COGNITIVE-BEHAVIORAL STRATEGIES AND PRECOMPETITIVE ANXIETY AMONG RECREATIONAL ATHLETES

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Although cognitive-behavioral strategies have been demonstrated relatively effective in improving sport performance and regulating various affective states among highly skilled athletes, the strategy-anxiety relationship has been left largely untested within the realm of recreational sport. The present study utilized self-report data from 186 recreational league tennis players in order to describe the prevalence, types, sources, and perceived effectiveness of cognitive-behavioral strategy use among a sub-elite sample as well as to determine the extent to which each strategy contributed to changes in cognitive anxiety, somatic anxiety, and self-confidence prior to official competition. Nearly 30% of the sample reported using strategies in training and competition, comprised by relaxation, mental imagery, attention control, positive self-talk, and goal-setting. Stepwise regression analyses controlling for player characteristics revealed that attentional control and goal-setting strategies contributed to lower cognitive state anxiety, attention control and imagery/relaxation strategies resulted in lower somatic state anxiety, and attention control and positive self-talk contributed to increased state self-confidence. The role of specific cognitive-behavioral techniques in facilitating adaptability to competitive stress among recreational athletes is discussed.

Research in applied sport psychology has documented the nature of mental preparation, its implementation within sport, and its impact on various cognitive and affective indices among athletes (for review, see Singer, Murphey, & Tennant, 1993). Both Olympic and intercollegiate athletes have been found to consistently use specific categories of cognitive-behavioral strategies to manage emotions and improve performance. These techniques include mental imagery (e.g., rehearsing tactics, anticipating potential performance problems), thought control (e.g., repeating self-affirming statements, restructuring negative thoughts), arousal control (e.g., engaging in relaxation techniques), and behavioral preparation (e.g., focusing on task-relevant cues, pursuing

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performance goals) (Gould, Eklund, & Jackson, 1992; Heishman & Bunker, 1989; Orlick & Partington, 1988). Elite athletes who exhibit superior levels of attributes relevant to sport performance (i.e., self-confidence, positive intensity, and high motivation) tend to make regular use of mental strategies in their training and competitions (Gal-Or, Tanenbaum, & Shimrony, 1986; Williams & Krane, 1993).

Considerable evidence has supported the proposed relationship between specific cognitive-behavioral strategies and positive affective outcomes among accomplished athletes. For example, when evaluating the role of goal-setting training on cognitive appraisal variables, Burton (1988) found that the use of performance goals among college athletes had a significant, positive impact on cognitive anxiety, self-confidence, and concentration. Finch, Gould, Smethurst, and Steffen (1996) found that “mentally tough” college athletes made greater use of mental imagery and relaxation techniques, reported less cognitive and somatic state anxiety, and exhibited higher state self-confidence than their less mentally prepared counterparts. In addition, athletes who are able to maintain an appropriate attentional focus typically exhibit relatively low levels of performance anxiety. According to the model of Attentional Control Training (ACT), Nideffer (1993) contends that reactive sports such as tennis require considerable attentional control and flexibility in order for an athlete to respond appropriately to a wide array of changing and unanticipated stimuli. Specifically, athletes successful in reactive sports are better able to narrowly focus attention, avoid external distractions, and discriminate between relevant and irrelevant internal information (Nideffer, 1990). The ability to control one’s attention has also been associated with low to moderate arousal levels, decreased worry and concern, and increased self-confidence (Nideffer, 1993). However, considerably less information has been gathered regarding the prevalence of the above-mentioned mental strategies among recreational sport participants as well as their effect on emotional responses such as competitive state anxiety.

