CHAPTER-1
INTRODUCTION

Human anxiety is a complex thing. We are all interested in understanding it. We want to know why we act and react as we do. Why do we feel afraid, bad or happy? Some of us are quick in doing things, while others take time before they do any task. Many such questions arise in our minds, because we want to understand human nature, behavior and experience. The study of anxiety enables us to answer these questions in a scientific manner.

The word anxiety refers to the study of human behavior, and sports anxiety denotes a sub category of psychology that deals with the anxiety of athletes and teams engaged in competitive sports. Sports anxiety is that branch of psychology which is intimately concerned with human anxiety on the play field, both under practice and competitive situation, with a view to bring about qualitative improvement in performance and maintain the same even during the stresses of competition. It is the study of human behavior in sports settings with an emphasis on the mental aspect of anxiety. According to Browne and Mahoney, “Sports anxiety is the application of psychological principles to sports and physical activity at all level of skill improvement.

Sports psychology is an important ingredient of sports training programme and deals with the way in which various psychological states and traits influence sports performance. It is the application of psychology to the issues and problem in the field of sports as the problem of sports persons are quite unique, different, subtle and complex. Therefore, the main purpose of sports psychology is to understand the behavior of an athlete, to modify it according to the demands of situations, and to optimize the benefits for elite performance and excellence (Singh et al., 2003).

The state-trait anxiety distinction:
The emotional reaction of anxiety varies in intensity and fluctuates over time. Physiological and psychological calmness and serenity indicate the absence of an anxiety response. Moderate levels of anxiety involve apprehension, nervousness, worry and tension, very high levels of anxiety may involve intense feelings of fear, catastrophic thoughts, and high levels of physiological arousal. The momentary level of anxiety experienced by an individual is termed state anxiety.

In recent years, psychologists have been working on many diverse problems in the various fields. In sports, we find many problems which are faced by our
players and athletes, which are psychological nature, e.g. problems related to aggression, motivation, perception, anxiety, fear stress etc. Anxiety is a well-studied construct in a range of psychological research areas, including sports and has over the years undergone considerable refinements with regard to conceptualization and inventories used. For a comprehensive understanding of anxiety in sports, an appropriate starting point for this dissertation is to briefly overview the related historical developments within mainstream psychology.

Whereas issues referring to anxiety were only occasionally mentioned in psychological literature while at time of the decades of the 20th century, albeit discussed by philosophers for centuries and included the theories by Freud, the number of published articles in psychological journals increased dramatically after 1950. Although these inventories were regarded as significant advancements to the study of anxiety, specifically, anxiety was generally regarded as a global personality trait, expressed among individuals as stable differences in character. In addition, anxiety was frequently treated synonymously with constructs such as neuroticism, stress, depression, tension and fear. The interest of anxiety of experienced by athletes in relation to sports competitions increased dramatically in the beginning of the 1970’s (Lundqvist, 2006).

It is now generally accepted that a comprehensive theory of anxiety must distinguish between anxiety as a transitory emotional state and individual differences in the relatively stable personality trait of anxiety. An adequate model of anxiety should also specify the nature of the cognitive processes that mediate the appraisal of threat as well as the consequences of such appraisals.

The multidimensional nature of anxiety:

One rationale for the distinction between cognitive and somatic anxiety is the likelihood that these dimensions may differential affect behavior. For example, Morris et al. hypothesized that the differential nature and patterns of change in cognitive anxiety impairing task performance more frequently and more strongly than does somatic anxiety. They reasoned that somatic anxiety should primarily affect initial performance, when performers are feeling most nervous. On the other hand, cognitive anxiety should be a more powerful mediator of ongoing performance because expectations of failure may arise at any time during the performance. Likewise, it might be expected that performance on cognitive tasks would be
particularly affected by cognitive anxiety. As we shall see, attempts have been made to test these hypotheses in recent studies of sport performance anxiety.

