

The Relationship Between Coaching Behaviours and Sport Anxiety in Athletes

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Previous research has identified the relationship between athlete sport anxiety and various sport outcomes (e.g., performance and dropout). For the majority of athletes involved in sport, the coach is an influential element of the competitive experience. Two hundred and twenty-eight athletes from 15 sports, completed the Sport Anxiety Scale (SAS) and the Coaching Behavior Scale for Sport (CBS-S). The predictive ability of athletes' perceived frequency of seven coaching behaviours (physical training, mental preparation, goal setting, technical skills, competition strategies, personal rapport and negative personal rapport) on four forms of sport anxiety (total anxiety, somatic anxiety, concentration disruption and worry) was examined. Results indicate that negative personal rapport was a significant predictor of all measured forms of sport anxiety while competition strategies was a significant predictor for total anxiety, concentration disruption, and worry. Other behaviours were not significant. The findings suggest that negative rapport between coach and athlete is an important contributor to athlete anxiety. In addition, behaviours that the coach demonstrates relative to competition can be influential in reducing athlete anxiety.

Introduction

Each year, millions of North Americans participate in competitive sport activities. For many athletes, these activities can be filled with anxiety and fear manifested in many ways including: fear of failure, fear of societal consequences, and worry about not living up to the expectations of adults (Gould, Horn & Spreemann, 1983; Gould, & Weinberg, 1985; Lewthwaite & Scanlan, 1989; Scanlan & Lewthwaite, 1984; Scanlan & Passer, 1978). Smith and Smoll (1990) indicated that enjoyment, performance, interactions with teammates, coaches, and officials, and disposition to injury are each influenced by different types of anxiety. Further, research (e.g. Gould, Petlichkoff, Simons & Vevera, 1987; Hafvari & Gjesme, 1995; Hume, Hopkins, Robinson, Robinson, & Hollings, 1993; Kenow, & Williams, 1992; Terry & Slade, 1995) indicated that anxiety has a negative effect on these sport outcomes.

Smith, Smoll and Wiechman (1998) presented a conceptual model of sport performance anxiety. A significant component in their model is the athlete's cognitive appraisal of demands, resources, consequences, and personal meaning of consequences. A negative appraisal of these variables may lead the athlete to feel unprepared or ill equipped to handle the demands of the situation and fearful of the consequences a negative performance could mean. These feelings lead to an

increase in athlete anxiety. For instance, a lack of attention to activities necessary for successful competition, such as forms of mental preparation, may leave the athlete feeling less than completely prepared and thereby increase anxiety.

For the majority of athletes in sport, a coach is involved in the training and conditioning process. Whether sport participation takes the form of a weekend hockey game or day long intensive training session, the role of the coach is one that has a profound impact on the life of the athlete. In addition, the coach is an important influence on anxiety in athletes (Gould, Horn, & Spreeman, 1983; Gould & Weinberg, 1985; Lewthwaite & Scanlan, 1989).

Anxiety in Sport

Spielberger (1966) postulated that anxiety can take two forms: state anxiety or trait anxiety. State anxiety refers to an emotional state consisting of fear or apprehension while trait anxiety refers to a predisposition to perceive situations as potentially threatening and respond with manifestations of state anxiety. State anxiety is "characterised by subjective, consciously perceived feelings of apprehension and tension, accompanied by or associated with activation or arousal of the autonomic nervous system" (p.17) while trait anxiety is an "acquired behavioral disposition that predisposes an individual to perceive a wide range of objectively nondangerous circumstances as threatening and to respond to these with state anxiety reactions disproportionate in intensity to the magnitude of the objective danger" (p.17). Athletes who are predisposed to higher levels of trait anxiety will perceive sport competition environments as being more threatening than they may actually be and respond with greater state anxiety responses.

