demands and negative emotions can be physically and emotionally taxing, which over time is likely to be linked with emotional and physical exhaustion. It may also be the case that deliberately not dealing with negative affective stress responses can exhaust other resources associated with self-regulation (Lazarus & Folkman, 1984). In addition, because avoiders actively withdraw from the process of striving towards the realization of achievement goals, they are more likely to feel a reduced sense of accomplishment, especially if they are not finding alternative ways to engage in the achievement of these goals (Nicholls, Levy, et al., 2016). On the contrary, problem-focused coping may help athletes to develop a sense of purpose (resulting in decreased devaluation) and will mobilise inner resources that are engaged toward sport-related activities and goal

engagement, thus providing a means to increased accomplishment (Nicholls, Levy, et al., 2016). Finally, because resources are appropriately allocated to dealing with tasks and situations, coping resources are not unnecessarily depleted over time, limiting the potential for emotional and physical exhaustion. As such, individuals still have an array of resources to deal with the varying situational demands that arise in competitive sport.

To date, three studies have examined the relationship between coping tendencies and athlete burnout (Hill et al., 2010; Pacewicz et al., 2018; Schellenberg et al., 2013). In the first study to examine these relationships, Hill et al. (2010) recruited a sample of junior athletes (mean age = 15.15 years) and adopted a cross-sectional design. They found that avoidance coping was negatively related to burnout, and that problem-focused coping was positively related to burnout. More recently, Pacewicz et al. (2018) recruited a sample of varsity athletes (mean age = 19.83 years) and also adopted a cross-sectional design. They found that avoidance coping was negatively related to burnout, but that problem-focused coping was nonsignificantly related to burnout. Finally, Schellenberg et al. (2013) recruited a sample of university-level athletes (mean age = 19.68 years) and adopted a two-wave longitudinal design. Of importance to the present study, coping was measured at the second wave only (meaning that coping predicting changes in burnout could not be examined). Notably, however, a similar pattern of relationships emerged as in previous cross-sectional work, with avoidance coping negatively related to burnout, and problem-focused coping positively related to burnout. This pattern of relationships was consistent across all symptoms of athlete burnout as well as when symptoms were combined to form a total burnout score. Taken together, although somewhat inconsistent, these studies provide initial support for the importance of avoidance and problem-focused cognitive and behavioural strategies in dealing with or exacerbating the stress that is tied to burnout development.

The previous studies examining the coping tendencies-burnout relationship all have one major limitation. They all explored cross-sectional relationships. This is important because burnout is a chronic outcome of poor coping with stress, and burnout development is likely an ongoing attempt to exert inner resources to tackle environmental demands that are deemed to be stressful (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Eklund & DeFreese, 2015; Smith, 1986). Despite these theoretical propositions, by testing them using cross-sectional designs, we may be drawing incorrect conclusions about the relationships between coping and burnout, since we are operationally ignoring the dynamic and chronic nature of burnout that was originally theorized (see also Cresswell & Eklund, 2006). So as to fully test the predictive capability of coping tendencies in burnout development, longitudinal studies are required. This is also important in relation to tests of causation. Cross-sectional studies provide limited evidence for directional hypotheses (coping predicting burnout is just as plausible as burnout predicting coping; Gollob & Reichardt, 1987). Longitudinal designs allow greater causal inference by establishing temporal precedence (i.e., coping preceding changes in burnout). Moreover, to address the shortcomings of previous longitudinal burnout development studies (e.g., cross-lagged models; Hamaker, Kuiper, & Grasman, 2015), techniques that allow for a multilevel disaggregation of effects (intercept and slope) are also necessary.

The Present Study

Against this background, the aim of the present study was to examine whether coping tendencies predict changes in athlete burnout over time. In doing so, we used latent growth curve modelling so as to disaggregate levels of analysis (intercept and slope). Based on the theoretical and empirical arguments articulated above, we expected that the tendency to engage in strategies aimed at evading stress (avoidance coping) would correspond with increases in burnout over time, and the tendency to rely on strategies aimed at removing

stress (problem-focused coping) would correspond with decreases.