Taken as a whole, the current applied sport psychology literature indicates that among accomplished athletes, the cognitive-behavioral strategies of mental imagery, attention control, relaxation, goal setting, and self-talk are effective in producing various desired affective states associated with competitive sport participation. Although several authors propose that athletes of all ages and skill levels can benefit from the integration of psychological methods into their sport experience (Gould, Weinberg, & Jackson, 1980; Greenspan & Feltz, 1989; Weinberg & Williams, 1993), a consensus has not been reached regarding which specific mental strategies are most influential in controlling various affective states among recreational athletes. Greater insight into the strategy-effect relationship amongst this group of individuals may allow for intervention designed to maintain recreational sport participation as a psychologically beneficial lifetime pursuit. Thus, two unique purposes were formulated by the present study. First, an effort was made to
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describe the relative weighting of proposed mental strategies by recreational athletes, the perceived effectiveness of these strategies, and the particular source(s) of strategy development. It was also of interest to determine the extent to which each cognitive-behavioral strategy was related to levels of cognitive state anxiety, somatic state anxiety, and state self-confidence experienced by athletes prior to competitive play. A group of recreational tennis players is especially conducive to studying patterns of mental strategy use and precompetitive anxiety in that the heightened evaluative aspect of individual sports such as tennis tends to elicit a greater degree of competitive anxiety than does that of team sports (Martens, Vealey, & Burton, 1990). Also, the fragmented nature of play during a competitive tennis match facilitates data collection regarding strategy use not only pre- and post-match but during competition as well. In this sense, the present sample of tennis players may be viewed as quite typical of athletes involved in individual, reactive sports at the recreational level.

Method

Participants

Participants were 88 male (47.3%) and 98 female (52.7%) adult recreational tennis players competing in ability-level league play sponsored by the United States Tennis Association (USTA). Players were grouped into teams based on their respective National Tennis Rating Program (NTRP) rating and participated in singles competition. According to the NTRP rating system, higher ratings correspond to greater tennis ability as assessed by standardized testing of stroke mechanics, shot selection, strategy use, and shot consistency.

The overall ability level of the present group of athletes was clearly distinct from those levels previously studied in that college and professional playing experience was minimal. Specifically, the highest level of competitive playing experience attained by the present sample was represented by the following categories; junior tournament level (12%, \( n = 22.3 \)), high school (17%, \( n = 31.6 \)), intercollegiate (6%, \( n = 11.2 \)), professional or satellite circuit (0%, \( n = 0 \)), and adult recreational league only (65%, \( n = 120.9 \)). Nearly equal numbers of players represented the five NTRP levels of 3.0 (\( n = 41 \)), 3.5 (\( n = 40 \)), 4.0 (\( n = 33 \)), 4.5 (\( n = 27 \)), and 5.0 (\( n = 45 \)). The mean age of players was 41 (\( SD = 9.47 \)) and ranged from 20-64 years. Players ranged in competitive experience from 1 to 12 years (\( M = 4.19, SD = 2.34 \)) and reported participating in 6.74 (\( SD = 4.18 \)) competitive events in the previous 12 months. Eighty-six (46.2%) players were currently receiving instruction from a club professional.

Instrumentation

Use of cognitive-behavioral strategies. Within her conceptual framework of psychological skills training in sport, Vealey (1994) refers
to mental imagery, relaxation, attention control, self-talk, and goal setting as the major performance-related psychological techniques. These strategies appear to positively influence tennis performance and affective responses at both the professional and intercollegiate levels of competition (Loehr, 1994; Weinberg, 1988). A series of questionnaire items were developed to assess the extent to which the present sample of athletes make use of the five pre-selected mental strategies in their training and competition. Specifically, players were asked to (a) report on a 7-point scale from 1 (hardly at all) to 7 (almost always) the extent to which they utilize the strategies of mental imagery, relaxation, attention control, goal setting, and positive self-talk in their tennis performance, (b) rank each strategy in terms of its relative effectiveness from 1 (not at all effective) to 7 (extremely effective), (c) describe the source of information from which they developed their respective strategies, (d) describe when during the training and competitive processes they employ each strategy, and (e) provide an example of each strategy they use. In order to maximize the reliability of these self-reported data, a standardized definition of each mental strategy was presented to players along with its respective response scales. These definitions were developed through a content analysis of the relevant applied sport psychology literature, most notably Williams (1993), Anshel (1990), Weiss (1991), and Singer et al. (1993). Considering that a wide array of mental preparation techniques may be employed within various sport contexts, each strategy was presently defined in terms of how it is typically used to meet the specific demands of tennis training and competition. The Mental Imagery strategy was defined in terms of (a) visualizing the employment of specific on-court tactics, (b) visualizing appropriate emotional and behavioral responses to performance mistakes, (c) creating a mental image of proper stroke production, and (d) anticipating an opponent's actions. The Relaxation strategy was defined in terms of (a) monitoring muscular tension and engaging in stretching techniques, (b) controlling breathing both during and between points, and (c) regulating environmental stimuli prior to competition (e.g., listening to music, seeking a private setting). The Attention Control strategy was defined in terms of (a) minimizing attention to previous mistakes and future events, (b) attending to the ball and bodily cues of the opponent during points, (c) attending to physiological regulation and motivational cues between points, and (d) focusing on tactics as well as emotional and physical composure during court changeovers. The Goal Setting strategy was defined in terms of (a) establishing specific performance goals for both training and competition, (b) developing a training regimen in order to achieve desired outcomes, and (c) reinforcing goal-directed behavior through rewards and punishment. The Positive Self-Talk strategy was defined in terms of (a) utilizing self-instructional phrases to facilitate skill improvement, (b) rehearsing verbal cues in order to optimize motivation for practice and competition, (c) anticipating competitive situations which typically elicit negative thoughts and replacing them with self-affirmative
statements, and (d) checking and correcting irrational beliefs about one's performance in practice and competition.