Trait anxiety in sport can be manifested in many ways. Morris, Davis, and Hutchings (1981) and Sarason (1984) indicated the existence of two distinct dimensions of trait anxiety; cognitive anxiety and somatic anxiety. Cognitive anxiety is predominantly psychological in nature and is characterised by feelings of worry about outcomes and the use of negative mental imagery. Conversely, somatic anxiety is physiological in nature and includes increases in heart rate and increased perspiration. An excellent review of the relationship among forms of anxiety has recently been published (Smith, Smoll, & Wiechman, 1998).

The manifestations of anxiety have been shown to have numerous negative effects on performance. For example, Yoo (1996) indicated that anxiety is an influential variable in reducing cue-utilization and attentional processes of motor-task performance. These findings are supported by Lee, Kim, Yang, and Chung (1992) and Graham-Jones and Cale (1989) who also found that forms of anxiety reduced elements of motor performance (i.e., reaction time and percepto-motor speed respectively). Anxiety in athletes may also affect the relationships between athlete and coach. Kenow and Williams (1992) indicated that anxiety in athletes influences their evaluation of coaching behaviours. Athletes who were more anxious and less confident were found to evaluate coaching behaviours more negatively. The above studies clearly indicate the relationships between anxiety and both sport performance and athlete perceptions.

Coach's Impact on Athlete Anxiety Levels

Previous research examining the coach's influence on anxiety levels in athletes indicated that perceptions of what their coach would do or say was a significant predictor of worry and anxiety in wrestlers (Gould, Horn, & Spreemann, 1983;

Gould & Weinberg, 1985; Lewthwaite & Scanlan, 1989; Scanlan & Lewthwaite, 1984) and soccer players (Scanlan & Passer, 1978). In addition, Smith, Smoll and Barnett (1995) indicated that coaching behaviours that fostered a positive coach-athlete relationship, reduced evaluation apprehension, and enhanced team cohesion significantly reduced sport anxiety in youth baseball players.

While these studies clearly implicate the coach as an important influence on athlete anxiety (and vice versa), a less researched area is the influence of specific coaching behaviours on anxiety levels. For example, a coach who uses "negative behaviours" such as threats, or abusive comments would be expected to create greater anxiety in his/her athletes than a coach who used more positive coaching behaviours (e.g., positive reinforcement, concern).

The specific behaviours of the coach are expected to influence the cognitive appraisal done by the athlete which will in turn affect the amount of anxiety (Smith et al, 1998). For example, demonstration by the coach of behaviours that the athlete feels are useful and necessary would be expected to reduce competition anxiety. This may be because the athlete feels more prepared due to the coach behaving in a way the athlete deems as being appropriate and useful (i.e., increased resources and decreased situational demands relative to preparation). Conversely, if the coach performs in ways that the athlete feels are detrimental to his/her performance, sport anxiety would be expected to rise (i.e., decreased resources and increased situational demands relative to preparation).

The interpersonal relationship between athlete and coach may also influence the degree of sport anxiety an athlete feels. Smith et al.'s (1998) model indicates that the consequences and perceived meaning of these consequences are important factors in understanding athlete anxiety. The perceived and actual meaning of consequences may be influenced by the interpersonal behaviours demonstrated by the coach. For example, a coach who uses insulting or abusive behaviours when dealing with his/her athletes would be expected to generate greater anxiety than the coach who did not use these behaviours due to fear of negative performance consequences. Use of "negative coaching behaviours" (behaviours which detract from the sport experience) may play an important role in the athlete's perception of the actual consequences of his/her sport performance.

As indicated above, the behaviours of the coach and the interpersonal relationship between coach and athlete is expected to influence the cognitive appraisal of the situation by the athlete. Determining that a situation is threatening through the perceived consequences of a negative performance or through the perceived inability to meet task demands may generate high levels of athlete anxiety.

Methods

Sample

The convenience sample for the current study included 228 athletes from 15 sports (Table 1). The athletes competed in varsity or regional levels of competition in their respective sports. The mean age for the athletes was 18.3 years ($SD=3.8$) and the sample was 46% female and 54% male. The athletes had spent an average of 11 years ($SD=4.6$) participating in sport and 7.2 years ($SD=4.5$) participating in their current sport. Further, the athletes had spent an average of 2.2 years ($SD=2.0$) with their current coach.

