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Running head: THE EFFECTS OF COACHING FEEDBACK

The Effects of Coaching Feedback on Perfectionism and Disordered Eating in College Athletes

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Abstract

Feedback given to athletes by their coaches is a topic that has not been extensively researched in terms of its effect on perfectionist tendencies and disordered eating in athletes. It is important to reduce factors that are associated with disordered eating before the overt disordered eating behaviors can develop into a more severe clinical-level eating disorder. In investigating these links, parallels were drawn between research that has shown negative effects from harsh *parental* feedback to hypothesize about the effects of *coaching* feedback. The hypotheses examined include: 1. Feedback from coaches that is interpreted by athletes as harsh, ego-involved, or highly critical will be positively correlated with socially prescribed perfectionism in those athletes. 2. Athletes with higher levels of pre-existing self-oriented perfectionism will expect harsher and more critical feedback from coaches than athletes that have lower levels of pre-existing self-oriented perfectionism. 3. Unmet feedback expectations will be positively correlated with disordered eating behaviors. 4. Socially prescribed perfectionism will mediate the relation between harsh, ego-involved, or highly critical feedback and disordered eating behaviors. In the current study, 103 collegiate athletes reported their attitudes and behaviors concerning eating, body image, perfectionism, the feedback they received from their coaches, and the feedback they want from their coaches. Significant results were found showing negative correlations between negative feedback expected and self-oriented perfectionism in women. Significant positive correlations were found between socially prescribed perfectionism and disordered eating for both men and women. Limitations of the study included the way that negative feedback and perfectionism were measured. It would be interesting for future studies to examine the role of coaching feedback at in a Division I athletic environment. Future research should continue to examine the effects of coaching feedback on perfectionism and disordered eating so that coaches and athletes can be well-informed about ways to establish a healthier athletic environment.

The Effects of Coaching Feedback on Perfectionism and Disordered Eating in College Athletes

Athletes at all levels of competition strive to perform perfectly and win at their sport. In order to perform at their peak, athletes must physically train their bodies and maintain a healthy lifestyle. Some athletes cross the boundary of health and push themselves to unhealthy limits to try to succeed. Added pressures from external sources, such as coaches, may fuel their need to perform perfectly and result in unhealthy eating behaviors and attitudes. The current research investigated whether negative feedback from coaches was associated with perfectionist tendencies in athletes, which, in turn, could lead to disordered eating symptoms. First, the origins and types of eating disorders will be discussed, explaining the differences between clinical eating disorders and subclinical disordered eating. Then the discussion will turn to why athletics is an important domain in which to investigate disordered eating. Studies that have investigated the prevalence of disordered eating will be examined. Past literature has shown a wide variety in the prevalence rates of disordered eating. This discrepancy will be discussed in the following section. Finally, the measurements that have been used in past studies concerning eating disorders will be explained.

In the next section on perfectionism, the different types of perfectionism will be defined and measurements used to assess perfectionist tendencies will be discussed. The consequences of perfectionism will be reviewed, especially in an athletic domain. The final section will cover feedback. Multiple studies have looked at parental feedback and it has been shown that these results may parallel coaching feedback effects.

Keeping these variables in mind, the following research questions were investigated throughout the current study:

1. Is feedback received from coaches associated with socially prescribed perfectionism in athletes? If so, do those two variables interact to lead to disordered eating?

2. Does pre-existing self-oriented perfectionism influence the type of feedback that an athlete expects from a coach?

3. Is there a correlation between unmet feedback expectations and eating disorder symptoms?

These questions were investigated by surveying college athletes. They were asked questions relating to how they interpret the feedback they receive from their coaches as well as the feedback that they expect to hear from coaches. In addition, the athletes also answered several questions that pertained to perfectionist tendencies and disordered eating. The testing procedure will be discussed later in the paper.

Eating Disorders

Origins

A common misconception about eating disorders is that they are simply about body weight or shape dissatisfaction, but previous research suggests that clinical eating disorders extend well beyond outward appearance and center around grossly illogical thoughts and beliefs (Beals, 2004). These illogical thoughts and beliefs can result from many sources, one of which is social pressures. Tylka and Subich (2004) found that pressure for thinness from significant others as well as from the media can lead to the internalization of the thin-ideal stereotype. This internalization was linked with body image disturbance which then led to disordered eating. Other research has suggested that additional social factors may also eventually lead to the internal disturbances found in eating disorder patients. Piran and Cormier (2005) studied the effect of need suppression and anger suppression. These factors have been conclusively linked to the definition of the female gender which society has defined. It was found that these factors are also associated with symptoms of eating disorders.

Types

The two most common classes of eating disorders are anorexia- and bulimia related. Typical symptoms and characteristics of a person with anorexia nervosa include a fear of being fat, body image disturbance, denial regarding whether they have a problem with eating and body image, issues with control, high levels of achievement, goal-orientation, perfectionism, and low self-esteem (Beals, 2004). Diagnostic criteria of anorexia nervosa include refusal to maintain a body weight over a minimum normal weight for age and weight, intense fear of gaining weight or becoming fat, disturbance in the way body shape, size, and weight is perceived, and the absence of at least three consecutive menstrual cycles for females. Patients with bulimia nervosa tend to exhibit many of the same characteristics as anorexia, but their weight does not decrease below a normal body weight. Diagnostic criteria of bulimia nervosa include recurrent episodes of bingeing, or uncontrollable overeating, feelings of lack of control over eating behaviors during binges, persistent concern with body shape and weight, and regular episodes of purging, which may be accomplished through vomiting, the use of laxatives or diuretics, strict dieting or fasting, or excessive exercise. An eating disorder may start as one type but later develop into the other (Thompson & Sherman, 1993).

Subclinical Disordered Eating

While eating disorders are a very serious problem in the United States, a related problem is disordered eating and the presence of subclinical eating disorder symptoms. Subclinical disordered eating involves the overt behaviors of a clinical eating disorder but lacks the amount and the severity of psychological disturbances such as an extreme fear of becoming fat or being severely under a normal weight yet still believing oneself to be fat (Beals, 2004). Previous research has shown that disordered eating is quite prevalent; in a study done by Rozin, Bauer, and Catanese (2003), 44% of a sample of college students associated food more with health than

pleasure although 60% claimed that enjoying food was one of the greatest pleasures in their lives. While the association of food with health is not necessarily a problem at a moderate level, when this idea is taken to an extreme, it could transition into pathogenic behaviors, such as restrictive eating or bingeing and purging in order to maintain self-imposed, stringent health goals. In addition, if food is related to health, which is often associated with restraint, negativity, and guilt, food may be indirectly linked with these feelings, and this link could lead to disordered eating symptoms. Twenty-eight percent of the sample surveyed in Rozin, Bauer, and Catanese (2003) said they would prefer taking a nutrient pill to eating. Twenty percent obsessed about exercise while 21% obsessed about eating. Again, while there is nothing harmful in wanting to be healthy, obsessing about aspects of food and exercise can lead to maladaptive behaviors such as food restriction or excessive exercise. According to these statistics, many Americans think about food in a negative way. In other cultures, such as France, food choices are more likely to be made based on enjoyment rather than health. Eating is seen as a social experience with little worry or guilt attached.

Eating Disorders in Athletes

A population of particular interest in the eating disorder world is athletes. In one sample of college athletes, 16% of females and 20% of males were found to have subclinical symptoms of disordered eating (Sanford-Martens, Davidson, Yakushko, Martens, Hinton, & Beck, 2005). While subclinical symptoms are not as severe as symptoms in diagnosed, clinical eating disorders, food restriction, bingeing and purging, and obsessive thoughts are still of concern because these may develop into severe psychological disturbances and eventually lead to a clinical eating disorder (Thompson & Sherman, 1993).

Research by Beals (2004) suggests that subclinical symptoms should be monitored tightly in the athletic world because athletes often struggle with eating disorders in a different context

than non-athletes. For athletes, the goal sought through the disordered eating is not only weight loss or a “perfect” body, but also improved performance due to the weight loss. In addition, abnormal eating and excessive exercise are easier to justify and disguise in a sports setting than a non-athletic setting (Beals, 2004). Within a sports setting, there are certain factors that are more choice and perceptions of behaviors of teammates are linked with disordered eating. Data from a study by Reinking and Alexander (2005) suggests that lean-sport athletes, those involved in distance running and swimming, gymnastics, dance, and diving, are at a greater risk for disordered eating than athletes in non-lean sports, including basketball, softball, and volleyball, though these athletes are still at-risk.

An additional predictor of disordered eating in athletes is perceptions of normative eating and weight regulation behaviors. In other words, an athlete may perceive pressure from teammates or coaches and believe it is the norm to use extreme measures to stay thin (Engel et al., 2003).

Prevalence

The exact number of athletes affected by disordered eating is unclear. There is a wide discrepancy in the literature concerning the prevalence of disordered eating in athletes. Research by Beals (2004) found that studies have estimated that anywhere from 1-62% of female athletes suffer from disordered eating; the range for male athletes is 0-57%. There are also inconsistent findings about whether athletes have a higher prevalence rate than non-athletes. One side of the debate has found that athletes do not exhibit more disordered-eating symptoms, or that they at least exhibit fewer symptoms than their non-athlete counterparts (Reinking & Alexander, 2005; DiBartolo & Shaffer, 2002). The opposite side of the debate (Beals, 2004) sees athletes as more at-risk to develop disordered eating because of the various nuances of the athletic context.

Additionally, many athletes peak in their performance during adolescence, which is a very vulnerable time for the development of disordered eating (Beals, 2004). Lastly, adolescent athletes are more likely to possess certain behavioral and psychological traits, such as lack of control and high standards for personal achievement, which have been linked with disordered eating (Taub & Blinde, 1992).

These behavioral and psychological traits can be measured through a variety of eating disorder questionnaires. As such, in the next section, some of the more common ways in which disordered eating symptoms have been assessed will be outlined.

