

The relationship between athlete burnout and perfectionism:

A meta-analysis

Hanna Lainas¹ & Seongkwan Cho^{2*}

¹*Faculty of Department of Professional Programs*

²*Texas A&M International University*

Abstract

In this meta-analysis, we examined the relationships between two types of perfectionism (i.e., perfectionistic strivings and concerns) and athlete burnout. A total of 18 studies in 17 articles (i.e., one article included two studies with different data sets) were included and analyzed. Random-effects models were used to test the relationships between perfectionism and burnout in athletes. The results indicated that perfectionistic strivings were negatively related to athlete burnout while perfectionistic concerns were shown to be positively related to athlete burnout. Perfectionistic strivings are functionally adaptive to burnout in athletes, whereas perfectionistic concerns are functionally maladaptive to athlete burnout. Gender significantly moderated the relationship between perfectionistic concerns and athlete burnout.

Key words: athlete burnout, perfectionism, perfectionistic strivings, perfectionistic concerns, meta-analysis

Introduction

The original concept of burnout as a psychological construct emerged from health professions. Maslach and Jackson (1981) were the first to propose the multidimensional construct of burnout as a state of emotional fatigue that often causes decrease in productivity. Burnout is commonly experienced by individuals who work with other people. Burnout also manifests incompetence, negative responses toward clients, as well as lack of achievement (Maslach & Jackson, 1981, 1984). While burnout studies first focused mainly on individuals who worked in the human service industries, researchers gradually started exploring burnout syndrome in other domains (Schaufeli,

Leiter, & Maslach, 2009).

Sport environments are known to provoke athletes into emotional and physical tiredness or fatigue, mood disturbance, lack of enjoyment, loss of motivation, and, in turn, cause burnout syndrome (Eklund & Cresswell, 2007; Raedeke, 1997). Early burnout research in sport settings focused on the burnout syndrome in coaches because coaching required excessive psychological and emotional demands (Vealey, Udry, Zimmerman, & Soliday, 1992). Later, researchers observed the burnout syndrome in athletes. Raedeke (1997) first proposed the multidimensional burnout in collegiate swimmers by adopting the original definition of burnout from Maslach and Jackson (1982). Maslach and Jackson's definition of burnout contains a depersonalization component that is described as having negative feelings and responses towards others. Raedeke replaced depersonalization with sport devaluation in order to explain the negative feelings and attitudes athletes have

towards their sports. Later, Raedeke and Smith (2001) developed the Athlete Burnout Questionnaire (ABQ) which is composed of three subscales including emotional and physical exhaustion, sport devaluation, and reduced sense of accomplishment. The ABQ has widely been used to measure burnout syndrome in the athlete population (Eklund & Cresswell, 2007).

Perfectionism

Perfectionism is a personality trait that has been studied in the sport-specific context and is considered an important factor affecting athletes' cognitive, affective, and behavioral functions (Gotwals, Stoeber, Dunn, & Stoll, 2012). According to Frost, Marten, Lahart, and Rosenblate (1990), perfectionism is a multidimensional construct that includes a person's striving to achieve unrealistic goals while being hypercritical of one's own performance. Perfectionism includes personal and social components which are called self-oriented and socially prescribed perfectionism, respectively (Hewitt & Flett, 1991). Self-oriented perfectionism is defined by one's self-criticism and success with reaching personal unrealistically high standards, whereas the social aspect of perfectionism is often described by one's striving to meet someone else's unrealistic expectations in the hope of gaining acceptance (Hewitt & Flett, 1991).

This depiction of perfectionism was commonly accepted and used for more than two decades in various fields of study. Recently, researchers in sports psychology suggested that perfectionism can be healthy or unhealthy and, therefore, have categorized perfectionism into two dimensions: perfectionistic strivings and perfectionistic concerns (Gotwals, 2011; Gotwals et al., 2012). These two dimensions of perfectionism focus on functional aspects of perfectionism, that is, strivings and concerns. Perfectionistic strivings can be viewed as strong determination to achieve the best results. Strivings often assist athletes with succeeding and are, therefore, considered healthy and helpful. Perfectionistic concerns are described as fear of making mistakes and receiving negative evaluations. Concerns are fueled by

differences between a person's expectations, actual performance, and athlete's react negatively to their imperfections, and therefore perfectionistic concerns are considered unhealthy and dysfunctional. According to Gotwals (2011) both healthy and unhealthy perfectionists experience striving to reach high standards, while only unhealthy perfectionists engage in excessive perfectionistic concerns. For instance, athlete's perfectionistic strivings are positively related to self-esteem and self-confidence in Olympic athletes (Koivula, Hassmén, & Fallby, 2002) and psychological well-being of athletes (Gaudreau & Verner-Filion, 2012), while disordered eating in elite synchronized swimmers is often positively connected to perfectionistic concerns (Ferrand, Magnan, Rouveix, & Filaire, 2007). A systematic review study by Gotwals et al. (2012) shows that perfectionistic strivings in sports are generally adaptive, but "in some instances" could be maladaptive (p. 273).