Sport	N
Athletics	5
Badminton	5
Baseball	11
Basketball	10
Figure Skating	5
Football	6
Ice Hockey	8
Rowing	28
Rugby	16
Softball	4
Soccer	34
Swimming	50
Triathlon	6
Volleyball	28
Waterpolo	12

Table 1: Sports included in sample.

Instruments

The Coaching Behavior Scale for Sport (CBS-S; Côté, Yardley, Hay, Sedgwick & Baker, 1999) is a 44 item scale and examines the frequency of seven coaching behaviours; physical training and planning, mental preparation, goal setting, competition strategies, technical skills, personal rapport, and negative personal rapport. The CBS-S was created through qualitative research with coaches and athletes and presents a grounded instrument that may better examine coaching behaviours than other available scales (Côté, et al, 1999). The factor structure and reliabilities for the CBS-S is reported in Côté, et al.'s (1999) article. Although the 'competition strategies' sub-scale was reported as being problematic during the factor analyses reported by Côté, et al. (1999), the scale was still included in this study because behaviour related to competition is a critical element of the Coaching Model from which the CBS-S is based (Côté, 1998). The seven behaviours addressed in the CBS-S are outlined below.

Physical Training and Planning

Eight items examining behaviours designed to enhance the physiological conditioning of the athlete. Specific behaviours included having a yearly training plan and providing structured workouts.

Goal Setting

Six items examining behaviours that aid the athlete in setting and achieving personal goals for sport. Specific behaviours included setting long and short-term goals.

Mental Preparation

Five items examining behaviours designed to help athletes mentally prepare for their sport. Specific behaviours included providing advice on staying positive and focused.

Technical Skills

Eight items examining behaviours that develop the technical aspects of the athlete's sport. Specific behaviours included the use of positive reinforcement and feedback.

Personal Rapport

Seven items examining behaviours that develop the positive relationship between athlete and coach. Specific behaviours included developing a sense of trust and confidentiality.

Negative Personal Rapport

Three items examining behaviours that develop a negative relationship between athlete and coach. Specific behaviours included yelling when angry and using fear and intimidation.

Competition Strategies

Seven items examining behaviours designed to prepare the athlete for competition. Specific behaviours included ensuring needs are met at competition site and maintaining consistency during competitions.

Sport Anxiety

Sport anxiety was measured using the Sport Anxiety Scale (SAS; Smith, Smoll, & Schultz, 1990). The SAS is a 22 item, multi-dimensional scale measuring trait anxiety in sport situations. It contains a sub-scale measuring somatic anxiety, and two sub-scales measuring forms of cognitive anxiety; worry, and concentration disruption. These sub-scales can also be summed to provide a measure of total trait anxiety. Factor analyses and reliabilities for the SAS have been reported previously (Smith, Smoll & Shultz, 1990).

Studies (e.g., Sarason, 1984; Gould, Petlichkoff, Simons, & Vevera, 1987; Burton, 1988) indicated that different situations created different forms of

Variable	M	(SD)
<i>Coaching Behaviour Variables</i>		
1. Mental Preparation	4.9	(1.6)
2. Technical Skills	5.7	(1.2)
3. Competition Strategies	5.5	(1.1)
4. Goal Setting	4.6	(1.7)
5. Physical Training	5.2	(1.3)
6. Personal Rapport	5.1	(1.5)
7. Negative Personal Rapport	2.1	(1.2)
<i>Anxiety Variables</i>		
8. Total Comp Anxiety	39.6	(14.4)
9. Somatic Anxiety	17.1	(6.2)
10. Worry	14.1	(4.9)
11. Concentration Disruption	8.4	(3.3)

Note: CBS-S variables were measured on a scale from 1 (not very often) to 7 (very often). A mean value across all items in the sub-scale was then computed. SAS variables were measured on a scale from 1 (not at all) to 4 (very much so). Values for each item were then summed to provide the values presented to the left.

Table 2: Means and standard deviations of study variables.