Method

Participants

Participants were 141 junior academy athletes (124 males and 17 females) from a previously published sample. Specifically, from Madigan, Stoeber, and Passfield (2016).[1] Participants' mean age was 17.3 years (SD = 0.8; range = 16–19 years). Participants were involved in a range of sports (60 in soccer; 36 in rugby; 18 in basketball; 14 in athletics; and 13 in other sports [e.g., cycling, squash]) and trained on average 9.6 hr/week (SD = 5.6).

Procedure

The study was approved by the university's ethics committee. Informed consent was obtained from all participants. In addition, parental consent was obtained from participants below the age of 18 years. Questionnaires were distributed during training in the presence of the first author, or athletes completed an online version of the questionnaire. Participants were administered measures of coping tendencies and burnout, and then the measure of burnout on two further occasions, three months and then six months after the initial assessment. These time points enabled us to monitor changes over (approximately) a season, capturing the start, mid and end of the season, for as many athletes as possible.

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[1]The original paper aimed to determine whether motivational regulations mediated the relationship between perfectionism and athlete burnout and adopted multilevel structural equation modelling to do so. The original paper measured constructs using the Sport Multidimensional Perfectionism Scale (Dunn et al., 2006), Multidimensional Inventory of Perfectionism in Sport (Madigan, 2016), the Behavioral Regulation in Sport Questionnaire (Lonsdale, Hodge, & Rose, 2008), and the Athlete Burnout Questionnaire (Raedeke & Smith, 2001). In the present study, we examine a separate research question that was not addressed in the original publication. Specifically, we use latent growth curve modelling to examine whether coping tendencies predict changes in athlete burnout over time. As such, only the athlete burnout data (Athlete Burnout Questionnaire) is replicated across studies. It is due to the significant differences in research question and analyses that we feel there is sufficient separation between the studies to warrant secondary use of the athlete burnout data (i.e., it provides us with the opportunity to gain new knowledge and understanding about burnout in athletes).

Measures

Coping Tendencies. To measure coping tendencies, we used the Modified COPE (Crocker & Graham, 1995) and combined the subscales to form measures of problem-focused coping and avoidance coping (see e.g., Madigan, Hill, Anstiss, Mallinson-Howard, & Kumar, 2018). To measure problem-focused coping, we combined the planning (4-items; "I made a plan of action"), active coping (4-items; "I tried different things to improve"), and suppression of competing activities subscales (4-items; "I stopped doing other things in order to concentrate on my performance"). To measure avoidance coping, we combined the denial (4-items; "I pretended it was not happening or hadn't really happened") and behavioral disengagement subscales (4-items; "I gave up trying to get what I want out of my performance"). Participants were asked to indicate the degree to which they typically used these strategies during the experience of stress when competing and training in their sport and responded on a scale from 1 (*used not at all*) to 5 (*used very much*). The Modified COPE has demonstrated reliability and validity in numerous studies (e.g., Hill et al., 2010).

Athlete Burnout. To measure burnout, we used the Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001). The ABQ comprises three subscales capturing the key symptoms of athlete burnout: reduced sense of accomplishment (5 items; e.g., "I am not achieving much in my sport"), physical and emotional exhaustion (5 items; e.g., "I am exhausted by the mental and physical demands of my sport"), and devaluation (5 items; e.g., "I'm not into my sport like I used to be"). Based on previous theory and research, the subscales were combined to create a total score of athlete burnout (e.g., Hill, 2013; Madigan et al., 2015). Participants were asked how often they experienced the symptoms described in the statements responding on a scale from 1 (almost never) to 5 (almost always). The ABQ is the most widely used measure of athlete burnout and has demonstrated reliability and validity in numerous studies (e.g., Cresswell & Eklund, 2005).

