



Preserving Perfectionism: The Relationship Between Perfectionism and Self-Handicapping in Distance Runners

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ABSTRACT

Perfectionism is believed to be a common trait among endurance athletes given the substantial time, energy, and planning required to perform successfully. When perfection is not perceived to be possible, self-protective behavior, often referred to as self-handicapping, may be observed. Thus, the purpose of this study was i) to measure perfectionism in distance runners, and ii) to determine whether there is a relationship between the type of perfectionism reported and self-handicapping tendencies. Participants (N = 158) completed a demographic and running history questionnaire, the 15-item Multidimensional Perfectionism Scale (Hewitt et al., 2008), and the 14-item Self-Handicapping Scale (Rhodewalt, 1990). Moderate levels of self-oriented (SOP), other-oriented (OOP), and socially prescribed perfectionism (SPP) were observed, which is in line with previous studies (Jowett et al., 2018). Significant positive correlations were found between OOP ($r = .183$) and SPP ($r = .345$) and self-handicapping tendencies. Furthermore, age and SPP emerged as significant predictors for self-handicapping tendencies. These results may be explained through the self-esteem protection provided by self-handicapping (Hill et al., 2011). High perceived expectations from others could result in

excuse-making in order to justify potential failures. These findings provide initiating evidence for research regarding the psychology of recreational endurance athletes.

INTRODUCTION

Perfectionism is believed to be a common trait among endurance athletes, yet it is unclear whether this is an accurate characterization or a misguided stereotype. Perfectionism is broadly defined as “a personality disposition characterized by striving for flawlessness and setting exceedingly high standards of performance accompanied by overly critical evaluations of one’s behavior” (Stoeber et al., 2015, p. 171). Early work conceptualized perfectionism as a maladaptive one-dimensional construct (e.g., Pacht, 1984), but more contemporary conceptualizations recognize perfectionism as a multidimensional personality characteristic associated with both adaptive and maladaptive features (Hill et al., 2018; Mallinson-Howard et al., 2021). Perfectionism as a multidimensional construct is comprised of two higher-order (super-ordinate) dimensions: perfectionistic strivings and perfectionistic concerns (Stoeber & Otto, 2006). Perfectionistic strivings reflect self-oriented striving for perfection and the setting of very high personal performance standards (Gotwals et al., 2012). This dimension of perfectionism is considered to be adaptive and has mostly positive associations with athletic performance (e.g., Mallinson-Howard et al., 2021; Waleriańczyk & Stolarski, 2021). Perfectionistic concerns, on the other hand, include fear of negative social evaluation, concern and rumination over mistakes, and critical self-evaluation (Gotwals et al., 2012). Perfectionist concerns can negatively impact motivation and well-being (Birch et al., 2019; Jowett et al., 2016) and are not associated with performance outcomes (Hill et al., 2018; Stoeber, 2011).

Participation in endurance events requires a substantial amount of time and energy, in addition to detailed and controlled planning for events, which lends itself to possible links with perfectionism (González-Hernández et al., 2021). Furthermore, distance runners are at a higher risk for exercise dependence (Costa et al., 2016; Hall et al., 2009; Hill et al., 2015), a behavior that has been directly linked to both positive (i.e., adaptive) and negative (i.e., maladaptive) perfectionism (Hauck et al., 2020). Preliminary research has shown that endurance athletes tend to report moderately high levels of both adaptive and maladaptive perfectionism (González-Hernández et al., 2021; Terry-Short et al., 1995). In the only two studies to examine the association between perfectionism and endurance performance in an actual competition setting, perfectionistic strivings were shown to have a positive, moderate correlation with endurance performance while perfectionistic concerns had no significant correlation with performance (Stoeber et al., 2009; Waleriańczyk & Stolarski, 2021).