	1	2	3	4	5	6	7	8	9	10
<i>Coaching Behaviour Variables</i>										
1. Mental Preparation										
2. Technical Skills	.66**									
3. Competition Strategies	.76**	.74**								
4. Goal Setting	.75**	.59**	.69**							
5. Physical Training	.57**	.44**	.57**	.64**						
6. Personal Rapport	.56**	.44**	.58**	.50**	.45**					
7. Negative Personal Rapport	.14*	.20**	-.18**	-.01	.09	-.19**				
<i>Anxiety Variables</i>										
8. Total Comp Anxiety	-.05	-.09	-.11	.02	-.02	.03	.24**			
9. Somatic Anxiety	-.05	-.08	-.06	.01	.01	-.00	1.17**	.91**		
10. Worry	-.09	-.10	-.14*	-.05	-.06	-.05	.22**	.91**	.74**	
11. Concentration Disruption	-.00	-.07	-.11	.10	-.01	-.04	.26**	.78**	.54**	.62**

For all coefficients N=228, ***= p<.001, **=p.01, *p<.05, -=non-significant

Table 3: Inter-correlation of study variables.

anxiety. Using the Sport Anxiety Scale allows for the examination of cognitive and somatic forms of trait anxiety.

Analyses

Multiple regression analyses were used to examine the relationships among seven coaching behaviours and three forms of sport anxiety. Age, gender, and sport type were statistically controlled for in the first step of the regression procedure to remove their influence on the examined relationships.

Results

Mean and standard deviations for each of the study variables are presented in Table 2. Prior to the regression analyses, zero order correlations were examined to determine the relationship among predictor variables (Table 3). The majority of correlations among predictor variables were in the low to moderate range indicating a reasonable degree of discrimination among these variables. However, high correlations were found for mental preparation with goal setting and competition strategies. These correlations indicate a high degree of relation among

	Total Anxiety	Somatic Anxiety	Concentration Disruption	Worry
Mental Preparation	-	-	-	-
Goal Setting	-	-	-	-
Technical Skills	-	-	-	-
Competition Strategies	-.15*	-	-.17**	-.19**
Physical Training	-	-	-	-
Negative Personal Rapport	.30**	.20**	.33***	.28***
Personal Rapport	-	-	-	-

For all coefficients N=228, ***= p<.001, **=p.01, *p<.05, -=non-significant

Table 4: Significant regression coefficients for coaching behaviours and forms of anxiety.

these variables that may be due to the overlap across these behaviours (e.g., competition strategies and mental preparation both include items related to staying focused). While this correlation suggests strong association between these variables, a significant amount (>40%) of the variance remains unaccounted for.

A summary of the regression analyses is presented in Table 4. Results indicated that negative personal rapport was a significant positive predictor for each of the sport anxiety outcomes (total ($\beta=.30$, $p<.001$; somatic ($\beta=.20$, $p<.001$; concentration disruption ($\beta=.33$, $p<.001$; and worry ($\beta=.28$, $p<.001$). This finding indicates that as negative personal rapport behaviours increase so do all measured forms of sport anxiety.

Results also indicated coaching behaviours that involve competition strategies are significant, negative predictors for three of four sport anxiety measures (total ($\beta= -.15$, $p<.05$; concentration disruption ($\beta= -.17$, $p<.01$; worry ($\beta= -.19$, $p<.01$). This suggests that as competition strategies behaviours increased concentration disruption and worry decreased in athletes.

Mental preparation, goal setting, technical skills, physical training and personal rapport were not significant predictors of any form of sport anxiety. This finding indicates that the relationships among these behaviours and sport anxiety are not significant.

Discussion

The results of the regression analyses clearly indicate that certain coaching behaviours are better predictors of sport anxiety than others. This contrasts with Vealey, Armstrong, Comar, and Greenleaf (1998), who found that perceived coaching behaviours were not significant predictors of athlete anxiety. However, this apparent contradiction may be due to the different scales used to examine coaching behaviours in each study. Vealey et al. used the Coaching Behavior Inventory (Vealey, Chabot, Walter & Strait, 1996), which is a 20 item scale designed to examine five coaching behaviours. The CBS-S used in the present study contains more items and examined more behaviours. The CBS-S may present a more comprehensive illustration of coach-athlete relationships.