Analytic Strategy

First, we calculated Cronbach's alpha, factor means, and latent correlations.[2] We then used latent growth curve modelling to examine whether coping tendencies predict changes in athlete burnout over the six-month period (Byrne & Crombie, 2003; Curran, Obeidat, & Losardo, 2010). This technique estimates latent variables corresponding to growth parameters (intercept [starting point] and slope [rate of change over time]). In doing so, we used the robust full information maximum likelihood estimator in MPlus (Version 7.0; Muthén & Muthén, 1998-2012). In addition to being robust to deviations from multivariate normality, full information maximum likelihood handles missing data adequately even when data are not missing at random (31 participants did not provide three full waves of data; Graham, 2009). To evaluate model fit, we chose the following fit indices: comparative fit index (CFI), Tucker-Lewis index (TLI [also known as non-normed fit index, NNFI]), standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA; see Marsh, Hau, & Wen, 2004). We used the following cut-off values as benchmarks for acceptable (CFI > .90, TLI > .90, SRMR < .10, RMSEA < 10) and good model fit (CFI > .95, TLI > .95, SRMR < .08, RMSEA < .08; Marsh et al., 2004).

Results

Means and Latent Correlations

All measures showed satisfactory reliability (alphas > .70; see Table 1). Factor means, and latent correlations are shown in Table 1. The intercept mean represents the initial value of burnout at Time 1. The slope mean represents how much burnout increased on average every three months. Taken together, these values suggest that on average athletes' initial burnout levels were just below the mid-point of the response scale, and that the athletes

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[2]We also screened the data for univariate and multivariate outliers. No outliers were found.

reported increasingly more frequent symptoms over the six-month period. Problem-focused coping was negatively correlated with avoidance coping. The intercept of athlete burnout was negatively correlated with the slope of athlete burnout. Problem-focused coping was negatively correlated with the intercept of athlete burnout. Avoidance coping was positively correlated with both the intercept and slope of athlete burnout.

Latent Growth Curve Modelling

The conditional latent growth curve model provided an adequate-to-good fit to the data ($\chi^2_{[3]} = 7.96$, CFI = .97, TLI = .91, SRMR = .07, RMSEA = .11 [90% CI = .01 to .20]). See Figure 1 for standardized coefficients. The intercept and slope correlation shows that athletes who exhibit lower burnout scores at Time 1 tend to have greater rates of increase in burnout from Time 1 through to Time 3 than athletes who exhibit high burnout scores. Problem-focused coping predicts lower initial levels of burnout symptoms, whereas avoidance coping predicts higher initial levels. Finally, those athletes who use avoidance coping more often showed a greater rate of change (increase) in burnout from Time 1 to Time 3 than athletes who used avoidance coping less often.[3]

Discussion

The aim of the present study was to examine whether coping tendencies predicted changes in athlete burnout over time. In doing so, we used latent growth curve modelling to disaggregate levels of analysis (intercept and slope). Problem-focused coping negatively correlated with initial levels of burnout symptoms (intercept), while avoidance coping positively correlated with initial levels. In support of our expectations, avoidance coping also predicted increases in athlete burnout over time (slope), however, contrary to our

[3]We also examined the three dimensions of burnout in separate models, the findings of which were similar as for total burnout in terms of model fit and size and significance of path coefficients.

expectations, problem-focused coping was unrelated to changes in athlete burnout.

Avoidance Coping and Athlete Burnout

Strategies aimed at evading stress are sometimes effective in helping sporting performance (Nicholls, Taylor, et al., 2016). In the present study, however, these strategies were found to be implicated in the development of athlete burnout. The tendency to use avoidance coping strategies predicted increases in athlete burnout over six months. This finding was consistent for each of the symptoms of burnout and for an overall score. Avoidance coping represents deliberate conscious disengagement from strivings towards the achievement of goals, which are critical to the experience of acute and chronic stress. Withdrawal over time could be linked to feeling both a sense of devaluation and diminished accomplishment (Raedeke & Smith, 2004). In addition, deliberate attempts not to deal with negative affective stress responses is likely to be physically and emotional exhausting over a prolonged period. As such, avoidance strategies such as denial and behavioural disengagement may not only result in the chronic accrual of stress but also an increase in burnout symptoms over time (Smith, 1986). Consequently, avoidance coping should be central to future research examining burnout development in athletes.