Measurement

There are several measurements of eating disorder symptoms that are commonly used by researchers who study this construct including the EAT-40 (Garner & Garfinkel, 1979) and the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982). Garner and Garfinkel conceptualized anorexia in the EAT-40, while Garner, Olmsted, Bohr, and Garfinkel conceptualized three facets of bulimia: dieting, bulimia and food preoccupation, and oral control, in the EAT-26.

Also relevant to the measurement of disordered eating are the Eating Inventory (Stunkard, 1981) and the Eating Disorder Inventory (Gardner, Olmstead, & Polivy, 1983; EDI). Stunkard conceptualized eating disorders through three facets of restrained eating: cognitive restraint, emotional lability, which is defined as instable emotions, and perceived hunger. Gardner, Olmstead, and Polivy (1983) conceptualized eight facets of eating disorders: drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, and maturity fears. The Body Esteem Scale (Franzoi & Shields, 1984) focuses on the construct of body esteem and is divided into three facets for each gender: sexual attractiveness, weight concern, and physical condition for females, and physical attractiveness, upper body strength, and physical condition for males.

Finally, eating disorder symptoms are conceptualized specifically with athletes in mind in the Survey of Eating Disorders among Athletes (SEDA; Guthrie, 1991). The facets of this scale include identifying the prevalence of eating disorders within a group, factors within the athletic environment that may contribute to these disorders, and preventative measures that may reduce the incidence of eating pathology within the selected sport.

For the purposes of the current research, because the focus was upon subclinical disordered eating symptoms, the following assessments were chosen: The Body Esteem Scale (Franzoi & Shields, 1984) and the dieting and oral control dimensions of the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982).

In sum, it should be noted that though there have been hundreds of studies done on the topic of eating disorders, researchers still do not agree on the prevalence rates of eating disorders especially among athletes (Beals, 2004). In addition, as noted above, the unique context of the athletic world creates an interesting dynamic within which to explore disordered eating, though, to date, this area has been reasonably understudied; continued research is needed in this domain. Continued research may be informative to athletes and coaches about specific dangers that the athletic world presents in terms of disordered eating. A danger that is not specific to the athletic world, but may develop in a unique way within athletics is perfectionist tendencies. Coaches should be aware of the expectations they demand from their athletes as well as the expectations athletes demand from themselves. In the following section, perfectionism in an athletic context and its relationship to eating disorders will be discussed.

Perfectionism

Definition and Measurement

Perfectionism is the tendency to set extremely high standards. According to Hewitt and Flett (1991) there are three dimensions of perfectionism: self-oriented, socially prescribed, and

other-oriented, with self-oriented and socially prescribed being the more commonly studied facets. Self-oriented perfectionism, which is also termed adaptive perfectionism, is the tendency to set unrealistically high standards for oneself and critique oneself on the basis of these high standards. Socially prescribed, or maladaptive, perfectionism occurs when one feels that others place unreasonable standards on one's behavior and evaluate one critically. These facets of perfectionism were conceptualized in the Multidimensional Perfectionism Scale (1991) developed by Hewitt and Flett.

Frost, Marten, Lahart, and Rosenblate (1990) have also conceptualized five facets of perfectionism in the Multidimensional Perfectionism Scale (MPS): concern over mistakes, doubts about actions, personal standards, parental expectations, and parental criticism. These measures have been used in countless studies to test the presence of perfectionism, as well as the consequences associated with perfectionism.

Consequences

Perfectionism can lead to negative consequences in many facets of life, but in the current review, perfectionism's link to eating disorders was of particular interest. It is important that perfectionism is not considered a unidimensional trait in this domain, but rather a multidimensional trait comprised of self-oriented and socially prescribed perfectionism. Sherry, Hewitt, Besser, McGee, and Flett (2004) found that self-oriented perfectionism and socially prescribed perfectionism were both independently and positively related to eating disorder symptoms. More concretely, the effect of self-oriented perfectionism on eating disorder symptoms was dependent on the level of socially prescribed perfectionism. In other words, self-oriented perfectionism may lead to eating disorder symptoms in an individual with high socially prescribed perfectionism but may have no negative effects on an individual with low socially

prescribed perfectionism. This indicates that women who exhibit both types of perfectionism are particularly vulnerable to the development of eating disorders.

Other studies have found somewhat different results. Hewitt, Flett, and Ediger (1995) found support for the theory that socially prescribed perfectionism is more strongly linked with eating disorder symptoms than self-oriented perfectionism. More specifically, they found that socially prescribed perfectionism was related broadly to disordered eating patterns, such as food restriction or bingeing and purging, concerns about body appearance, and self-esteem, while self-oriented perfectionism was only linked with dieting and concerns with being thinner.

Perfectionism in Athletics

As is the case with disordered eating, the added factor of athletics has interesting implications for the study of perfectionism. Hopkinson & Lock (2004) found that the greatest risk factor for disordered eating attitudes for female athletes was perfectionism. As previously noted, athletics at any level can be demanding in various ways. Some of the same characteristics that athletes need to meet these demands, namely strict discipline and perfectionism, can also lead to negative consequences, such as negative mood states or disordered eating (Schwarz, Gairrett, Aruguete, & Gold, 2005; Stirling & Kerr, 2006). In one recent article, athletes, as compared to their non-athlete counterparts, had more tendencies towards perfectionism, which was associated with maladaptive eating attitudes (Schwarz, Gairrett, Aruguete, & Gold, 2005).

Whereas there is a direct link between perfectionism and eating disorders, an indirect link through anxiety and depression has also been evidenced. First, Stirling and Kerr (2006) found an association between the mood states of depression-dejection and tension-anxiety and socially prescribed perfectionism in athletes. In addition, Santos, Richards, and Bleckley (2007) found links between depression and disordered eating symptoms, and Kaye, Bulik, Thornton, and Plotnicov (2006) studied the co-morbidity of anxiety disorder and eating disorders. The results of

these studies show that anxiety disorders and depression may be a link that connects signs of perfectionism and symptoms of disordered eating.

The Role of Feedback

As stated earlier, athletes are at particular risk of developing both perfectionism and eating disorders, both of which can lead to negative consequences. Research has shown that athletes possess internal characteristics that may lead to these negative consequences (Taub & Blinde, 1992; Schwarz, Gairrett, Aruguete, & Gold, 2005; Stirling & Kerr, 2006), but few researchers have examined coaches' feedback as an external source of pressure, and thus, a source of perfectionist tendencies and disordered eating for athletes. In the current research, it was investigated whether coaches' feedback was a critical contributor to disordered eating in athletes, in part because of the parallels between coaching and parenting.

Many of the theories concerning the development of perfectionism center around parents as an external source of pressure. Several elements of parenting style, including parenting techniques, control, and feedback have been found to have an influence on perfectionism in children (Kawamura, Frost, & Harmatz, 2002; Enns, Cox, & Clara, 2002; Rice, Lopez, & Vergara, 2005; Soenens et al., 2005; Biran & Reese, 2007). More specifically, Kawamura, Frost, and Harmatz (2002) found that the perception of having authoritarian and harsh parents was related to higher levels of maladaptive perfectionism. Similarly, Enns, Cox, and Clara (2002) found that harsh parenting and perfectionist parenting were associated with maladaptive perfectionism. In these studies, perfectionist parenting was defined as having high expectations of the self and the child, while harsh parenting was characterized by criticalness, over-control, lack of care, and excessive expectations. In addition, research conducted by Soenens et al. (2005) suggested that parents with maladaptive perfectionist tendencies behaved towards their children in a more intrusive and psychologically controlling way. It further suggested that, as such,

psychological control may be the intervening variable in the transmission of maladaptive perfectionism from parents to their adolescent daughters. In considering these findings, it seems logical that the socially prescribed perfectionism that stems from an external source, the parents, is eventually internalized and turns into harsh self-criticism, or self-oriented perfectionism. In a similar way, then, if coaches are seen as harsh or overly controlling, they too may be a source of perfectionist tendencies in athletes, as noted above.

Other studies more specifically examined parental feedback as a predictor of perfectionism in children. Rice, Lopez, and Vergara (2005) found that maladaptive perfectionism was strongly linked with high levels of parental criticism. A connection was also found supporting the claim that an individual's sense of worthiness was contingent upon an exhaustive attempt for perfection. Biran and Reese (2007) supported these results by demonstrating positive correlations between high parental expectations, parental criticism, and neurotic levels of perfectionism in college students. Their findings support the idea that perfectionism can originate from relationships with parents who are highly critical and who have high expectations. In sum, this style of parenting may have harmful effects on personality development, in particular developing a sense of self-worth and developing a healthy amount of self-criticism.

Lacking self-worth or developing an unhealthy amount of self-criticism, which may develop within a family, can also be present in athletic teams. Feedback from coaches may not always be positive, which could influence perfectionist tendencies in athletes. Smith, Fry, Ethington, and Li (2005) examined athletes' perceptions of their coaches' feedback behavior and found that athletes who perceived the feedback from their coaches to be positive and encouraging after both successful and unsuccessful performances also perceived a task-involving climate, which focuses on personal effort and improvement. Athletes who perceived their coaches' feedback as less positive with higher amounts of punishment feedback perceived an

ego-involving climate, which measures success based on comparisons between peers. Moreover, research shows benefits for athletes who perceive a task-involving climate rather than an ego-involving climate (Smith, Fry, & Li, 2005). Because ego-involved climates focus on a continual, socially prescribed comparison between peers, it was hypothesized that this type of climate would be more likely to produce athletes with maladaptive perfectionism, and hence, disordered eating symptoms.

In a related study, Biesecker and Martz (1999) used vignettes to study coaching style effects on disordered eating-related attitudes and behaviors. Participants who listened to a negative vignette, which included a coach who was performance-centered, indicated greater body image disturbance, weight preoccupation, and dieting than participants who listened to the positive vignette, which included a coach who was person-centered and focused on personal improvement. These studies show that coaches' feedback does indeed have an effect on players.