Perfectionism and athlete burnout

Several studies have examined perfectionism in relation to athlete burnout. Numerous studies indicate that certain types of perfectionism may lead to different levels of burnout. For instance, healthy and unhealthy athlete perfectionism (Gotwals, 2011) and evaluative or personal types of perfectionism (Hill, 2013) have been connected to various levels of athlete burnout. Gotwals' investigation revealed that healthy perfectionists had lower burnout scores in comparison with doubt-oriented unhealthy perfectionists. Healthy perfectionistic participants had different levels of emotional exhaustion compared to parent-oriented unhealthy perfectionists. Additionally, healthy perfectionists had lower levels of burnout in comparison with non-perfectionists. Hill's research also supports the Gotwals' findings and suggests that athletes displaying evaluative perfectionism tend to have higher levels of burnout as displayed by all burnout symptoms in comparison with non-perfectionists. Furthermore, upon detailed investigation of two main dimensions of perfectionism and their relationships with athlete burnout, empirical evidence

suggests that perfectionistic concerns have a positive correlation with athlete burnout while there is a negative relationship between perfectionistic strivings and symptoms of athlete burnout (Appleton, Hall, & Hill, 2009; Hill, Hall, Appleton, & Kozub, 2008; Hill, Hall, Appleton, & Murray, 2010).

Perfectionism and its various dimensions clearly deserve further investigation to advance the understanding of the onset and progression of athlete burnout. A recent meta-analysis study investigated the relationship between perfectionism and burnout in work, education, and sport settings (Hill & Curran, 2015). In that meta-analysis study, authors included studies about burnout in dancers to examine the relationship between perfectionism and athlete burnout. Thus, we examined the relationship between perfectionism and burnout in athletes only through a meta-analytic approach.

Method

Selection, inclusion, and coding of studies

A systematic literature review was conducted to search for studies that were appropriate for this research project. Electronic databases including Academic Search Complete, SPORTDiscus, and PsycINFO were used to select research pertaining to athlete burnout and perfectionism. Time ranges of the resources were from 2000 to 2017. Search options (i.e., Academic Journals and Scholarly Peer-Reviewed Journals in English) were added to select appropriate resources. Specific keywords used for the selection of studies were burnout, athlete burnout, burnout in athletes, perfectionism, perfection, and perfectionist. There were two specific inclusion criteria for this study. The first criterion included using only athletes as participants of the research, and therefore any studies that were conducted with coaches and dancers were excluded. The second inclusion requirement specified only selecting studies which had calculations of bivariate correlations between athlete burnout and perfectionism. After removing

duplicate articles and articles pertaining to non-athlete burnout, the authors selected 17 articles that met both inclusion criteria. One study included two sub-studies with the different datasets, and therefore 18 studies in total were used for this meta-analysis.

For coding and obtaining accurate and consistent information, the first and second authors developed a coding sheet containing the following: basic information (i.e., author name, publication date, and title), participant characteristics (i.e., age, sample size, gender, and type of sport), perfectionism measure, burnout measure, and effect size. After discussing coding differences, authors removed age and type of sport from data coding due to not having enough data on these criteria in all of the studies. In some studies, the authors did not clearly report the ages of participants but rather reported general information regarding age. For example, the authors in one study reported only the mean age of participants while in another study the authors only reported the range of ages (i.e., from 17 to 32 years). Both authors separately coded the studies, and the inter-coder reliability was .88.

The Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001) was used to measure athlete burnout in all of the studies. The ABQ contains three subscales: emotional and physical exhaustion, sport devaluation, and reduced accomplishment. Each of the subscales has been used to investigate a specific dimension of athlete burnout, and the global burnout scores (i.e., the mean scores of the sum of the subscales) have also been used to measure the extent of overall burnout. For perfectionism, however, five different measures were used. Based on the updated definition of perfectionism by Gotwals et al. (2012), perfectionism was coded into two categories: strivings as adaptive and concerns as maladaptive.