Problem-Focused Coping and Athlete Burnout

There is a large body of evidence attesting to the effectiveness of problem-focused coping in relation to reducing stress in sport (e.g., Nicholls & Polman, 2007). In agreement with several cross-sectional studies, problem-focused coping was negatively associated with initial levels of burnout (intercept). However, problem-focused coping was unrelated to changes in athlete burnout. This was the case for all burnout symptoms and an overall score. While this is consistent with some cross-sectional research that has found nonsignificant relationships between problem-focused coping and athlete burnout, it is at odds with theoretical propositions. What then may explain these discrepancies? Problem-focused

coping has been found to be particularly effective among academy soccer players when stressors are perceived as being controllable (Reeves, Nicholls, & McKenna, 2011). In the context of the junior athletes we sampled, they may operate in an environment where everything is structured and controlled (e.g., Rothwell, Rumbold, & Stone, 2018), so even if they possess problem-focused coping, they may not perceive that they have any control over dealing with the stressors that they face, and, in this case, problem-focused coping may do little to influence changes in burnout.

It may also be the case that problem-focused coping may be more effective in the short term for well-being (Nicholls, Levy, et al., 2016) and performance (Nicholls, Taylor et al., 2016), but not over longer periods of time. This has been shown previously in the context of professional youth academy sport where problem-focused-related coping has been negatively associated with future selection at the senior level (Rumbold, Fletcher, & Daniels, in press). There are likely to be a large number of demands placed on junior athletes during the season including preparing for competition and competition itself. Junior athletes may at points therefore be overwhelmed by these demands and planning, suppressing competing activities, and active coping may not be enough to overcome these sources of stress. This is especially likely to be the case in relation to competition and when errors are made. This said, more research is required before problem-focused coping strategies are dismissed altogether in relation to burnout development.

Applied Recommendations

By longitudinally assessing changes in burnout due to stable coping tendencies, we contribute to the limited literature that has operationally tested the notion that changes in burnout represent an ongoing inability to cope in particular ways with one's environment (e.g., Smith, 1986). As such, the findings of the present study have important implications for athletes, as well as sport psychologists, sport scientists, and coaches because they suggest

that how athletes cope with stress may affect their susceptibility to experiencing burnout symptoms. To this end, our first and foremost recommendation is that athletes be made aware of the pitfalls of avoidance coping and be taught where possible to "avoid" avoidance coping in sport. This is particularly important because there is evidence to suggest that younger athletes, who likely have fewer resources than adult athletes, and use more avoidance coping strategies (Lewis & Frydenberg, 2004). A further recommendation would be to introduce athletes to more effective coping strategies (e.g., taught to apply a broad range of coping strategies and encouraged to learn which strategies work best for them in specific situations and consistently over time). Such protocols have been found previously to reduce stress and burnout symptoms in similar populations as examined in the present study (Reeves et al., 2011). Finally, we recommend that sport personnel and sport organisations monitor athlete wellbeing over time and consider ways to reduce strain (e.g., clarify roles within a team, reduce training loads when appropriate, encourage playing time so athletes feel valued and an increased sense of relatedness; Madigan et al., 2019).

Limitations and Future Research

The present study had a number of limitations. First, it is unclear whether the present findings with academy sport performers will generalize beyond the present population. As such, additional studies are required examining these relationships in different populations (e.g., adult athletes). Second, the present sample could be considered relatively small. This is an inherent problem with conducting longitudinal studies in specialised sport populations. As such, we call for large, multi-site collaborative projects specifically directed at addressing burnout development in sport. Third, there are over 400 ways people cope with stress (Skinner et al., 2003), we focused on only a few (broad categories) in the present study. Future work should therefore consider other forms of coping tendency to determine whether other ways of dealing with stress are also implicated in burnout development. According to

Smith (1986), other elements of the stress process are important in the development of burnout. What may be relevant to future research are appraisals. While studies have examined cognitive appraisals in sport, Lazarus (1999) argued that people can also learn to form stable patterns of appraisals in the same way that people can learn particular ways of coping. As such, future research may benefit from examining the role of stable appraisal patterns in the development of burnout. Finally, we tracked athletes' burnout over the course of a season, so as to provide us with further insight into the dynamics of burnout development, future studies may benefit from utilising longer periods of data collection, more intensive measurement (e.g., ecological momentary assessment or think aloud protocols), and over non-competitive training periods (i.e., offseason).