Current Study

The current study focused on the effects that coaches' feedback has on perfectionism and disordered eating in a sample of athletes. Because Salminen and Liukkonen (1996) found that the coach-athlete relationship is emotional in tone it is not surprising that coaches who consider the opinions and feelings of their athletes have the best relationship with their athletes. This finding supports the notion that the coach-athlete relationship is an influential one.

The current review of the literature has shown that perfectionism is a trait that, because of its strong association with disordered eating behaviors, should be further investigated within the context of athletics. Although self-oriented and socially prescribed perfectionism are facets that have often been studied as a single facet, past research suggests that their affects on eating disorders should be examined independently. By looking at these factors independently, a new relation, whether it is direct or indirect, between perfectionism and disordered eating may be

delineated. In addition, examining the additional factor of coaches' feedback added a new element to the overall picture of perfectionism and disordered eating. The coach-athlete relationship is comparable to some aspects of a parent-child relationship in terms of the affects that parenting styles can have on perfectionism development. More specifically, research has established the connection between negative parenting techniques and perfectionism development in children and adolescents, but questions concerning a similar link between coaches and athletes remain unanswered.

For these reasons, the aim of the current study was to research the effects that feedback from coaches has on perfectionism and eating disorder symptoms (subclinical disordered eating) in collegiate athletes. While there is ample research in psychology about eating disorders, the less extreme subclinical eating disorders and disordered eating behaviors have not been covered as extensively. In addition, a clear picture of the prevalence rate of disordered eating among athletes has not been established. This is a piece of the literature that was investigated in the current study.

In addition to the theoretical development this study sought to contribute, this study also has significant real world implications. In an attempt to find a link between certain types of coaching feedback, perfectionism, and disordered eating, future athletic programs may be able to monitor coaches' behaviors and reduce the negative effects had on their athletes. In addition, coaches will be able to evaluate their own behaviors and design a healthier coaching philosophy. Finally, the current study could help athletes recognize their own problem thoughts and behaviors before they result in negative effects on their performance and health.

Based upon the past literature regarding perfectionism, eating disorders, and feedback, a model was designed to demonstrate the hypothesized links among these variables. This model was adopted from a study done by Sherry et al. (2004; see Figure 1). As in previous research, it

was expected that a small to modest correlation would be found between self-oriented perfectionism and socially prescribed perfectionism, but that they work independently of one another.

Moreover, while feedback is a single element in the current study, it was investigated in two different ways. “Feedback received” is the perception of the type of encouragement or criticism that was given to the athlete from the athlete’s perspective. “Feedback expected” is the type of encouragement or criticism that the athlete believes is necessary for optimal well-being and performance. It is important to look at feedback in these two different ways because a discrepancy between “Feedback received” and “Feedback expected” could have a big impact on an athlete and how the feedback from the coach is interpreted and used. Bridging the gap between “Feedback received” and “Feedback expected” could be one way to reduce the potential for perfectionist tendencies and disordered eating in athletes.

In this model in the current study, there are multiple paths involving feedback and perfectionism that can lead to disordered eating. Disordered eating symptoms may develop in athletes as a result of perceived or actual negative feedback received from a coach. The negative feedback then may assist in the development of socially prescribed perfectionism which then leads to disordered eating symptoms. As noted above, then, the socially prescribed perfectionism could lead to harsh self-criticism or self-oriented perfectionism, and this could also facilitate the disordered eating symptoms. Another path between these constructs is a direct link between self-oriented perfectionism, which may have developed earlier in life, and disordered eating symptoms. Additionally, an athlete’s expected feedback may mediate the relation between perfectionism and disordered eating. Lastly, it was hypothesized that pre-existing self-oriented perfectionism may lead an athlete to expect a certain type of feedback from a coach. If this type of feedback is not received, disordered eating symptoms may develop. Figure 1 illustrates the

model for the current study. It is beyond the scope of this thesis to test all of the relations shown in the model. However, several key relations will be tested, as noted below.

The specific hypotheses are as follows:

Hypothesis #1: Feedback from coaches that is interpreted by athletes as harsh, ego-involved, or highly critical will be positively correlated with socially prescribed perfectionism in those athletes.

Hypothesis #2: Athletes with higher levels of pre-existing self-oriented perfectionism will expect harsher and more critical feedback from coaches than athletes that have lower levels of pre-existing self-oriented perfectionism because they will be harsher and more critical of themselves.

Hypothesis #3: Unmet feedback expectations will be positively correlated with disordered eating behaviors.

Hypothesis #4: Socially prescribed perfectionism will mediate the relation between harsh, ego-involved, or highly critical feedback and disordered eating behaviors.

Method

Participants

A total of 103 athletes participated in the present study. There were 63 female athletes, 39 male athletes, and one athlete that chose not to disclose gender. The athletes were recruited through e-mail (more detail about this process will be given in the procedure section below). Upon showing interest in participating in the study, potential participants were sent a second e-mail which provided the necessary information to participate in the online study. The athletes were all members of an athletic team from Illinois Wesleyan University.

Measures

Demographics. Athletes were asked minimal background information, including gender, sport of participation, the number of years involved in the sport at IWU, and the number of years involved in the sport prior to IWU (please see Appendix A).

Body-Esteem Scale. To measure the multidimensional construct of body esteem, athletes completed the 32-item Body Esteem Scale ($\alpha=.91$, Franzoi & Shields, 1984, please see Appendix B) in order to measure the multidimensional construct of body esteem. Participants were asked to indicate how they felt about 32 different parts or functions of their own bodies. Participants used a 5-point Likert scale (where 1= Have strong negative feelings and 5= Have strong positive feelings) to make the assessment. All participants were given the 32-items in the same order. When this scale is given to females, the 32-items are broken down into three different factors: Sexual Attractiveness (13 items, SA, $\alpha=.77$), Weight Concern (10 items, WC, $\alpha=.88$), and Physical Condition (nine items, PC, $\alpha=.84$). Example items from the Sexual Attractiveness factor included lips, breasts, and sex drive. Example items from the Weight Concern factor included appetite, thighs, and appearance of stomach. Example items from the Physical Condition factor included physical stamina, biceps, and health.

When this scale is given to males, the 32-items are broken down into three different factors: Physical Attractiveness (10 items, PA, $\alpha=.76$), Upper Body Strength (seven items, UBS, $\alpha=.77$), and Physical Condition (13 items, PC, $\alpha=.91$). Four items out of the 32 were not included into one of the three factors, Physical Attractiveness, Upper Body Strength, or Physical Condition, and two items were included into two of the factors for males. Example items from the Physical Attractiveness factor included nose, appearance of eyes, and sex organs. Example items from the Upper Body Strength factor included muscular strength, width of shoulders, and

chest. Example items from the Physical Condition factor included reflexes, energy level, and weight. Final scores were calculated by taking the mean of each participant's responses to each subscale as well as overall. Higher scores indicated higher body esteem.

Eating Attitudes Test. To measure eating attitudes, athletes were asked to complete two out of three subscales of the Eating Attitudes Test-26 ($\alpha=.84$, Garner, Olmsted, Bohr, & Garfinkel, 1982; EAT-26, please see Appendix C). The two subscales completed were Dieting (13 items; $\alpha=.88$) and Oral Control (Seven items; $\alpha=.56$). The subscale of Bulimia and Food Preoccupation (six items) was excluded from the study because the items were not relevant to this study on subclinical disordered eating. All participants were given the items in the same order. Using a 6-point Likert scale (where 1=Never and 6=Always), athletes rated how often they engaged in behaviors related to weight, food, and eating and how often they thought certain thoughts related to weight, food, and eating. Sample statements from the Dieting subscale included, "Eat diet food," and "Think about burning up calories when I exercise." Sample statements from the Oral Control subscale included, "Take longer than others to eat meals," and "Feel that others pressure me to eat." The athletes' final scores were obtained by calculating the mean of their responses, accounting for one reverse scored item, such that higher scores indicated more disordered eating behaviors and attitudes.

Perfectionism Scale. To measure the multidimensional construct of perfectionism, athletes were asked to complete the Multidimensional Perfectionism Scale ($\alpha=.90$, Frost et al., 1990; MPS, please see Appendix D). The MPS contains 35-items and is composed of six subscales: Concern Over Mistakes (nine items, $\alpha=.87$), Personal Standards (seven items, $\alpha=.78$), Parental Criticism (four items, $\alpha=.83$), Parental Expectations (five items, $\alpha=.74$), Doubts About Actions (four items, $\alpha=.74$), and Organization (six items, $\alpha=.94$). All participants were given the

items in the same order. Using a 5-point Likert scale (where 1=Strongly Disagree and 5=Strongly Agree), athletes rated their thoughts on statements concerning standards, mistakes, expectations, organization, and performance. Sample statements from the Concern Over Mistakes subscale included, “I should be upset if I make a mistake” and “People will probably think less of me if I make a mistake.” Sample statements from the Personal Standards subscale included, “If I do not set the highest standards for myself, I am likely to end up a second-rate person,” and “It is important to me that I be thoroughly competent in everything I do.” Sample statements from the Parental Criticism subscale included, “As a child, I was punished for doing things less than perfectly,” and “My parents never tried to understand my mistakes.” Sample statements from the Parental Expectations subscale included, “My parents have expected excellence from me,” and “I never felt like I could meet my parents’ standards.” Sample statements from the Doubts About Actions subscale included, “I usually have doubts about the simple everyday things I do,” and “Even when I do something very carefully, I often feel that it is not quite done right.” Sample statements from the Organization subscales included, “I try to be a neat person,” and “Organization is very important to me.” The athletes’ final scores were obtained by calculating the mean of their responses such that higher scores indicated more perfectionist tendencies.