Analysis

Comprehensive Meta-Analysis software (Version 3.3) was used to conduct the meta-analyses. The bivariate correlation coefficients (r) between the global burnout and perfectionism (i.e., either perfectionistic strivings or

concerns) were used for the original effect sizes for this study. We also calculated the weighted effect size and converted the original effect sizes to the Fisher's z scale (Borenstein, Hedges, Higgins, & Rothstein, 2009). As seen in Table 1, there are two effect sizes in each study: one is the correlation between burnout and concerns of perfectionism, and the other is between burnout and strivings of perfectionism.

We used the fixed-effect model for the homogeneity tests of the Q statistic to assess if the effect sizes arose from one population. If the Q value is significant, the data is heterogeneous. We also calculated the I2 statistic as an index of heterogeneity that reflects "the extent of overlap of confidence intervals, which is not dependent on the actual location or spread of the true effects" (Borenstein et al., 2009, p.118). The value of I2 actually indicates the percentage of inconsistency across the results of the studies. The values of 25%, 50%, and 75% of I2 are considered as low, moderate, and high heterogeneity, respectively (Borenstein et al.). If both the Q and I2 values

indicate heterogeneity of the effect size, the random-effects model is considered for further data analysis.

Results

Burnout and perfectionistic strivings

The ranges of effect sizes were from -.48 to .39, and the mean effect size r was -.18 (95% CI [-.21, -.14]) and significant ($p < .001$). The homogeneity test indicated that $Q(17) = 80.01$ was significant ($p < .001$). The value of I2 was 78.75%. The homogeneity test and I2 showed high heterogeneity, and thus we used the random-effects model to further analyze the data with gender as a moderating variable on the relationship between burnout and perfectionistic strivings (Borenstein et al., 2009). We coded the studies that contained both male and female athletes into Group 1 and the studies that contained only male athletes into Group 2.

Table 1. Summary of coded information

Author (Year)	Sample Size (Gender)	Effect Size (r) & 95% C.I.			
		Strivings &ABQ		Concerns &ABQ	
Appleton & Hill (2012)	231 (204 males & 27 females)	-0.19	[-.31, -.06]	0.23	[.10, .35]
Appleton et al. (2009)	201 (all males)	-0.14	[-.27, -.00]	0.28	[.15, .40]
Chen et al. (2008)	320 (128 males & 192 females)	-0.28	[-.38, -.18]	-0.12	[-.23, -.01]
Chen, Kee, & Tsai (2009)	188 (102 males & 86 females)	-0.25	[-.38, -.11]	-0.07	[-.21, .07]
Gotwals (2011)	117 (48 males & 69 females)	-0.04	[-.22, .14]	0.2	[.02, .37]
Gustafsson et al. (2015)	237 (124 males & 113 females)	0.28	[.16, .39]	0.47	[.36, .56]
Hill (2013)	171(all males)	-0.23	[-.37, -.08]	0.29	[.15, .42]
Hill & Appleton (2011)	202 (all males)	-0.24	[-.37, -.11]	0.26	[.13, .38]
Hill et al. (2010)	150 (86 males & 64 females)	-0.06	[-.22, .10]	0.27	[.12, .41]
Hill et al. (2008)	151 (all males)	-0.35	[-.48, -.20]	0.42	[.28, .54]
Ho et al. (2105-Study 1)	205 (127 males & 78 females)	-0.09	[-.23, .05]	0.1	[-.04, .23]
Ho et al. (2105-Study 2)	212 (156 males & 56 females)	-0.32	[-.44, -.19]	0.13	[-.01, .26]
Jowett et al. (2013)	211 (161 males & 50 females)	-0.19	[-.32, -.06]	0.44	[.32, .54]
Jowett et al. (2016)	222 (98 males & 124 females)	-0.26	[-.38, -.13]	0.36	[.24, .47]
Lemyre et al. (2008)	141 (81 males & 60 females)	-0.22	[-.37, -.06]	0.12	[-.05, .28]
Madigan et al. (2015)	103 (82 males & 21 females)	-0.23	[-.41, -.04]	0.08	[-.12, .30]
Madigan et al. (2016a)	141 (124 males & 17 females)	-0.05	[-.21, .12]	0.29	[.13, .43]
Madigan et al. (2016b)	129 (66 males & 63 females)	-0.3	[-.45, -.13]	-0.04	[-.21, .13]

Note. $Mean_{Strivings} = -.18(95\%CI: -.21, -.14)$; $Mean_{Concerns} = .21(95\%CI: .12, .30)$.