The two higher-order factors of perfectionistic strivings and perfectionistic concerns do not represent the full spectrum of perfectionistic tendencies, and several ‘subtypes’ or within-person combinations of perfectionism have been examined (Smith et al., 2014). Adopting a sociopsychological perspective that considers interpersonal aspects of perfectionism, Hewitt and Flett (1991) identified three forms of perfectionism: self-oriented,

other-oriented, and socially prescribed. Self-oriented perfectionism (SOP) is directed towards the self, and includes behaviors such as setting high standards for oneself (Hewitt & Flett, 1991, 2004). Other-oriented perfectionism (OOP) relates to expectations about the abilities of others, for example setting unrealistic standards for other people and placing importance on others being perfect (Hewitt & Flett, 1991). Finally, socially prescribed perfectionism (SPP) describes the need to meet the perceived high expectations and standards imposed by others (Hewitt & Flett, 1991, 2004). To date, there has been little to no research describing athletes based on this categorization. This may be because there is not a clear relationship between these categories of perfectionism and performance as none of them are inherently more positive or negative than another (Hill et al., 1997). Given that SOP, OOP, and SPP can lead to varied outcomes, similar to the dichotomy between perfectionistic strivings and concerns (Frost et al., 1993), assessing endurance athletes via a sociopsychological perspective is novel way to understand factors that may influence performance.

Perfectionism that is self-oriented may be an essential characteristic of successful athletes; perfectionistic personal standards are positively correlated with performance as well as an approach-orientation towards performance goals (Stoeber et al., 2009). However, high personal standards do not always have positive outcomes (Hill et al., 2011); when individuals with high personal standards feel that their ability to succeed is threatened, they may feel the need to disengage. This disengagement removes the responsibility from the individual and places it on the environment or performance conditions. This may help to maintain the perfectionism that individuals are seeking. By removing personal responsibility, the individual is not imperfect, their conditions are. Hill et al. (2011) observed this behavior in student athletes who withdrew effort in a subsequent endurance task after “failing” in the first task. This self-protective behavior, often referred to as self-handicapping, is a commonly observed behavior, particularly in academic settings (e.g., Török et al., 2018).

Self-handicapping is defined as “any action or choice of performance setting that enhances the opportunity to externalize (or excuse) failure and to internalize (reasonably accept credit for) success” (Berglas & Jones, 1978, p. 406). It is a self-presentation strategy that aligns with Atkinson’s (1957) observations that high achieving individuals tend to choose tasks they know they can perform successfully, while high failure-avoidance individuals choose tasks that are either above or below their ability. By choosing a task they know they can perform successfully, high achieving individuals can remain high achieving. Conversely, by choosing a task that is too easy or too difficult, failure-avoidance individuals can either succeed without much effort or blame their circumstances for any perceived or actual failure. Thus, we can reason that setting unattainable goals is a behavioral method of self-handicapping, also referred to as effort withdrawal. Similarly, characterizing a goal as unattainable when it may not be is known as claimed self-handicapping. Martin and Brawley (1999) defined this lower-stakes version of self-handicapping as “the tendency to make excuses prior to evaluative performances” (p. 902). It can also be referred to as excuse-making. As long as the claim is believable, both behavioral and claimed handicaps are valid.

A number of studies in non-sport settings have shown a relationship between perfectionism and self-handicapping, with the relationship being dependent on the type of perfectionism measured (e.g., Kearns et al., 2007; Stewart & De George-Walker, 2014). For example, Flett et al. (1992) found that college students who report higher levels of SPP are more likely to engage in self-handicapping behaviors than individuals who report higher levels of SOP. This makes sense as self-handicapping behaviors are aimed at protecting one's self-esteem in the presence of others. If an individual reports high SPP, then they believe that others have high expectations of them and that there is minimal margin for failure. By making excuses or reducing effort, the responsibility for failure is removed from the individual and placed on the conditions of performance.