Feedback Scales. Athletes were asked to complete several feedback scales that were author-generated (please see Appendices E-J). They were asked to complete scales about how they perceive the feedback from their coaches as well as the feedback they expect from their coaches. Participants used a 7-point Likert scale (where 1=Not at all and 7=Extremely) to assess the extent to which each type of feedback was used or expected. The three different topics that were asked about were Feedback on Appearance and Health, Feedback on Academic Performance, and Feedback on Athletic Performance. Each scale that was completed asked about

the same 12 coaching feedback styles. An example of an item from the questionnaire on athletes' expectations of coaching feedback on appearance and health was, "When my coach wants to provide feedback about appearance (body weight, body shape) or health (eating, sleeping, and staying in shape), to what extent do you want s/he to ignore you?" An example of an item from the questionnaire on athletes' perception of coaching feedback on academic performance was, "When my coach wants to provide feedback about academic performance, to what extent does s/he give constructive criticism?" An example of an item from the questionnaire on athletes' perception of coaching feedback on athletic performance was, "When my coach wants to provide feedback about athletic performance, to what extent does s/he yell/get angry/demand?" For the purposes of analyses, the three feedback domains were examined separately. Within each feedback domain, for each of the 12 items, the score that represented the feedback the athlete *expected* was subtracted from the score that represented the feedback the athletes said they *received*. In other words, the absolute value was calculated for the scores from each of the difference equations from the 12 items and the mean of these differences were found. Then, it was examined how close these means were to zero. A score close to zero indicated that the athletes were receiving the type of feedback that they expected from their coaches. A score that was further away from zero indicated that the athletes were not receiving the type of feedback that they expect from their coaches.

Procedure

The athletes were contacted through e-mail from team rosters. Upon initial interest in participating in the study, they were provided with a link to the online study. After entering a designated user name and password, the informed consent was the first page of the study. Athletes were asked to click on a button labeled "ok" if they gave their consent to participate. Another button was labeled "No thank you." Participants could click on this button if they did

not want to participate and this would exit them from the survey. When consent to participate in the study was given, each athlete completed a series of questionnaires and submitted them online. Each athlete completed the questionnaires in the same order: Demographics, Body Esteem Scale, Eating Attitude Test, Perfectionism Scale, and finally the Feedback Scales. The final screen on the online program was the debriefing sheet. Athletes had the option to print the sheet for their own records. The study took about 20 minutes and athletes were able to complete the questionnaires on any computer with internet access. Athletes who participated in the study had a chance to win one of five \$25 gift cards to the campus bookstore.

Results

Before data analysis could begin, one item in the EAT was reversed scored. Means and Standard Deviations were calculated for all the scales and subscales. Scale reliabilities were also calculated for all the scales and subscales. For the feedback measures, scale reliabilities were first calculated using six of the 12 items as positive feedback items and the other six items as negative feedback items. Some of the scale reliabilities came back low for the feedback scales, so items were deleted or added to the positive or negative feedback subscales in order to increase reliabilities (See Table 1).

Hypothesis #1

The first hypothesis stated that feedback from coaches that is interpreted by athletes as harsh, ego-involved, or highly critical will be positively correlated with socially prescribed perfectionism in those athletes. To test this hypothesis, correlations were conducted between negative feedback that athletes received in academics, health, and athletics and two subscales from the MPS that represented socially prescribed perfectionism: Parental Criticism and Parental Expectations.

As expected, results showed one significant positive correlation between Negative Academic Feedback Received and Parental Expectations, $r(102) = .22, p=.03$. There were no other significant correlations (See Table 2).

Hypothesis #2

The second hypothesis stated that athletes with higher levels of pre-existing self-oriented perfectionism will expect harsher and more critical feedback from coaches than athletes that have lower levels of pre-existing self-oriented perfectionism. To test this hypothesis, correlations were conducted between negative feedback that athletes expected from their coaches and four subscales from the MPS that represented self-oriented perfectionism: Concern Over Mistakes, Personal Standards, Doubts About Actions, and Organization.

Contrary to expectations, results showed several significant negative correlations. A significant negative correlation was found between the subscale of Negative Appearance and Health Feedback Expected and the subscale of Personal Standards, $r(103) = -.26, p=.01$. A significant negative correlation was also found between the subscale of Negative Appearance and Health Feedback Expected and Organization, $r(103) = -.27, p=.01$. A significant negative correlation was found in Negative Athletic Feedback Expected and Organization, $r(103) = -.20, p=.05$. Finally, a negative correlation was found between Negative Academic Feedback Expected and Organization, $r(102) = -.25, p=.01$ (See Table 3a).

Correlational analyses were then conducted to examine hypothesis two separately for women and men. Several significant, negative correlations were found for females while none were found for males. For females, there was a significant negative correlation found between Concern Over Mistakes and Negative Athletic Feedback Expected, $r(63) = -.30, p=.02$. Another significant negative correlation was found between Concern Over Mistakes and Negative Academic Feedback Expected, $r(63) = -.31, p=.01$. A significant negative correlation was found

between Personal Standards and Negative Athletic Feedback Expected, $r(63) = -.34, p = .01$.

Another significant negative correlation was found between Personal Standards and the subscale of Negative Appearance and Health Feedback Expected, $r(63) = -.41, p = .01$. A final significant negative correlation was found for Personal Standards with the third domain, Negative Academic Feedback Expected, $r(63) = -.35, p = .01$. Looking at Organization, three significant negative correlations were found. The first correlation was with Negative Athletic Feedback Expected, $r(63) = -.27, p = .03$. The second correlation with the subscale of Negative Appearance and Health Feedback Expected was also significant, $r(63) = -.32, p = .01$. The third correlation found a significant relationship between Negative Academic Feedback Expected, $r(63) = -.28, p = .03$ (See Table 3b).

Hypothesis #3

The third hypothesis stated that unmet feedback expectations will be positively correlated with disordered eating behaviors. In order to measure unmet feedback, the 12 feedback items were divided into positive and negative feedback items. Each positive and negative group was slightly different for each of the three domains: Appearance and Health, Academic, and Athletic. A feedback item that would be seen as positive in one domain could be seen as negative in the other two domains. For example, the item "Blame him/herself" may be seen as positive feedback in the appearance and health domain because one of the duties of a coach is to keep his/her athletes healthy. However, "Blame him/herself" may be seen as negative feedback in the domains of academic and athletic performance because a coach should not necessarily be blaming him/herself for poor academic or athletic performance. Then, the athletes' feedback expected scores from all the positive feedback items in the appearance and health domain were subtracted from the feedback received scores in the same domain. Next, the absolute value was taken of the unmet feedback scores. The purpose of using the absolute value of the feedback

scores was to try to find any results that may have been covered up by the averaging process. For example, if an athlete answered that she wanted a level of 6 for “Constructive Criticism” from her coach, which is a positive feedback item, but only received a 2, that unmet feedback score is -4. The same athlete answered that she wanted a 2 for “Emphasize the Importance of Winning,” another positive feedback item, but received a 6. Her unmet feedback score for “Emphasize the Importance of Winning” is 4. Without using absolute value, the average of those scores is 0, which would incorrectly suggest that this athlete has no unmet feedback needs. Finally, the average of the absolute values of the unmet feedback scores was computed for positive appearance and health feedback. This same procedure was completed for the positive items in the academic and athletic domains, followed by the same process for all of the negative feedback items. Correlations were conducted between these unmet feedback scores and the EAT and its subscales, and the BES and its subscales.

As hypothesized, results showed one significant negative correlation between Positive Academic Feedback Difference and the overall BES, $r = -.21$ (102) $p = .03$ (See Table 4).

Hypothesis #4

The last hypothesis stated that socially prescribed perfectionism will mediate the relation between harsh, ego-involved, or highly critical feedback and disordered eating behaviors. However, the analyses stemming from hypothesis one showed little support for the link between socially prescribed perfectionism and harsh, ego-involved, or highly critical feedback and therefore a mediation analysis could not be conducted. It was still necessary to see if there was a link between socially prescribed perfectionism and disordered eating. For this reason, correlations for hypothesis four were run between the EAT and its subscales, the BES and its subscales, and two subscales from the MPS representing socially prescribed perfectionism: Parental Criticism and Parental Expectations.

Results showed several significant correlations. There was a significant positive correlation between the EAT and Parental Criticism, $r(103) = .34, p = .01$. A significant positive correlation was found between Dieting and Parental Criticism, $r(103) = .26, p = .02$. The relationship between Oral Control and Parental Expectations was a significant positive correlation, $r(103) = .24, p = .02$. There was also a significant positive correlation between Oral Control and Parental Criticism, $r(103) = .35, p = .01$. All of these positive correlations were expected. However, contrary to expectations, when looking at the link between Sexual Attractiveness and Parental Expectations, there was a significant positive correlation, $r(103) = .20, p = .04$. As hypothesized, a significant negative correlation was found between Physical Condition (Women) and Parental Criticism, $r(103) = -.24, p = .01$. Contrary to the hypothesis, there was a significant positive correlation between Physical Attractiveness and Parental Expectations, $r(103) = .20, p = .05$. Finally, as expected, there was a significant negative correlation between Upper Body Strength and Parental Criticism, $r(103) = -.24, p = .02$ (See Table 5a).

Significant results were found for both women and men when the same correlations were run. For women, a significant positive correlation was found between the EAT and Parental Criticism, $r(63) = .26, p = .04$. A significant positive correlation was also found between Oral Control and Parental Criticism, $r(63) = .31, p = .01$. There was a significant negative correlation between Physical Condition (Women) and Parental Criticism, $r(63) = -.31, p = .02$ (See Table 5b). All of these correlations were expected. For men, as expected, a significant positive correlation was found between the EAT and Parental Criticism, $r(39) = .51, p = .01$. Also as expected, there was a significant positive correlation between Dieting and Parental Criticism, $r(39) = .41, p = .01$. A significant positive correlation was also found between Oral Control and Parental Criticism, as expected, $r(39) = .46, p = .01$. Finally, contrary to expectations, the results

of a correlation between Physical Attractiveness and Parental Expectations found a significant positive link, $r(39) = .32, p = .05$ (See Table 5c).