The results of the random-effects model indicated that $Q_{within}(16) = 14.37$ was not significant ($p > .05$). Specially, the values of Q_{within} by group showed that the variance in each group was not statistically significant (i.e., $Q_{Group1}(13) = 11.33$, $p > .05$, and $Q_{Group2}(3) = 3.04$, $p > .05$). $Q_{Between}(1) = 0.87$ was not significant ($p > .05$). Gender didn't moderate the relationship between burnout and perfectionistic strivings.

Burnout and perfectionistic concerns

The ranges of effect sizes were from $-.12$ to $.47$, and the mean effect size of r was $.22$ (95% CI $[-.12, .30]$) and significant ($p < .001$). $Q(17) = 118.33$ was significant ($p < .001$). The value of I^2 was 85.63%. Based on the results of the homogeneity test and I^2 , we added gender as a moderating variable and used the random-effects model to further analyze the relationship between burnout and perfectionistic concerns

The results indicated that $Q_{within}(16) = 4.04$ was not significant ($p > .05$). Especially, the values of Q_{within} by group showed that the variance in each group was not statistically significant (i.e., $Q_{Group1}(13) = 1.22$, $p > .05$, and $Q_{Group2}(3) = 2.82$, $p > .05$). $Q_{Between}(1) = 10.77$ was significant ($p < .05$). The effect sizes of Group 1 and Group 2 were $.18$ and $.32$, respectively ($p < .001$). The results indicated that gender moderated the relationship between burnout and perfectionistic concerns.

Discussion

The relationships between athlete burnout and two dimensions of perfectionism (i.e., perfectionistic strivings and perfectionistic concerns) were systematically reviewed and analyzed using a meta-analysis. Specifically, the aim of this study was to investigate if perfectionistic strivings were adaptive and perfectionistic concerns were maladaptive and to examine the influence of gender as a moderating variable on the relationships.

The meta-analytic results showed that perfectionistic

strivings negatively influenced athlete burnout, and the magnitude of effect size was small to medium ($r = -.18$; Cohen, 1992). Because the direction of the relationship is negative, it can be interpreted that perfectionistic strivings are functionally adaptive to burnout in athletes. That is, the more an athlete is motivated by a striving tendency, the less likely they are to experience burnout. The result is partially consistent with Gotwals et al.'s findings (2012) that perfectionistic strivings are generally adaptive but could be maladaptive in some cases (Gustafsson, Hill, Stenling, & Wagnsson, 2015). It is assumed that the partial consistency is due to the fact that this study specifically analyzed the relationships between perfectionistic strivings and athlete burnout, whereas Gotwals et al. investigated whether or not perfectionistic strivings in athletes were adaptive. Gender was not a moderating variable in the relationship between perfectionistic strivings and burnout in athletes.

Perfectionistic concerns positively influenced burnout in athletes, and the effect size was medium ($r = .22$). All effect sizes were positive except in one study. The result reconfirms that perfectionistic concerns are functionally maladaptive to athlete burnout, and it is consistent with Gotwals et al. (2012) findings. Athletes who have more perfectionistic concerns are more likely to be burnt out. Gender significantly moderated the relationship between perfectionistic concerns and athlete burnout. The magnitude of the effect size in Group 2 which contained only male athletes was larger than the effect size in Group 1 which included both male and female athletes. Perfectionistic concerns possibly have more influence on burnout in male athletes.

There are several limitations in this study. For example, categorizing perfectionism in different scales might be limited to generalize the results of this study. The Athlete Burnout Questionnaire was the only scale to measure athlete burnout, but various measures were used to measure perfectionism in sport. For example, Lemyre, Hall, and Roberts (2008) used the sport-specific version of the Multidimensional Perfectionism Scale containing five perfectionism dimensions, whereas Chen et al. (2009) used

the Multidimensional Inventory of Perfectionism in Sport containing specifically perfectionistic striving and concern dimensions. Composite subscales in the sport-specific version of the Multidimensional Perfectionism Scale used for perfectionistic strivings might be different from using the perfectionistic striving subscale in the Multidimensional Inventory of Perfectionism in Sport; that is, these subscales are unequally “valid measures of perfectionistic strivings” (p. 275) although they are grounded in the core aspect of perfectionistic strivings (Gotwals et al., 2012). This study included only one moderator variable. Although few studies do not clearly state demographic information, there may be additional moderating variables that significantly moderate the relationships between perfectionism and athlete burnout. Researchers should pay attention to these issues in future studies.

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