**Competitive state anxiety.** In order to assess levels of cognitive, somatic, and state self-confidence, players responded to the 27-item Competitive State Anxiety Inventory-2 (CSAI-2) (Martens et al., 1990) by indicating how they felt prior to a league match using a 4-point scale ranging from 1 (not at all) to 4 (very much so). Examples of CSAI-2 items include, "I am concerned about choking under pressure" (cog A-state), "my body feels tense" (A-state), and "I'm confident I can meet the challenge" (state SC). All items met the item-total correlation criterion established by Kline (1986). Alpha coefficients for the three subscales in the present study were .81, .87, and .89, respectively, indicating adequate internal consistency of the CSAI-2.

**Procedure**

Upon approval from local USTA league officials and team managers, all league players were administered the demographic and mental strategy items 1 day prior to competition. This data collection was conducted in a standardized fashion whereby respondents read each description and were provided an opportunity to ask questions on an individual basis. On the day of an official USTA league competition, players were administered the CSAI-2 within 10 minutes of their respective match time.

**Statistical Analyses**

Descriptive statistics (means, standard deviations, correlation coefficients) were calculated for each cognitive-behavioral strategy and competitive state anxiety variable. A series of multiple regression analyses were conducted on each CSAI-2 subscale to determine if the reported use of strategies has a significant impact on precompetitive state anxiety as well as which specific strategies best predict levels of cognitive A-state, somatic A-state, and state self-confidence.

**Results**

**Preliminary Analyses**

Pearson correlation coefficients were calculated among the mental strategy variables to assess multicollinearity. Tabachnick and Fidell (1989) propose that intercorrelations in excess of .70 should be scrutinized for adequate tolerance. Each of the intercorrelations met this criterion with the exception of Mental Imagery-Relaxation ($r = .81$) which exceeded the recommended limits of multicollinearity. Thus, for heuristic purposes these two variables were collapsed and retained for subsequent analyses.

No significant differences in the percentage of reported use among the four mental strategies emerged between male and female players (Attention Control: 21.6%, 23.5%; Imagery/Relaxation: 20.5%, 22.4%;
Positive Self-Talk: 21.6%, 23.5%; Goal Setting: 18.2%, 15.3%), respectively. In addition, no gender differences were found in pre-competitive anxiety with respective male and female scores of: cog A-state ($M = 19.97, SD = 5.14$; $M = 20.71, SD = 5.69$), som A-state ($M = 16.34, SD = 3.82$; $M = 16.35, SD = 3.92$), and state SC ($M = 19.75, SD = 5.27$; $M = 20.72, SD = 6.16$). Therefore, the responses of male and female players were pooled for all subsequent analyses.

Forty-nine players (26% of the total sample) reported using at least one cognitive-behavioral strategy in their tennis training and competitive play. These athletes ranked the strategy of Relaxation/Imagery as most effective, followed in order by Attention Control, Positive Self-Talk, and Goal Setting. The use of each strategy reported by players differed slightly, ranked in order by Attention Control (85.7%), Positive Self-Talk (79.2%), Imagery/Relaxation (73.4%), and Goal Setting (62.3%), with multiple responses permitted. Typical descriptions given by the present sample of each mental strategy included Attention Control (e.g., "when I approach the net, I focus completely on the ball coming off my opponent's racket and it [ball] seems to slow down"), Positive Self-Talk (e.g., "I keep telling myself that 'I have all the skills' and 'to give a 100% effort' before important points to avoid choking"), Mental Imagery (e.g., "before the match I mentally practice hitting backhand passing shots, staying level and smooth"), Relaxation (e.g., "when changing courts, I use the time to bring my breathing down and let my arms and legs go limp"), and Goal Setting (e.g., "this last month, I've tried to spend at least 15 minutes every session to work on the accuracy of a stroke"). The most prevalent source of strategy information reported by athletes was written and video instructional materials (75.5%) followed by instruction from a tennis teaching professional (30.6%), information sharing among tennis partners (30.1%), and consultation with a sport psychologist (4%). Players reported making the most frequent use of their strategies "before" matches (79.6%) followed by "during" matches (61.2%) and "after" matches (10.2%).