Discussion

This study was conducted in order to examining the following research questions:

1. Is feedback received from coaches associated with socially prescribed perfectionism in athletes? If so, do those two variables interact to lead to disordered eating?
2. Does pre-existing self-oriented perfectionism influence the type of feedback that an athlete expects from a coach?
3. Is there a correlation between unmet feedback expectations and eating disorder symptoms?

These questions were important to examine in order to learn about the associations between coaching feedback, disordered eating, and perfectionist tendencies in athletes. While clinical eating disorders have been examined in hundreds of studies, subclinical disordered eating has been understudied. It is important to research disordered eating because it still has the overt behaviors of a clinical eating disorder, although it lacks the amount and the severity of psychological disturbances of a clinical eating disorder. Disordered eating, while not as dangerous as a clinical eating disorder, can lead to negative consequences. In addition, it is important to study disordered eating in an athletic context because athletes may have disordered eating behaviors not only to lose weight and to obtain the perfect body, but also because they believe it will improve their performance (Beals, 2004).

It has been well-established in the research that perfectionism is associated with eating disorders (Sherry, Hewitt, Besser, McGee, & Flett, 2004; Hewitt, Flett, & Ediger, 1995; Hopkinson & Lock, 2004). For this reason, it was an aim of the current study to examine the connection between coaching feedback and perfectionism in order to indirectly study the link

between feedback and disordered eating. The association between coaching feedback and perfectionism had not been studied in the literature, therefore, the current study attempted to partial fill this gap. It has been found that harsh and highly critical parental feedback is related to maladaptive, or socially prescribed perfectionism (Kawamura, Frost, & Harmatz, 2002; Enns, Cox, & Clara, 2002; Rice, Lopez, & Vergara, 2005). It was important to examine whether a parallel between parental feedback and coaching feedback could be made in this domain.

Finally, the research questions above were important to examine in order to look at the direct link between coaching feedback and disordered eating. If an athlete was not receiving the type and amount of feedback that s/he desired from a coach, it is important to know if this unmet feedback is linked with disordered eating. The results for this study could give important information to coaches directing them how to establish a healthier athletic environment for their athletes in terms of the type and amount of feedback they give.

Hypothesis #1 stated that feedback from coaches that is interpreted by athletes as harsh, ego-involved, or highly critical will be positively correlated with socially prescribed perfectionism in those athletes. In the current study, I tried to draw a parallel between harsh parenting and parental criticism and coaching feedback that was seen as harsh, ego-involved, or highly critical by the athletes. There was little data to support this prediction or parallel. The lack of findings does not give support to the notion that there is a parallel between parental feedback and coaching feedback. Kawamura, Frost, and Harmatz (2002) and Enns, Cox, and Clara (2002) found that the perception of having authoritarian and harsh parents was related to higher levels of maladaptive, or socially prescribed perfectionism. Rice, Lopez, and Vergara (2005) found that maladaptive perfectionism was strongly linked with high levels of parental criticism.

There are a number of potential issues that may have resulted in the lack of significant findings for this hypothesis. First of all, the perception of having authoritarian and harsh parents

as well as receiving high levels of parental criticism goes beyond feedback. Perhaps if athletes rated their perceptions of their coaches, either authoritarian or not, and the level of criticism they believed they received from their coaches, a closer parallel would have been discovered between parents and coaches.

In the current study, Parental Criticism and Parental Expectations, subscales of the MPS, were used as measures of socially prescribed perfectionism. There are two problems with this aspect of the study. As mentioned above, Rice et al. (2005) found that maladaptive, or socially prescribed perfectionism was strongly linked with high levels of parental criticism, not that parental criticism was a way to measure socially prescribed perfectionism. Frost (1990) did not conclude that Parental Expectations and Parental Criticism were the two subscales that comprised socially prescribed perfectionism. In fact, in the study done by Rice et al. (2005) the correlations between Parental Expectations, Parental Criticism, and socially prescribed perfectionism were not very strong. In future studies, it would benefit the researchers to use the MPS by Hewitt and Flett (1991) in order to measure socially prescribed perfectionism because they designed their study looking specifically at socially prescribed, self-oriented, and other-oriented perfectionism.

Another potential reason why hypothesis one was not supported is that typically, parents spend much more time with their children than coaches spend with their athletes. A link between harsh parenting and socially-prescribed perfectionism may only be seen after extensive interaction. While coaches do spend many hours with their athletes, especially at the collegiate level, parents are with their children for the first 18 years of their lives. Further, the sample of athletes was from a Division III university which has different regulations than Division I or Division II schools. There are rules in Division III limiting the number of hours of practice that teams can have a day, the number of practices that teams can have in a week, as well as the

number of weeks the team can practice during the year. This limits the amount of time that coaches can spend with their athletes. It would be interesting to conduct research in this domain at a Division I school in which the coaches and athletes spend much more time together.

Another potential reason that the hypothesis was not supported could be because the feedback scales did not measure what I intended them to measure. The feedback scales were author-generated and had never before been tested or used in research. One of the variables was feedback from coaches that was interpreted by athletes as harsh, ego-involved, or highly critical. It is likely that while the negative feedback items may have been unpleasant feedback that athletes did not always enjoy receiving, such as being ignored, being yelled at, or being punished, they were not perceived as harsh, ego-involved, or highly critical. Feedback that was directed at personal flaws, feedback that emphasized competing with teammates to win playing time, or feedback that was constantly negative with no positive feedback may have been viewed to be harsher, more ego-involved, or more highly critical than the feedback types that were used in the current study. In future research, it will be important to test the negative feedback items to see how they correlate with harsh, ego-involved, or highly critical feedback. It may also be important to look at different situations in which feedback might be used. For example, there may be one situation that an athlete is punished and feels as though that type of feedback was harsh, but there may be another situation that the same athlete is punished but does not see it as harsh because it was part of the drill or the athlete messed up and felt as though she deserved the punishment. In one case, the feedback would be seen as negative, and in the other case the feedback would be seen as a necessary part of improvement. A way to test this would be to give athletes a specific athletic situation and ask them to what extent their coaches use certain types of feedback and to what extent they desire certain types of feedback.

Hypothesis #2 states that athletes with higher levels of pre-existing self-oriented perfectionism will expect harsher and more critical feedback from coaches than athletes that have lower levels of pre-existing self-oriented perfectionism because they will be harsher and more critical of themselves. While there were some significant results that were found for the second hypothesis, these significant results went against the prediction. The negative correlations that were found between Negative Feedback Expected and subscales of the MPS that represented self-oriented perfectionism suggest that as levels of self-oriented perfectionism increase, levels of negative feedback expected decrease. In addition to these initial results, when looking at correlations for each gender, women showed several correlations that implied that as their levels of self-oriented perfectionism increased, their levels of negative feedback that they expected decreased. There were no significant correlations found for men on the same dimensions.

The prediction for hypothesis two was based partially on the research that showed that children may develop self-oriented perfectionism in a household with harsh parents because they internalize the harsh feedback and become harsh on themselves (Soenens et al., 2005). Therefore, it was hypothesized that if athletes have already internalized harsh feedback on themselves, then expecting harsh feedback from others is the next step and is simply what fits with their self-oriented perfectionism.

There are a couple of reasons why these results may have been found. First, the reasoning in the hypothesis may be incorrect. It was predicted that self-oriented athletes would expect harsh feedback because they are harsh on themselves, but this may not be true. As Stirling and Kerr (2006) stated, self-oriented perfectionism occurs when an individual sets unrealistically high goals for oneself. It does not necessarily state that that individual is hard on oneself. Are the self-oriented athletes in this study hard on themselves? It is unclear whether the athletes do not expect harsh feedback because they are not hard on themselves, or if they are hard on themselves

but do not expect harsh feedback from their coaches for another reason. One of these potential reasons may be that athletes who have high levels of self-oriented perfectionism believe that they exceed other's expectations because they have very high standards for themselves. Therefore, they may not expect negative feedback from their coaches because they believe that they are already achieving at a level of perfection. It would be interesting to investigate these matters further in future research.

Another reason for these results may be due to the way self-oriented perfectionism was measured. Similarly to socially prescribed perfectionism in the first hypothesis, self-oriented perfectionism was measured by subscales of the MPS that are not necessarily highly associated with the self-oriented perfectionism that Hewitt and Flett (1991) conceptualized. The four subscales of the MPS that I used to measure self-oriented perfectionism, Concern Over Mistakes, Personal Standards, Doubts About Actions, and Organization, only had positive correlations with self-oriented perfectionism of $r=.55$, $r=.69$, $r=.22$, and $r=.34$, respectively. If self-oriented perfectionism is measured correctly in the future, it is possible that results could show support for the hypothesis.

Interestingly, there were several negative correlations found between self-oriented perfectionism measures and Expected Negative Feedback for females, but none for males. This shows that for female athletes, as self-oriented perfectionism increases, the level of expected negative feedback decreases. It is possible that significant correlations were found for females and not for males because, perhaps, females are more sensitive to negative feedback than are males. There may have been no significant correlations for males in this hypothesis because males may expect a variety of feedback from coaches regardless of their levels of self-oriented perfectionism. This matter should be researched further in future studies.

Hypothesis #3 stated that unmet feedback expectations will be positively correlated with disordered eating behaviors. It was reasoned that because one of the goals sought through disordered eating for athletes is improved performance (Beals, 2004), then if athletes were not receiving the types of feedback that they felt they needed to succeed, they would resort to other measures to reach higher performance, namely disordered eating. There was only one small correlation to support this notion.

The small, negative correlation between Positive Academic Feedback Difference and Overall BES shows that as unmet positive academic feedback increases, body esteem scores decrease. The problem with this result is that it does not reveal if the feedback difference score was because the athlete felt like s/he was getting more positive feedback than s/he wanted, or if s/he was not getting enough positive academic feedback, it simply tells us that there was unmet feedback. In the future, researchers should not take the absolute values of the feedback difference scores so that it can be identified if the athletes felt like there was too much or too little positive or negative feedback.