Research on the relationship between perfectionism and self-handicapping within sport, especially endurance sports, has been minimal to non-existent. Levels of perfectionism and self-handicapping in endurance athletes have yet to be established. Understanding these constructs in distance running may help to explain common, negative pre-run and pre-race self-handicapping behaviors.

This study sought to understand perfectionism in distance runners and its relationship to self-handicapping tendencies. The first purpose was to explore the levels of SOP, OOP and SPP reported by distance runners. The second purpose was to determine the relationship between perfectionism and self-handicapping in runners; specifically, whether SOP, OOP and SPP have different relationships with self-handicapping. It was hypothesized that there would be a strong positive correlation between levels of SPP and self-handicapping because self-handicapping is motivated by self-presentation. However, SOP and OOP were not expected to be significantly correlated with self-handicapping because they are not associated with others' evaluations of self. An a priori power analysis was performed for sample size estimation using G*Power 3.1 (Faul et al., 2007). Using a medium effect size of $r = 0.3$, alpha of 0.05 and power of 0.8, the projected sample size needed for a bivariate correlational analysis was approximately 84.

METHOD

Participants

One hundred fifty-eight runners (108 women, 49 men, and one who preferred not to specify) voluntarily participated in the study ($M_{age} = 38.4$, $SD = 10.7$). The majority of the sample identified as white (94%) and were educated to the bachelors (29%) or graduate (54%) level. All participants met inclusion criteria of being 18 years of age or older, running at least three to four times per week for the previous year, and having completed a race of half-marathon distance or longer. Participants averaged 27.5 ± 16.2 miles of running per week and had an average of 13.8 ± 10.2 years of running experience. The majority of participants

classified themselves as non-competitive (n = 88) or competitive amateur (n = 60) runners. On average, participants had completed 9.9 + 12.3 half marathons, 3.4 + 6.6 marathons, 0.7 + 2.0 ultramarathons. Approximately 28% of participants also reported participating in other endurance events (e.g., triathlons, duathlons, etc.).

Measures

Multidimensional Perfectionism Scale.

SOP, OOP, and SPP were measured using the 15-item Multidimensional Perfectionism Scale (MPS; Hewitt et al., 2008). The 15-item MPS is a shortened version of the original 45-item scale developed by Hewitt and Flett (1990) and assesses levels of perfectionism in the three sub-types. The self-oriented perfectionism sub-scale contains five items (e.g., "One of my goals is to be perfect in everything I do"); the other-oriented perfectionism sub-scale contains five items (e.g., "I cannot stand to see people close to me make mistakes"), and the socially prescribed perfectionism sub-scale contains five items (e.g., "People expect nothing less than perfection from me"). Responses are measured on a 7-point Likert scale ranging from 1 (disagree) to 7 (agree) with a possible range of 15–105 for overall perfectionism and 5–35 for each subscale, with higher scores indicating higher levels of perfectionism. The MPS does not classify individuals as perfectionistic or non-perfectionistic; all levels of perfectionism are relative. In the current study, the Cronbach's alpha for self-oriented (0.91), other-oriented (0.79), and socially prescribed (0.86) perfectionism subscales were acceptable.

Self-Handicapping Scale.

Self-handicapping was measured at the dispositional or trait level using the 14-item Self-Handicapping Scale (SHS; Rhodewalt, 1990). The 14-item SHS is a modified version of the original 25-item scale and assesses individuals' tendency to self-handicap via statements such as: "I tend to put things off until the last moment" and "I sometimes enjoy being mildly ill for a day or two because it takes off the pressure". Responses are measured on a 6-point Likert scale from 0 (disagree very much) to 5 (agree very much) with a score range of 0–70. The SHS includes two subscales: excuse-making and effort withdrawal, but was assessed as a total score due to lack of internal consistency of the effort withdrawal scale (Shields & Paskevich, 2001). Data from a number of different samples provide evidence for the discriminant and convergent validity of the SHS (Rhodewalt, 1990). Prapavessis et al. (2003) confirmed that the 14-item SHS is a valid and reliable measure of athletes' self-handicapping tendencies with a Cronbach alpha of 0.80. In the current study, the Cronbach's alpha (0.84) was acceptable.