<table>
<thead>
<tr>
<th>Mental Strategy</th>
<th>Cog A-state ($M=20.37, SD=5.44$)</th>
<th>Som A-state ($M=16.34, SD=3.86$)</th>
<th>State-SC ($M=20.25, SD=5.76$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-Talk ($M=4.52, SD=.42$)</td>
<td>-.32c</td>
<td>-.27c</td>
<td>.37c</td>
</tr>
<tr>
<td>Imagery/Relaxation ($M=3.87, SD=.71$)</td>
<td>-.29c</td>
<td>-.28c</td>
<td>.33c</td>
</tr>
<tr>
<td>Attention Control ($M=2.90, SD=.21$)</td>
<td>-.24b</td>
<td>-.29c</td>
<td>.30c</td>
</tr>
<tr>
<td>Goal Setting ($M=4.24, SD=.97$)</td>
<td>-.20a</td>
<td>-.23b</td>
<td>.24b</td>
</tr>
</tbody>
</table>

a: $p \leq .01$; b: $p \leq .001$; c: $p < .0001$
The Strategy-State Anxiety Relationship

A preliminary correlational analysis involving the cognitive-behavioral strategy and state anxiety variables revealed that increased use of each of the four strategies was associated with lower cognitive and somatic state anxiety as well as greater state self-confidence (all \( p < .01 \)). The means, standard deviations, and zero-order correlations are listed in Table 1. Between-group comparisons demonstrated that those players who reported regular strategy use in training and competition exhibited less cognitive state anxiety (\( t = 3.32, p < .001 \)), less somatic state anxiety (\( t = 1.97, p < .05 \)), and greater state self-confidence (\( t = -2.94, p < .01 \)) than players who reported no strategy use.

Table 2

Percentage of Variance Accounted for in State Anxiety Dimensions Via Hierarchical Stepwise Multiple Regression