Overall, one significant correlation does not give ample support to the hypothesis. It is possible that results were not found for this hypothesis because if athletes are not getting the feedback they think they need to perform at a higher level, they may turn to other sources to meet their expectations, such as teammates, friends, or parents.

Hypothesis #4 stated that socially prescribed perfectionism will mediate the relation between harsh, ego-involved, or highly critical feedback and disordered eating behaviors. However, only the link between disordered eating and socially prescribed perfectionism was examined because the results from hypothesis one made it clear that this study did not show a link between socially prescribed perfectionism and negative feedback received from coaches. Some of the results of the current study showed support for previous findings that disordered

eating is positively correlated with socially prescribed perfectionism (Sherry, Hewitt, Besser, McGee, & Flett, 2004; Hewitt, Flett, & Ediger, 1995; Hopkinson & Lock, 2004). However, some of the results of the current study contradicted previous studies.

When looking at Parental Criticism as a measure of socially prescribed perfectionism, its positive correlations with the EAT show that, as expected, as negative eating attitudes increased, parental criticism increased. Also as expected, as parental criticism increased, body esteem decreased. However, when looking at Parental Expectations as a measure of socially prescribed perfectionism, the results varied. When parental expectations were compared to negative eating attitudes, the link showed that as negative eating attitudes increased, parental expectations also increased, as expected. In contrary to previous research, as parental expectations increased, body esteem increased.

These unexpected results for parental expectations and body esteem may have occurred because, as mentioned above, parental expectations may not be a reliable measure of socially prescribed perfectionism and therefore should not have been used. Or, it is possible that parental expectations can be seen as a positive aspect of a child-parent relationship in some families and therefore, does not measure maladaptive, or socially prescribed perfectionism. Since eating attitudes and body esteem are two completely separate aspects of disordered eating symptoms, as well as parental criticism and parental expectations being different aspects of socially prescribed perfectionism, it is possible that, as the significant correlations show, these results actually reflect the fact that one part of socially prescribed perfectionism, parental expectations, is negatively related to eating attitudes but positively related to body esteem.. It would be interesting to research this matter further in future studies.

When looking at hypothesis four in terms of males and females, there were significant positive correlations found for both genders. In general, the correlations for females showed that

as socially prescribed perfectionism increased, disordered eating symptoms increased. For males, as Parental Criticism increased, disordered eating symptoms also increased, but as Parental Expectations increased, disordered eating symptoms decreased. It is important to note that when looking at just Parental Criticism, the positive correlations between Parental Criticism and disordered eating behaviors were higher for males than for females. This does not say that males have more negative eating attitudes than females, it simply states that for males who have negative eating attitudes, that they are more strongly linked with Parental Criticism than females. Perhaps males internalize parental criticism more so than females which leads them to have stronger negative eating attitudes if the parental criticism is present. Looking at the other direction of the correlation, perhaps if males have negative eating attitudes, it leads to more parental criticism than it would for females because males are not supposed to have negative eating attitudes by society's standards. While parents and parental criticism were not factors of interest in the current study other than the fact that parental criticism may be a measure of socially prescribed perfectionism, these results are interesting and should be examined in future research.

General Discussion

Some of the data found significant results while some found non-significant results. For the results that were significant, it is important to try to replicate these findings in the future. For the results that were not significant, it is hard to say if there really is little or no relations between these variables, or if the study was not designed in a way that could properly measure the relations between the variables. As mentioned, the feedback scales were author-generated and, therefore, may not have measured feedback in the intended way. Also, the concepts of socially prescribed and self-oriented perfectionism should be measured in a more reliable way in future research.

Overall, according to the athletes at Illinois Wesleyan, coaches did not seem to give high amounts of negative feedback and athletes did not seem to have high levels of disordered eating. The lack of variety in amounts of negative feedback and disordered eating symptoms made some of the hypotheses hard to test. In addition, coaches seemed to reasonably meet their athletes' expectations for feedback. The small amount of unmet feedback also made some of the hypotheses hard to test. It would be interesting to repeat the current study at a Division I school where there is likely to be more varied levels of disordered eating and negative feedback as well as potentially more unmet feedback.

Despite the lack of findings of some of the results in the current study, it is very important to continue to research the effects that coaching feedback has on athletes. Coaches and athletes will continue to interact with each other for many hours each week, so it is essential that relations between disordered eating and feedback be fully investigated. If there is in fact a relationship between disordered eating and types of feedback, whether it includes perfectionism or not, coaches and athletes need to be informed of these relations. In addition to disordered eating behaviors being unhealthy and potentially dangerous to athletes, many full blown clinical eating disorders emerge from disordered eating symptoms. The athletic context brings many different factors to the issue of disordered eating. If more information can be found about the relation between coaching feedback and disordered eating, coaches can alter their programs to keep their athletes' health in mind, so there will be one less factor that is unknowingly adding to disordered eating behaviors in athletes.

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Table 1
Means, Standard Deviations, and Reliability of Scales and Subscales

Scales and Subscales	Mean	SD ^a	Reliability
EAT (1-6 Scale)	2.39	.57	.84
EAT-Dieting	2.55	.79	.88
EAT-Oral Control	2.07	.49	.56
BES (1-5 Scale)	3.58	.51	.91
BES-Sexual Attractiveness	3.58	.44	.77
BES-Weight Concern	3.35	.78	.88
BES-Physical Condition- Women	3.84	.67	.84
BES-Physical Attractiveness	3.56	.48	.76
BES-Upper Body Strength	3.67	.65	.77
BES-Physical Condition- Men	3.61	.76	.91
MPS (1-5 Scale)	3.07	.47	.90
MPS-Concern Over Mistakes	2.70	.73	.87
MPS-Personal Standards	3.77	.62	.78
MPS-Parental Expectations	3.06	.65	.74
MPS-Parental Criticism	2.00	.78	.83
MPS-Doubts About Actions	2.66	.75	.74
MPS-Organization	3.78	.83	.94
Positive Feedback Received Academic (1-7 Scale)	3.09	1.20	.77
Positive Feedback Expected Academic	3.56	1.30	.79
Negative Feedback Received Academic	1.52	.70	.72
Negative Feedback Expected Academic	1.53	.70	.74
Positive Feedback Received Appearance and Health	3.79	.95	.70
Positive Feedback Expected Appearance and Health	3.17	1.09	.76
Negative Feedback Received Appearance and Health	2.15	1.06	.80
Negative Feedback Expected Appearance and Health	1.64	.78	.72
Positive Feedback Received Athletic	3.67	1.06	.62
Positive Feedback Expected Athletic	3.57	1.07	.62
Negative Feedback Received Athletic	2.42	1.04	.71
Negative Feedback Expected Athletic	2.00	.94	.72

Note. ^aStandard deviation.

Table 2. Significant Correlations for Hypothesis #1

	Parental Expectations	Negative Academic Feedback Received
Parental Expectations	1	.22
Negative Academic Feedback Received	.22	1

Table 3a. Significant Correlations for Hypothesis #2

	Personal Standards	Organization	Negative Appearance and Health Feedback Expected	Negative Academic Feedback Expected	Negative Athletic Feedback Expected
Personal Standards	1		-.26		
Organization		1	-.27	-.25	-.20
Negative Appearance and Health Feedback Expected	-.26	-.27	1		
Negative Academic Feedback Expected		-.25		1	
Negative Athletic Feedback Expected		-.20			1

Table 3b. Significant Correlations for Hypothesis #2 for Females

	Concern Over Mistakes	Personal Standards	Organization	Negative Appearance and Health Feedback Expected	Negative Academic Feedback Expected	Negative Athletic Feedback Expected
Concern Over Mistakes	1				-.31	-.30
Personal Standards		1		-.41	-.35	-.34
Organization			1	-.32	-.28	-.27
Negative Appearance and Health Feedback Expected		-.41	-.32	1		
Negative Academic Feedback Expected	-.31	-.35	-.28		1	
Negative Athletic Feedback Expected	-.30	-.34	-.27			1

Table 4. Significant Correlations for Hypothesis #3

	BES	Positive Academic Feedback Difference
BES	1	-.21
Positive Academic Feedback Difference	-.21	1

Table 5a. Significant Correlations for Hypothesis #4

	Parental Criticism	Parental Expectations	EAT	EAT-Dieting	EAT-Oral Control	BES-Sexual Attractiveness	BES-Physical Condition (Women)	BES-Physical Attractiveness	BES-Upper Body Strength
Parental Criticism	1		.34	.26	.35		-.24		-.24
Parental Expectations		1			.24	.20		.20	
EAT	.34		1						
EAT-Dieting	.26			1					
EAT-Oral Control	.35	.24			1				
BES-Sexual Attractiveness		.20				1			
BES-Physical Condition (Women)	-.24						1		
BES-Physical Attractiveness		.20						1	
BES-Upper Body Strength	-.24								1

Table 5b. Significant Correlations for Hypothesis #4 for Females

	EAT	EAT-Oral Control	BES-Physical Condition	Parental Criticism
EAT	1			.26
EAT-Oral Control		1		.31
BES-Physical Condition			1	-.31
Parental Criticism	.26	.31	-.31	1

Table 5c. Significant Correlations for Hypothesis #4 for Males

	EAT	EAT-Dieting	EAT-Oral Control	Parental Criticism	Parental Expectations	BES-Physical Attractiveness
EAT	1			.51		
EAT-Dieting		1		.41		
EAT-Oral Control			1	.46		
Parental Criticism	.51	.41	.46	1		
Parental Expectations					1	.32
BES-Physical Attractiveness					.32	1