Conclusion

The present findings suggest that certain coping tendencies appear to be important in relation to burnout development. In this regard, the use of avoidance coping strategies is linked to increases in athlete burnout over time. Consequently, wherever possible, athletes should "avoid" avoidance coping and instead use a broad range of strategies to overcome sources of stress.

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Table 1

Descriptive Statistics, Cronbach's Alphas, and Latent Correlations

Variable	1	2	3	4
1. Problem-focused coping				
2. Avoidance coping	–.19*			
3. Athlete burnout intercept	–.34*	.45**		
4. Athlete burnout slope	–.09	.23*	–.50**	
M	3.16	2.51	2.27	.04
SE	.07	.07	.06	.04
Cronbach's alpha	.75	.81	.82	.78

Note. $N = 141$.

*$p < .05$. **$p < .01$.

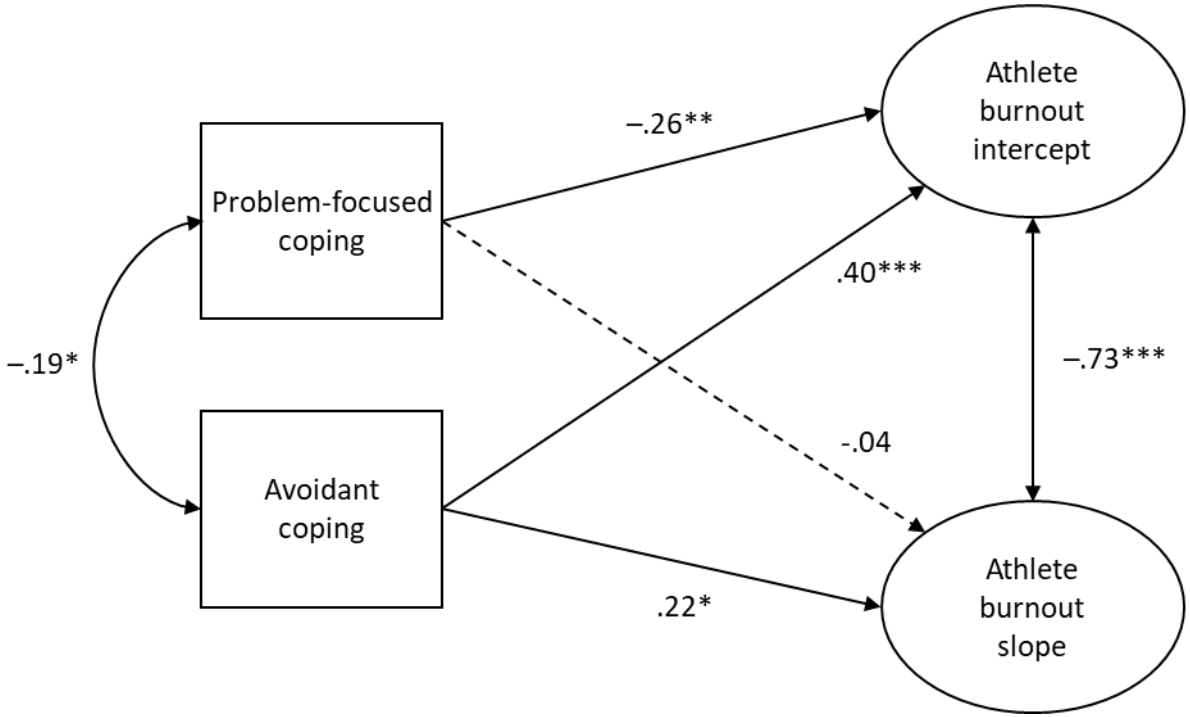

Figure 1. Conditional latent growth curve model of coping tendencies predicting the intercept and slope of athlete burnout. Dashed paths = nonsignificant. *$p < .05$. **$p < .01$. ***$p < .001$. Standardized coefficients.