<table>
<thead>
<tr>
<th>Anxiety Dimension</th>
<th>Beta</th>
<th>RsqCh</th>
<th>F value</th>
<th>df</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cog A-state</strong></td>
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<tr>
<td>Step 1: Player Characteristics</td>
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</tr>
<tr>
<td>Age</td>
<td>.05</td>
<td></td>
<td>4.97</td>
<td>(4,182)</td>
<td>.001</td>
</tr>
<tr>
<td>Gender</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Years Experience</td>
<td>.19*</td>
<td></td>
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<tr>
<td>NTRP Rating</td>
<td>-.32***</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Step 2: Strategies</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Attention Control</td>
<td>-.24*</td>
<td></td>
<td>4.11</td>
<td>(8, 178)</td>
<td>.01</td>
</tr>
<tr>
<td>Imagery/Relaxation</td>
<td>-.13</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Positive Self-Talk</td>
<td>-.23</td>
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<tr>
<td>Goal Setting</td>
<td>-.37**</td>
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<tr>
<td><strong>Som A-state</strong></td>
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<td>Step 1: Player Characteristics</td>
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<tr>
<td>Age</td>
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<td>3.16</td>
<td>(4,180)</td>
<td>.01</td>
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<tr>
<td>Gender</td>
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<td></td>
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<tr>
<td>Years Experience</td>
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<td></td>
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<tr>
<td>NTRP Rating</td>
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<tr>
<td>Step 2: Strategies</td>
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</tr>
<tr>
<td>Attention Control</td>
<td>-.33*</td>
<td></td>
<td>2.50</td>
<td>(8, 172)</td>
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<tr>
<td>Imagery/Relaxation</td>
<td>-.39**</td>
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<tr>
<td>Positive Self-Talk</td>
<td>-.23</td>
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<tr>
<td>Goal Setting</td>
<td>-.12</td>
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<tr>
<td><strong>State SC</strong></td>
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<td>Step 1: Player Characteristics</td>
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</tr>
<tr>
<td>Age</td>
<td>-.07</td>
<td></td>
<td>11.97</td>
<td>(4,182)</td>
<td>.001</td>
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<tr>
<td>Gender</td>
<td>.06</td>
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<td></td>
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<tr>
<td>Years Experience</td>
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<tr>
<td>NTRP Rating</td>
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<td>Step 2: Strategies</td>
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<td></td>
</tr>
<tr>
<td>Attention Control</td>
<td>.32*</td>
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<td>7.42</td>
<td>(8, 178)</td>
<td>.001</td>
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<tr>
<td>Imagery/Relaxation</td>
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<td>Positive Self-Talk</td>
<td>.23*</td>
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<tr>
<td>Goal Setting</td>
<td>.15</td>
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* (\( p < .05 \)); ** (\( p < .01 \)); *** (\( p < .001 \))
The specific relationship between the predictor set of four strategies and the dependent measures of competitive state anxiety was assessed by means of a multiple stepwise regression whereby the effect of player characteristics (i.e., gender, age, playing experience, NTRP rating) was partialed out prior to assessing the impact of the strategy variables. As indicated in Table 2, the group of player variables was entered at the first step and found to be a significant predictor of each of the CSAI-2 subscales ($p < .001$), accounting for 9% of the variance in cognitive state anxiety, 7% in somatic state anxiety, and 20% in state self-confidence. NTRP rating appeared to be the most influential individual predictor of precompetitive anxiety with beta values of -.32, -.28, and .45 for the three state anxiety indices, respectively. In Step 2, the group of strategy variables was found to add significantly to the prediction of each of the state anxiety dimensions ($p < .001$). The addition of the strategy variables contributed to the explained variance in each state anxiety level by 6%, 9%, and 7%, respectively. Specifically, Attention Control ($p < .05$) and Goal Setting ($p < .01$) were predictive of cognitive state anxiety, Attentional Control ($p < .05$) and Imagery/Relaxation ($p < .01$) of somatic state anxiety, and Attentional Control ($p < .05$) and Positive Self-talk ($p < .05$) of state self-confidence. The observed directions of the beta values indicate that players making greater use of attention control and goal-setting strategies exhibited lower levels of worry and concern regarding competition. Players who utilized the attention control and imagery/relaxation strategies reported less somatic, or physiologically based, anxiety. Lastly, the use of attention control and positive self-talk strategies was associated with higher levels of self-confidence prior to competition.

Discussion

The present study provides preliminary evidence that recreational tennis players utilize cognitive-behavioral strategies in their training and competition, these techniques are associated with dimensions of precompetitive state anxiety as proposed by theory, and these relationships are significant above and beyond the influence of player age, gender, experience, and ability level.

It is interesting to note that ability level, rather than overall playing experience, is significantly related to decreased competitive anxiety. This finding makes intuitive sense in that the mere amount of participation in organized recreational sport does not necessarily promise an athlete better skills in dealing with competitive stress. Rather, the active use of cognitive-behavioral strategies, which appears to be more prevalent among better players, may be required to maintain state anxiety (i.e., worry, arousal) within acceptable levels. It is plausible that through the process of developing greater playing ability (i.e., strokes, shot control, and strategies), players may feel the necessity to also develop and employ mental techniques, one by-product of which is reduced state anxiety. The perceived similarity among the relaxation and mental
imagery strategies, as reported by athletes, follows closely with reports in the applied sport psychology literature. These two methods tend to be related in a reciprocal manner in that the self-regulation of arousal is a precursor to effective imagery rehearsal which, in turn, facilitates optimal activation levels (Suinn, 1993). For the present sample of recreational athletes, the cognitive-behavioral strategies of relaxation and mental imagery may represent a more generalized approach to mental preparation for tennis and thus are not perceived as functionally different.