Procedures

After receiving university ethical approval, participants were recruited via email listservs and social media advertisement. The study details were outlined in the recruitment materials which included an electronic survey link. Upon following the link, participants were prompted to answer screening questions to assess study eligibility. If eligible, participants were then directed to an informed consent form. Once participants consented, they provided demographic information and completed the MPS and SHS measures.

Statistical Analysis

Perfectionism subscale scores were compared using a one-way repeated-measures analysis of variance (ANOVA). A bivariate correlation was used to measure the strength of association between the three types of perfectionism (self-oriented, other-oriented, and socially prescribed) and self-handicapping. Exploratory analyses were then conducted to assess the relationship between demographic variables, perfectionism and self-handicapping to further understand self-handicapping and perfectionistic tendencies. Finally, multiple linear regression was used to explore the predictive relationship between demographic variables, perfectionism, and self-handicapping.

Transparency and Openness

We report how we determined our sample size, all data exclusions, and all measures in the study, and we follow Journal Article Reporting Standards (JARS; Kazak, 2018). All data have been made publicly available at the Open Science Framework and can be accessed at https://osf.io/bk8wt/?view_only=c1c7347ec4ef4f19891b2b2ea641700f. Data were analyzed using SPSS Statistical Package 27. This study's design and its analysis were not pre-registered.

Results

Preliminary Analysis

Following the recommendations of Tabachnick and Fidell (2007), the data was screened for missing data and outliers. A considerable number of responses ($n = 61$) were incomplete. Given the wide range of stopping points among these participants, lack of use for partial data, and sufficient statistical power with retained participants ($1 - \beta = 0.80$), all partial data sets were removed from the analysis. No outliers ($Z = +/- 3.29$, $p < .001$) were identified.

Primary Analysis

Results of the one-way repeated-measures ANOVA indicated significantly different scores for the three perfectionism subscales ($F(2, 314) = 16.39, p < .001, \eta_p^2 = .09$). Participants reported the highest level of SOP ($M = 20.13, SD = 7.53$), followed by OOP ($M = 18.20, SD = 6.0$) and then SPP ($M = 17.50, SD = 7.12$). Pairwise comparisons indicated that SOP was significantly higher than OOP ($M_{diff} = 1.93, p < .001$) and SPP ($M_{diff} = 2.63, p < .001$), with no significant difference between OOP and SPP ($M_{diff} = 0.70, p < .420$). The mean score for the SHS was 24.7 ± 11.4 ; based upon a scale range of 0–70 this would suggest relatively low levels of self-handicapping tendencies in the present sample.

Bivariate correlations are displayed in Table 1. The three dimensions of perfectionism were significantly positively correlated with each other (all p 's $< .001$). Overall perfectionism scores had a significant, moderate, positive correlation with self-handicapping ($r = .255, p = .001$). When examining the subscale scores, SOP was not significantly correlated with self-handicapping ($r = .142, p = .074$), OOP had a significant, small, positive correlation with self-handicapping ($r = .183, p = .02$), and SPP had a significant, medium, positive correlation with self-handicapping ($r = .345, p < .001$).