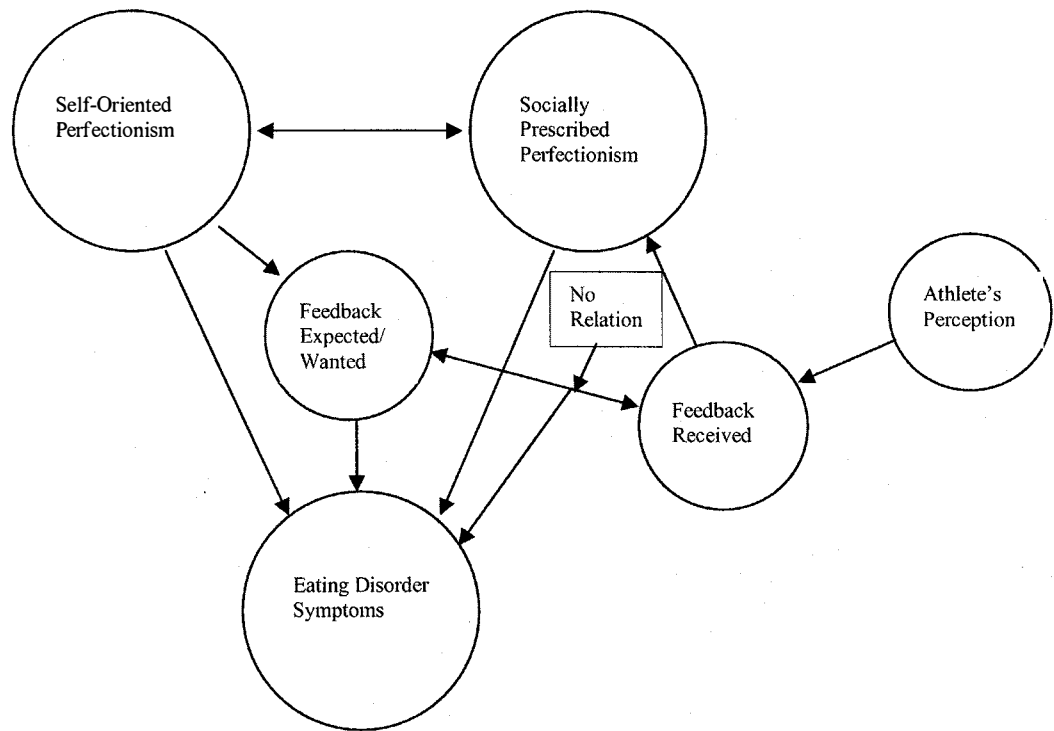


Figure 1. Proposed model of interactions between perfectionism, eating disorder symptoms, and coaches' feedback.

Appendix A

Athletes' Demographics

Please answer the following demographics items.

What is your gender? _____

What sport(s) do you participate in? _____

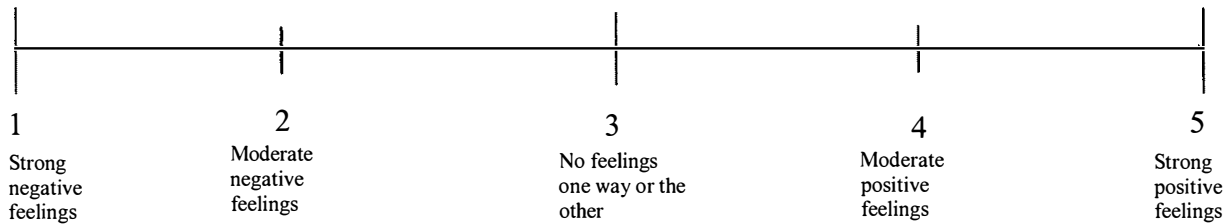
How many years have you participated in this sport at IWU including the current season? _____

How many years did you participate in this sport prior to IWU? _____

Appendix B

Body Esteem Scale

Listed here are a number of body parts and functions. Please read each item and indicate how you feel about this part or function of your own body using the following scale:



1. body scent	1	2	3	4	5
2. appetite	1	2	3	4	5
3. nose	1	2	3	4	5
4. physical stamina	1	2	3	4	5
5. reflexes	1	2	3	4	5
6. lips	1	2	3	4	5
7. muscular strength	1	2	3	4	5
8. waist	1	2	3	4	5
9. energy level	1	2	3	4	5
10. thighs	1	2	3	4	5
11. ears	1	2	3	4	5
12. biceps	1	2	3	4	5
13. chin	1	2	3	4	5
14. body build	1	2	3	4	5
15. physical condition	1	2	3	4	5
16. buttocks	1	2	3	4	5
17. agility	1	2	3	4	5
18. breasts	1	2	3	4	5
19. appearance of eyes	1	2	3	4	5
20. cheeks/cheekbones	1	2	3	4	5
21. hips	1	2	3	4	5
22. legs	1	2	3	4	5
23. figure of physique	1	2	3	4	5

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24. sex drive	1	2	3	4	5
25. sex organs	1	2	3	4	5
26. appearance of stomach	1	2	3	4	5
27. health	1	2	3	4	5
28. sex activities	1	2	3	4	5
29. body hair	1	2	3	4	5
30. physical condition	1	2	3	4	5
31. face	1	2	3	4	5
32. weight	1	2	3	4	5

Appendix C

Eating Attitudes Test

Please read each statement and circle the number that best applies to you using the following scale:

	1	2	3	4	5	6
	Never	Rarely	Sometimes	Often	Very often	Always
1. Engage in dieting behavior	1	2	3	4	5	6
2. Eat diet foods	1	2	3	4	5	6
3. Feel uncomfortable after eating sweets	1	2	3	4	5	6
4. Enjoy trying new rich foods	1	2	3	4	5	6
5. Avoid food with sugar in them	1	2	3	4	5	6
6. Particularly avoid foods with high carbohydrate content	1	2	3	4	5	6
7. Am preoccupied with a desire to be thinner	1	2	3	4	5	6
8. Like my stomach to be empty	1	2	3	4	5	6
9. Think about burning up calories when I exercise	1	2	3	4	5	6
10. Feel extremely guilty after eating	1	2	3	4	5	6
11. Am terrified about being overweight	1	2	3	4	5	6
12. Am preoccupied with the thought of having fat on my body	1	2	3	4	5	6
13. Aware of the calorie content of the foods that I eat	1	2	3	4	5	6
14. Cut my food into small pieces	1	2	3	4	5	6
15. Take longer than others to eat meals	1	2	3	4	5	6
16. Other people think that I am too thin	1	2	3	4	5	6

17. Feel that others would prefer if I ate more	1	2	3	4	5	6
18. Feel that others pressure me to eat	1	2	3	4	5	6
19. Avoid eating when I am hungry	1	2	3	4	5	6
20. Display self-control around food	1	2	3	4	5	6

Appendix D

Perfectionism Scale

Please select the option that best reflects your opinion, using the rating system below.

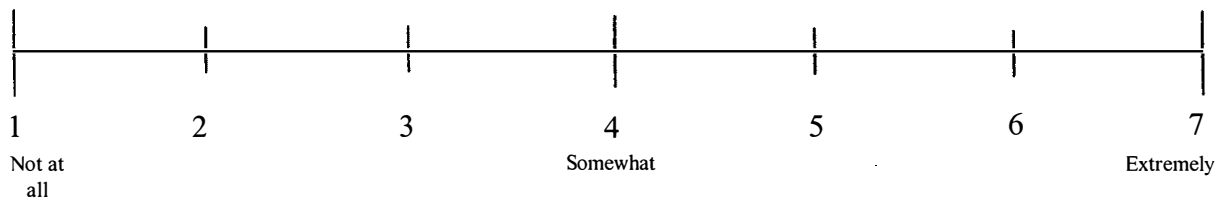
	1	2	3	4	5
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. My parents set very high standards for me	1	2	3	4	5
2. Organization is very important to me	1	2	3	4	5
3. As a child, I was punished for doing things less than perfect	1	2	3	4	5
4. If I do not set the highest standards for myself, I am likely to end up a second-rate person	1	2	3	4	5
5. My parents never tried to understand my mistakes	1	2	3	4	5
6. It is important to me that I be thoroughly competent in everything I do	1	2	3	4	5
7. I am a neat person	1	2	3	4	5
8. I try to be an organized person	1	2	3	4	5
9. If I fail at work/school, I am a failure as a person	1	2	3	4	5
10. I should be upset if I make a mistake	1	2	3	4	5
11. My parents wanted me to be the best at everything	1	2	3	4	5
12. I set higher goals for myself than most people	1	2	3	4	5
13. If someone does a task at work/school better than me, then I feel like I failed the whole task	1	2	3	4	5
14. If I fail partly, it is as bad as being a complete failure	1	2	3	4	5
15. Only outstanding performance is good enough in my family	1	2	3	4	5
16. I am very good at focusing my efforts on attaining a goal	1	2	3	4	5

17. Even when I do something very carefully, I often feel that it is not quite done right	1	2	3	4	5
18. I hate being less than the best at things	1	2	3	4	5
19. I have extremely high goals	1	2	3	4	5
20. My parents have expected excellence from me	1	2	3	4	5
21. People will probably think less of me if I make a mistake	1	2	3	4	5
22. I never felt like I could meet my parents' expectations	1	2	3	4	5
23. If I do not do as well as other people, it means I am an inferior human being	1	2	3	4	5
24. Other people seem to accept lower standards for themselves than I do	1	2	3	4	5
25. If I do not do well all the time, people will not respect me	1	2	3	4	5
26. My parents have always had higher expectations for my future than I have	1	2	3	4	5
27. I try to be a neat person	1	2	3	4	5
28. I usually have doubts about the simple everyday things that I do	1	2	3	4	5
29. Neatness is very important to me	1	2	3	4	5
30. I expect higher performance in my daily tasks than most people	1	2	3	4	5
31. I am an organized person	1	2	3	4	5
32. I tend to get behind in my work because I repeat things over and over	1	2	3	4	5
33. It takes me a long time to do something "right"	1	2	3	4	5
34. The fewer mistakes I make, the more people will like me	1	2	3	4	5
35. I never felt like I could meet my parents' standards	1	2	3	4	5

Appendix E

Athlete's perception of coaching feedback on appearance and health

Read the statement below and use the scale to decide to what extent your coach uses each type of feedback when s/he is addressing you