Multiple regression analyses revealed that the use of attention control and goal setting was associated with lowered cognitive state anxiety, attention control and imagery/relaxation with reduced somatic state anxiety, and positive self-talk and attention control with increased levels of state self-confidence. A striking similarity exists between the specific strategy-anxiety relationships demonstrated among these recreational tennis players and empirical evidence gathered from elite-level athletes within a variety of sports. For example, when considering the significant effect of attention control and relaxation/imagery on somatic anxiety, proper use of process and outcome cues in competition allows the athlete to focus on task-relevant stimuli and maintain proper pacing which impact the athlete’s perception of somatic anxiety (Nideffer, 1993). Likewise, mental imagery and relaxation techniques largely influence somatic anxiety by maintaining proper arousal levels, reducing general muscular tension, and increasing the athlete’s awareness of muscular tension states. These same attentional components, along with positive self-talk, have been associated with increased self-confidence (Landers, Boutcher, & Wang, 1986; Boutcher & Crews, 1987; Schunk, 1995). As for the role of goal setting and attention control on cognitive state anxiety, it is plausible that athletes who maintain a task-relevant attentional focus as well as set and pursue specific performance goals are less likely to engage in performance-related worry and concern which are indicative of cognitive state anxiety. Overall, the present results among recreational athletes extend the conclusions of Ungerleider, Golding, Porter, and Foster (1989), suggesting that the strategies of attention control, goal setting, imagery/relaxation, and positive self-talk may increase an athlete’s adaptability to the competitive aspect of recreational sport by providing an adequate means of coping with competitive stress.

Because of the self-report nature of the mental strategy data, moderate caution may be warranted in the interpretation of the present results. Although considerable insight into the mental preparation of recreational athletes may be gained through the use of self-report measures, it is possible that athletes may have misconstrued the strategy descriptions and reported their type and frequency of strategy use in a self-effacing manner (Brewer, Van Raalte, Linder, & Van Raalte, 1991). Likewise, Gould et al. (1992) note that studies investigating mental preparation in sport have typically utilized previously constructed instruments to measure psychological skills as trait aspects of the athlete which seriously neglects the important situational component involved in implementing mental strategies. The present study attempted
to alleviate a portion of these inherent problems by allowing a structured
dialog to occur as athletes responded to the mental strategy items as
well as framing the items in terms of both general and situation-specific
use. Several authors contend that with proper research methodology
and controls, honest responses and comparatively rich descriptive
information may be generated through the use of this method (Martens,
1987; Scanlan, Stein, & Ravizza, 1989).

The emphasis of the present study was to determine the relationship
between particular cognitive-behavioral strategies and levels of
precompetitive state anxiety. Inferences regarding the impact of strategy
use on competitive anxiety and, in turn, sport performance require direct
investigation. For example, athletes describing the psychological aspects
of their best performances often recollect being mentally prepared,
highly self-confident, yet considerably anxious (Gould et al., 1992). A net
reduction in arousal does not necessarily infer better competitive
performance but, rather, effective mental preparation for competition
requires that an athlete achieves and maintains a positive perception of
relatively high levels of arousal. Future research would be well-directed
to adopt a qualitative approach in determining the relationship between
strategy use, competitive anxiety, and fluctuations in performance across
a competitive event. For example, Hardy’s (1990) catastrophe model of
the arousal-performance relationship proposes that the impact of
somatic arousal on performance varies depending on the existing level
of cognitive anxiety. Under conditions of low cognitive anxiety,
considerable levels of arousal may be tolerated before sport
performance is adversely affected. However, should an athlete evidence
heightened cognitive anxiety, further increases in arousal would lead to
an abrupt and substantial decrease in performance.

Combinations of cognitive-behavioral strategies may exist which would
minimize cognitive anxiety and optimize somatic arousal levels, thus buffering
an athlete from the theorized catastrophic point in Hardy’s model. It would be
interesting to determine (a) what situational aspects of a competitive event
force athletes to alter their strategies in order to successfully manage anxiety,
(b) how these strategies might differ according to factors such as opponent
difficulty, length of performance, and sport type, and (c) what methods are
most effective for an athlete’s emotional and physical recovery once the
catastrophic point has been reached. A second line of inquiry would address
the accuracy and level of awareness reflected in athlete self-reports of mental
preparation strategies. Gould et al. (1992) contend that athletes may employ
some mental strategies on a subconscious level which, in fact, are quite
influential in maintaining proper emotional and physical states prior to and
during competition. Similarly, recreational athletes may bring certain
psychological skills into the competitive setting of which they are largely
unaware. A comparison of athlete self-reports and direct observation (e.g.,
video-tape analysis) would shed light on what mental strategies may possibly
be acquired in a vicarious manner through improving one’s physical skills in
recreational sport.
References