Exploratory Analysis

An exploratory analysis was conducted to determine the relationship between demographic factors (i.e. age, sex, years running experience) and levels of perfectionism and self-handicapping among endurance runners. Correlation analysis indicated that age had a significant, small, negative correlation with perfectionism ($r = -.231; p = .004$). Correlations between age and the three subtypes of perfectionism were also negative and significant (SOP: $r = -.201, p = .012$; OOP: $r = -.191, p = .017$; SPP: $r = -.212, p = .008$). In regards to self-handicapping, age was negatively correlated with self-handicapping ($r = -.337; p < .001$), indicating that younger runners reported a greater tendency to self-handicap than older runners. Further, years of running experience was negatively correlated with self-handicapping ($r = -.170; p = .032$). Using an independent t-test, a comparison of means between females ($M = 56.7, SD = 17.8$) and males ($M = 54.2, SD = 18.5$) showed no significant difference in overall perfectionism scores ($t(89.57) = .802; p = .424$). A comparison of mean self-handicapping scores between females ($M = 25.84, SD = 12.2$) and males ($M = 22.2, SD = 9.0$) also showed no significant difference ($t(155) = 1.77; p = .079$).

Multiple Regression

Given the established correlations, parametric multiple regression was used to determine the influence of age, years of running experience, and perfectionism on

self-handicapping tendencies. A multiple linear regression model was calculated using the enter method, meaning all independent variables were entered into the equation at the same time. This analysis is appropriate when dealing with a small set of predictors and when the researcher does not know which independent variables will create the best prediction equation (Cohen et al., 2014). According to Warner (2020), a minimum of 25 participants for each predictor variable is necessary for adequate power ($N = 25 \cdot k$) in multiple regression. Our sample of 158 participants therefore met the basic assumption of sample size as the study included four predictor variables. Assumption of normality was met based on calculations for skewness and kurtosis, which were determined to be between the acceptable range of -3.29 and 3.29 (Field, 2013) for age, years of running experience, OOP, SPP, and self-handicapping. Visual observation was utilized to conclude that the independent variables: age, years of running experience, OOP, and SPP, exhibit similar variance across all values. Assumption of linearity was assessed through correlation analyses. Assumption for low collinearity was met with tolerance not substantially lower than 1.0 and VIF not substantially greater than 1.0. Review of the plot of ZPRED (ZY) and ZRESID, indicated that the scores were not concentrated in one area, the scores were evenly distributed above and below the mean, and there was no clear relationship between the predicted Y score and residuals. Thus, the assumption of errors was met in regards to homoscedasticity, normality, and linearity, respectively.

The regression equation for the data was significant, $F(4, 151) = 9.206, p < .001$. Age, $b = -.290$ (-.380, -.200), $t(151) = -3.224, p = .002$, and SPP, $b = .517$ (.371, .663), $t(151) = 3.545, p < .001$, were significant predictors for self-handicapping. The two predictor variables explained about 20% of the variance in self-handicapping tendency ($R^2 = .196$). The standardized equation developed from this sample of endurance runners ($N = 158$) was $Z_Y = -.270Z_{x_1} + .326Z_{x_2}$.

Discussion

The present study sought to establish if perfectionism is present in distance runners and to determine the relationship between perfectionism and self-handicapping. Participants reported significantly higher levels of SOP, compared to OOP and SPP. Based on what is known about these types of perfectionism, it can be reasonably concluded that it is better for the OOP and SSP to be lower because they align with perfectionistic concerns, which are considered negative or maladaptive (Stoeber, 2015). Our findings are in line with prior work from Jowett et al. (2018), who reported mean scores of 25.9 for SOP and 14.8 for SPP in marathon runners. Likewise, Hall et al. (2009) found that in recreational middle-distance runners, the mean score for SOP and SPP were 21.5 and 15, respectively. Similar scores were found in the present study, albeit runners had slightly lower personal standards (SOP = 20.1), and slightly higher perceived expectations (SPP = 17.5) when compared to previous research findings. No prior data could be found for OOP in runners. MPS subscale scores can range from 5–35. The mean

score for each subscale in the present study fell within 17.5 to 20.1. Although the MPS does not offer a benchmark score by which to classify individuals as perfectionistic or not, scores in this range have been described as moderate to moderately high (Appleton et al., 2010).