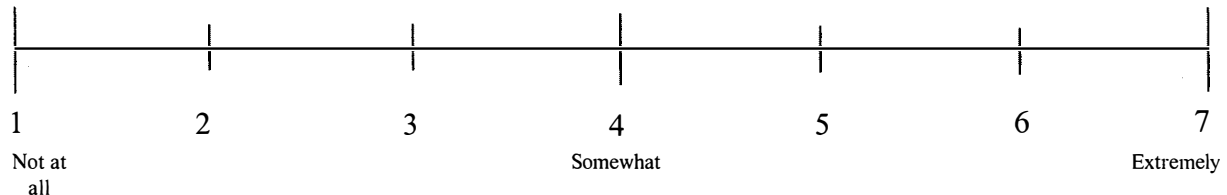
When my coach wants to provide feedback about appearance (body weight, body shape) or health (eating, sleeping, and staying in shape), to what extent does s/he:

1. Ignore you	1	2	3	4	5	6	7
2. Talk about flaws in front of others	1	2	3	4	5	6	7
3. Give constructive criticism	1	2	3	4	5	6	7
4. Asks you what needs to change	1	2	3	4	5	6	7
5. Yell/get angry/demand	1	2	3	4	5	6	7
6. Blame him/herself	1	2	3	4	5	6	7
7. Make threats	1	2	3	4	5	6	7
8. Try to be nice/understand/encourage	1	2	3	4	5	6	7
9. Promise rewards if performance increase	1	2	3	4	5	6	7
10. Emphasize the importance of winning	1	2	3	4	5	6	7
11. Punish	1	2	3	4	5	6	7
12. Change expectations	1	2	3	4	5	6	7

Appendix F

Athlete's expectations of coaching feedback on appearance and health

Read the statement below and use the scale to decide to what extent you want your coach to use each type of feedback when s/he is addressing you



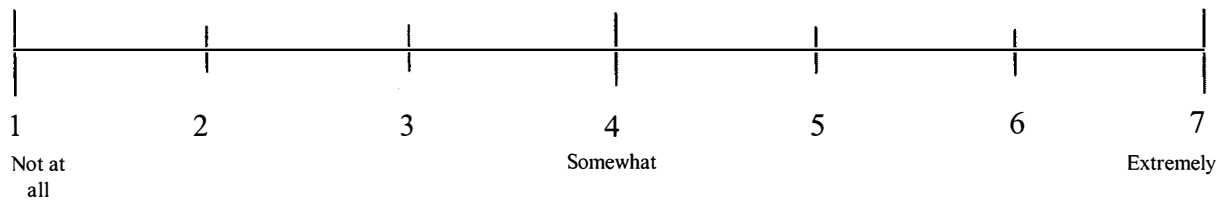
When my coach wants to provide feedback about appearance (body weight, body shape) or health (eating, sleeping, and staying in shape), to what extent do you want s/he to:

1. Ignore you	1	2	3	4	5	6	7
2. Talk about flaws in front of others	1	2	3	4	5	6	7
3. Give constructive criticism	1	2	3	4	5	6	7
4. Asks you what needs to change	1	2	3	4	5	6	7
5. Yell/get angry/demand	1	2	3	4	5	6	7
6. Blame him/herself	1	2	3	4	5	6	7
7. Make threats	1	2	3	4	5	6	7
8. Try to be nice/understand/encourage	1	2	3	4	5	6	7
9. Promise rewards if performance increase	1	2	3	4	5	6	7
10. Emphasize the importance of winning	1	2	3	4	5	6	7
11. Punish	1	2	3	4	5	6	7
12. Change expectations	1	2	3	4	5	6	7

Appendix G

Athlete's perception of coaching feedback on academic performance

Read the statement below and use the scale to decide to what extent your coach uses each type of feedback when s/he is addressing you



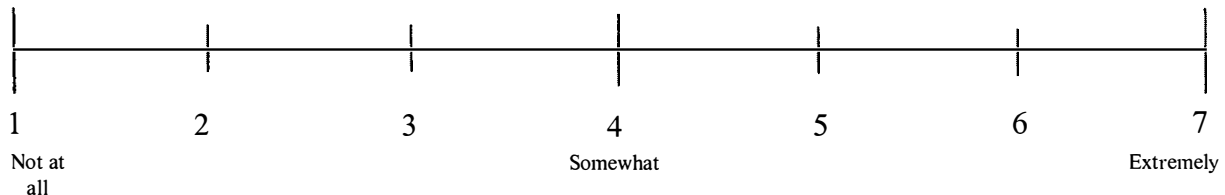
When my coach wants to provide feedback about academic performance, to what extent does s/he:

1. Ignore you	1	2	3	4	5	6	7
2. Talk about flaws in front of others	1	2	3	4	5	6	7
3. Give constructive criticism	1	2	3	4	5	6	7
4. Asks you what needs to change	1	2	3	4	5	6	7
5. Yell/get angry/demand	1	2	3	4	5	6	7
6. Blame him/herself	1	2	3	4	5	6	7
7. Make threats	1	2	3	4	5	6	7
8. Try to be nice/understand/encourage	1	2	3	4	5	6	7
9. Promise rewards if performance increase	1	2	3	4	5	6	7
10. Emphasize the importance of winning	1	2	3	4	5	6	7
11. Punish	1	2	3	4	5	6	7
12. Change expectations	1	2	3	4	5	6	7

Appendix H

Athlete's expectations of coaching feedback on academic performance

Read the statement below and use the scale to decide to what extent you want your coach to use each type of feedback when s/he is addressing you



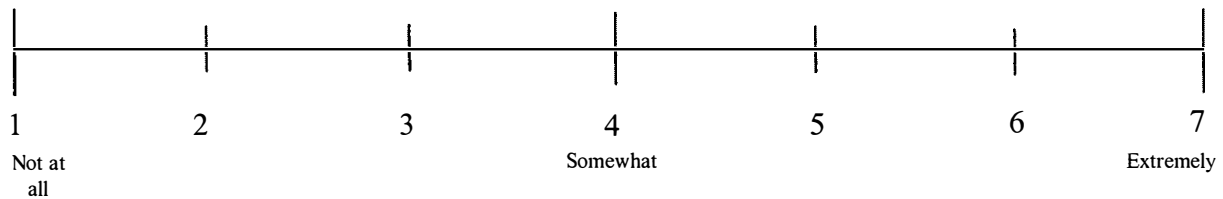
When my coach wants to provide feedback about academic performance, to what extent do you want s/he to:

1. Ignore you	1	2	3	4	5	6	7
2. Talk about flaws in front of others	1	2	3	4	5	6	7
3. Give constructive criticism	1	2	3	4	5	6	7
4. Asks you what needs to change	1	2	3	4	5	6	7
5. Yell/get angry/demand	1	2	3	4	5	6	7
6. Blame him/herself	1	2	3	4	5	6	7
7. Make threats	1	2	3	4	5	6	7
8. Try to be nice/understand/encourage	1	2	3	4	5	6	7
9. Promise rewards if performance increase	1	2	3	4	5	6	7
10. Emphasize the importance of winning	1	2	3	4	5	6	7
11. Punish	1	2	3	4	5	6	7
12. Change expectations	1	2	3	4	5	6	7

Appendix I

Athlete's perception of coaching feedback on athletic performance

Read the statement below and use the scale to decide to what extent your coach uses each type of feedback when s/he is addressing you



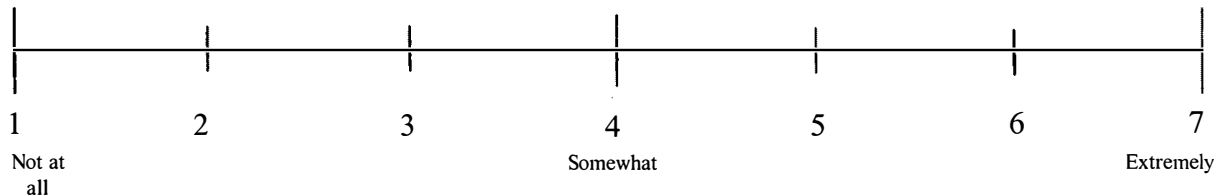
When my coach wants to provide feedback about athletic performance, to what extent does s/he:

1. Ignore you	1	2	3	4	5	6	7
2. Talk about flaws in front of others	1	2	3	4	5	6	7
3. Give constructive criticism	1	2	3	4	5	6	7
4. Asks you what needs to change	1	2	3	4	5	6	7
5. Yell/get angry/demand	1	2	3	4	5	6	7
6. Blame him/herself	1	2	3	4	5	6	7
7. Make threats	1	2	3	4	5	6	7
8. Try to be nice/understand/encourage	1	2	3	4	5	6	7
9. Promise rewards if performance increase	1	2	3	4	5	6	7
10. Emphasize the importance of winning	1	2	3	4	5	6	7
11. Punish	1	2	3	4	5	6	7
12. Change expectations	1	2	3	4	5	6	7

Appendix J

Athlete's expectations of coaching feedback on athletic performance

Read the statement below and use the scale to decide to what extent you want your coach to use each type of feedback when s/he is addressing you



When my coach wants to provide feedback about athletic performance, to what extent do you want s/he to:

1. Ignore you	1	2	3	4	5	6	7
2. Talk about flaws in front of others	1	2	3	4	5	6	7
3. Give constructive criticism	1	2	3	4	5	6	7
4. Asks you what needs to change	1	2	3	4	5	6	7
5. Yell/get angry/demand	1	2	3	4	5	6	7
6. Blame him/herself	1	2	3	4	5	6	7
7. Make threats	1	2	3	4	5	6	7
8. Try to be nice/understand/encourage	1	2	3	4	5	6	7
9. Promise rewards if performance increase	1	2	3	4	5	6	7
10. Emphasize the importance of winning	1	2	3	4	5	6	7
11. Punish	1	2	3	4	5	6	7
12. Change expectations	1	2	3	4	5	6	7