The strongest relationship found in the present study was between negative personal rapport behaviours and anxiety levels in athletes. For each of the anxiety outcomes (total anxiety, somatic anxiety, concentration disruption, and worry), negative personal rapport was a significant and positive predictor. This indicates that behaviours that have a negative influence on the personal rapport between coach and athlete are important in understanding the relationship between coach and athlete anxiety. This finding is significant in light of the study by d'Arripe-Longueville, Fournier, and Dubois (1998) who found that several of the behaviours classified as negative personal rapport behaviours are commonly used by coaches in sports such as judo.

This finding extends Smith, et al.'s (1998) model of sport anxiety to include the influence of specific coaching behaviours on the athlete's cognitive appraisal of the competitive situation. Athletes who report high negative personal rapport behaviours (e.g., feel intimidated and fearful of their coach) also report higher amounts of sport anxiety. This may be because a high negative personal rapport increases the perceived negative consequences of an unsuccessful performance or conversely, high perceived negative consequences increases negative personal rapport.

Behaviours by the coach that were focused around competition were also significant predictors of three of the four sport anxiety variables. Total anxiety, concentration disruption, and worry were all found to increase as competition strategies behaviours (e.g., having a consistent routine, showing confidence in the athlete) decreased. These results support postulations by Côté (1998) that the coach plays an important role in competition.

Closer examination of the beta weights reveals an interesting pattern among significant coaching behaviours and forms of sport anxiety. For both negative personal rapport and competition strategies, somatic anxiety achieved the weakest beta values (i.e., not significant for competition strategies and $-.15$ for negative personal rapport). This pattern strongly suggests that negative personal rapport behaviours and competition strategies behaviours are more influential in the relationships among forms of cognitive anxiety than for somatic anxiety. While the total anxiety measures are significant for both of the behaviours, these values may be inflated due to the influence of strong cognitive anxiety beta weights.

A curious finding is the lack of relationships for the other behaviours, particularly mental preparation behaviours. The zero order correlations indicate strong association between competition strategies and mental preparation yet mental preparation is not a significant predictor for any of the anxiety variables. A possible explanation for this may be that despite the significant correlation between mental preparation and competition strategies, the constructs may be theoretically different and therefore competition strategies play a greater role in predicting sport anxiety.

The practical applications of these results suggest that coaches should consider the impact that their behaviours have on anxiety levels in their athletes. Of particular importance is the effect of negative personal rapport behaviours. Clearly, if a negative personal rapport exists between coach and athlete, anxiety levels would be expected to increase.

Coaches should also consider the behaviours they demonstrate during competition. If a causal relationship between coaching behaviours and sport anxiety does exist, as suggested by Smith, Smoll, and Barnett (1995), then competition behaviours has been shown to influence both total and cognitive forms of anxiety. By fostering a sense of preparedness in athletes by increasing the frequency of these behaviours prior to and during competition, coaches can expect to decrease these forms of anxiety in their athletes.

The current study examined the bi-directional relationship between coaching behaviours and athlete sport anxiety. Smith, Smoll, and Barnett (1995) suggested a causal relationship between coaching behaviours and sport anxiety and this relationship needs further examination. Future research should examine this relationship further. In addition, future research should test these relationships with specific sport groups. This study was based upon a convenience sample drawn from 26 sports and as such its applicability to specific sports may be limited. In addition, the sample size should be dramatically increased to determine if further relationships are elicited.

A greater understanding of the mechanisms that influence anxiety in athletes could facilitate the development of more effective coaching methods. This study clearly indicates that the coach plays an important role in influencing the sport anxiety felt by their athletes. By recognising the influence of the coach in athlete anxiety, strategies and interventions can be created which may decrease negative

outcomes such as anxiety and dropout while increasing positive outcomes such as satisfaction and enjoyment.

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