The order in which the types of perfectionism were prominent in the current study is consistent with normative data for the MPS (Hewett & Flett, 2004) and studies with non-athlete participants (e.g., Pannhausen et al., 2020; Stoeber, 2015). A higher level of SOP among endurance runners is generally expected given previous research. For example, Stoeber et al. (2009) found that both high personal standards and high personal goals could predict triathlon race performance. Without high personal standards and/or goals, athletes would lack direction when striving for a specific outcome (Stoeber et al., 2009; Locke & Latham, 2019). When associated with perfectionistic striving, SOP is largely adaptive (Campbell & Di Paula, 2002). The issue with SOP is when it becomes maladaptive. When perfectionism is maladaptive, individuals are unable to be flexible with their goals and therefore resort to negative forms of coping, such as self-handicapping (Kearns et al., 2008).

Mean perfectionism scores in the present sample were compared to published MPS norms (adjusted for number of items) for community members aged 26-45 years (Hewett & Flett, 2004), as well as MPS data reported in other perfectionism studies. In the current sample, mean SOP and OPP scores were lower than published norms (Hewett & Flett, 2004), and lower than means reported in other community samples (e.g., Hewitt et al., 1991; Powers et al., 2011; Sederlund et al., 2020; Stoeber, 2015; Vacca et al., 2021). In contrast, SPP in the current sample was higher than published norms (Hewett & Flett, 2004) and some community samples (Pannhausen et al., 2020), although scores were comparable with those reported in other studies (e.g., Appleton et al., 2010; Hewitt et al., 1991; Vacca et al., 2021). On this basis, it appears that levels of perfectionism in distance runners are lower than or similar to those observed in the general population.

In line with expectations, results indicated that SPP had the strongest positive correlation with self-handicapping. Both OOP and SPP were related to self-handicapping while SOP was not. Self-handicapping and SPP are both predicated on the opinions of others; therefore, it was expected that the two concepts would be correlated. Although the link between these specific concepts has not been previously researched, maladaptive perfectionism has been shown to predict self-handicapping tendencies (Stewart & De George-Walker, 2014). When an individual believes that they may not meet the perceived expectations of others, self-handicapping provides an excuse for possible imperfection.

The relationship between OOP and self-handicapping was previously unexplored. The current study indicated a small positive relationship between OOP and self-handicapping tendencies. It could be that high other-expectations lead to self-handicapping, high self-handicapping leads to high expectations of others, or OOP simply co-exists in individuals with other perfectionistic tendencies. The latter of these explanations may be the most plausible as regression analysis showed that in the presence of SSP, OOP is no longer significant.

The current study does not show a link between SOP and self-handicapping; however, Kearns et al. (2008) suggest a theoretical model that links core perfectionistic thoughts to self-sabotaging behaviors (e.g., behavioral self-handicapping). For example, if an individual thinks, “my performance tomorrow won’t be good,” they may protect their self-esteem by not putting forth their full effort. This demonstration of reduced effort, a subscale of the SHS, can protect from self-judgment. If expressed overtly, this behavior also protects the individual from others’ judgment. Unfortunately, the internal consistency of the effort subscale of the SHS has been shown to be unacceptably low across several sport and exercise studies (Shields & Paskevich, 2001). This may, in part, explain why there was no relationship between self-oriented perfectionism and self-handicapping. If an individual is attempting to meet their own high standards, they may be more inclined to reduce effort as opposed to making excuses. Excuse-making, the second subscale of the SHS, is more appropriate in situations that involve other’s expectations.

Exploratory analysis of demographic variables showed that both age and years of running experience were significantly correlated with self-handicapping tendencies. Multiple regression analysis indicated that, when considered together, only age was a significant predictor of self-handicapping. A reduction in self-handicapping tendencies with increased age may be the result of psychological changes that could occur over the lifespan. For example, previous research found that older adults report lower levels of perfectionism compared to young adults (Robinson et al., 2021) and that older runners tend to be less competitive than younger runners (Martin et al., 1994). Interestingly, older adults may also have self-presentational concerns, such as appearing competent (Martin et al., 2000); however, in the context of this study, reduced competitiveness may compensate for any age-related decrements to performance. Age has also been shown to be a significant negative predictor of self-handicapping in other domains (e.g., Stewart & De George-Walker, 2014).

Limitations

The findings should be considered in context of the limitations of the current study. There is currently no measure that objectively identifies high levels of self-reported perfectionism. Therefore, it is difficult to identify whether the levels reported by the participants would be classified as such, or when levels of any one type of perfectionism are more likely to have negative consequences. Accordingly, negative or maladaptive perfectionism can only be inferred when associated with outcomes such as self-handicapping.

Due to the lack of an exercise- and sport-specific measure, the current study used the SHS, which was developed for and validated in academic setting. Although the shortened 14-item scale removed some of the problematic, unrelated items of the 25-item scale, several statements may still not be appropriate across settings. For example, “I often think I have more than my share of bad luck in sports, card games, and other measures of talent” does not necessarily reflect an individual’s excuse-making towards exercise and sport. Additionally, while

the SHS has an adequately reliable composite score, it has been shown that the effort subscale is not a reliable measure for sport populations (Shields & Paskevich, 2001). Once a more appropriate measure of self-handicapping is developed for exercise and sport, it is important for this data collection to be replicated for more accurate interpretation and representation of endurance athletes.

Future Directions

The current study can be used to inform future research on self-handicapping in distance runners. Given the aforementioned consequences of self-handicapping behavior as well as previous research showing that athletes use self-handicapping for similar reasons to individuals in academia (Coudevylle et al., 2011), future research should establish a sport/exercise-specific self-handicapping questionnaire. Additionally, research should continue to explore antecedents to self-handicapping behavior in endurance athletes beyond perfectionism. The current study indicates that personal factors, such as age, can influence self-handicapping tendencies, while previous research suggests that external factors such as motivational climate may significantly impact type and frequency of self-handicapping behaviors (Coudevylle et al., 2009).

Notwithstanding the preceding limitations, the findings from the present study offer support for previous research that identifies perfectionism as an antecedent to self-handicapping (e.g., Stewart & De George-Walker, 2014). This study reports on another population in which more research on self-handicapping is necessary. Endurance runners reported higher scores for SSP than those found in previous studies with endurance athletes, but relatively low self-handicapping scores with a mean of 24.7 out of a possible 70. Nevertheless, results indicated that SSP and self-handicapping were significantly correlated. Alternative measures with sport-specific handicapping items may result in higher self-handicapping scores than those found with a generic scale. Endurance running is a unique endeavor and therefore should be addressed through the lens of a domain-specific self-handicapping perspective.

Contributions

Contributed to conception and design: DC

Contributed to acquisition of data: DC

Contributed to analysis and interpretation of data: DC, JCM

Drafted and/or revised the article: DC, JCM

Approved the submitted version for publication: DC, JCM

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Appendix A

Table 1.

Means, Standard Deviations, and Bivariate Correlations for Self-Handicapping and Perfectionism Subscale Scores

| | <i>M</i> | <i>SD</i> | SH | Perf | SOP | OOP | SPP |
|------|----------|-----------|--------|--------|--------|--------|--------|
| SH | 24.7 | 11.4 | - | .255** | .142 | .183* | .345** |
| Perf | 55.9 | 18.0 | .255** | | .894** | .838** | .877** |
| SOP | 20.1 | 7.5 | .142 | .894** | | .631** | .662** |
| OOP | 18.2 | 6.0 | .183* | .838** | .631** | | .601** |
| SPP | 17.5 | 7.1 | .345* | .877** | .662* | .601** | |

Note. SH = self-handicapping; Perf = perfectionism; SOP = self-oriented perfectionism; OOP = other-oriented perfectionism; SPP = socially prescribed perfectionism. * $p < .05$; ** $p < .001$.