**The general-specific anxiety distinction:**

Since state anxiety is defined as a transitory emotional response, it is always measured within specific situations. Trait measures of anxiety, on the other hand, fall into two general categories. Some instruments measure anxiety as a global trans-situational trail, while others are designed to assess the tendency of individuals to experience anxiety within particular types of situations such as tests, social situations, or competitive sport situations. The study of situation-specific anxiety has been stimulated in part by interactional approaches to personality, in which behavior is assumed to be determined by the reciprocal interaction of personal traits and the characteristics of situations. If anxiety is a learned response to particular classes of situations, then we should expect that situation-specific anxiety measures would relate more strongly to behavior in the critical situations than would general Trans-situational anxiety. An impressive array of research supports this prediction. For example, test anxiety measures are more strongly related to test performance than are measures of general anxiety.

**The measurement of Anxiety in sports:**

The development of adequate measurement techniques is critical to the study of any psychological construct. In research on sport anxiety, much progress has been made in the past decade as results of the development of sport-specific state and trait anxiety measures. Because of the important distinction between state anxiety and trait anxiety, we describe both types of measures.

**Trait Anxiety Measures:**

Until the late 1970s, no sport-specific trait anxiety measures existed. Consequently, investigators wishing to assess individual differences in trait anxiety employed general anxiety measures such as Taylor’s Manifest Anxiety scale the anxiety factor from Cattell’s 16PF, and the trait scale from Spielberger’s state-trait Anxiety inventory. Because general anxiety scales assess anxiety across a wide range

Some research has been conducted to determine whether certain types of sports are more anxiety than others. Griffin administered the STAI- State to 682 female athletes within 1 hour prior to competition. The athletes were drawn from three age groups and from four individual sports and four team sports. Although the
findings were not presented separately by age group, the results indicated that individual sports elicited higher pre-competition state anxiety than team sports. Gymnasts had the highest anxiety scores, followed in rank order by participants in track and field, swimming, tennis, football, volleyball, basketball, and field hockey.

In another study, Simon and Martens administered the children’s form of the CSAI-1 to 468-9 to 14-year-old boys 10 minutes they competed in one of seven non-school organized sports: baseball, basketball, football, ice hockey, gymnastics, swimming, and wrestling. Covariance analysis was used to control for between-athletic differences in basal state anxiety measured in a non-evaluative setting. Surprisingly, an overall comparison between contact and noncontact sports revealed no significant differences in pre-competition anxiety. However, the findings indicated that participants in individual sports had higher state anxiety prior to competition than athletes in team sports. Wrestling and gymnastics were the two most anxiety-inducing sports; they elicited significantly higher anxiety than football, hockey, and baseball, which were the least stressful activities. Thus, the results of griffin and those of Simon and martens are consistent in revealing that individual sports, which maximize the social evaluation potential of competition, generally elicit higher levels of pre-competition anxiety than team sports.

In addition to the type of sport the importance of the game or match is another situational factor that has been found to influence pre-competition anxiety. Lowe and McGrath examined the effects of game criticality on the arousal level of 60 boys, 10 to 12 years of age, throughout an entire 18-game season of little league baseball. Game criticality was determined by a formula that took into account the ranking of the two teams within the league, the difference in their won-lost percentages, and the number of games remaining in the season. Two physiological measures, pulse rate and respiration rate, indicated that pregame arousal increased under conditions of increased game importance. More recently support for a relationship between pre-competition anxiety and criticality was indicated in a study of junior elite wrestlers, who rated “participating in championship meets” as a major source of stress. Similarly, felts and Albrecht found that participating in championship races was a major source of stress among junior elite runners.

The amount of time prior to competition is a third factor that affects pre-competition anxiety. Gould, Horn and Spreeman asked junior elite wrestlers to retrospectively rate their typical level of anxiety at various times prior to a major
competition. Reported that boys and girls with lower expectancies for their team to be victorious experienced greater pre-competition anxiety than children with higher team expectancies. With respect to individual performance expectancies, boys with lower expectancies to personally play well in a soccer game or to win a wrestling match experienced greater pre-competition anxiety than boys with higher personal performance expectancies. This result was not found for female soccer players and did not account for much of the anxiety variance for male soccer players. Overall, the results indicated that team expectancies were more important predictors of anxiety in team sports than personal performance expectancies. However, in individual sports, personal performance expectancies were strong predictors of pre-competition anxiety.

Finally, Scanlan and Lewthwaite’s study of male junior wrestlers revealed that certain pre-match worries and perceptions of significant adults were associated with unidimensional pre-competition anxiety as measured by the CSAI-1. Specifically, (1) boys who worried more frequently about failure experienced greater general state anxiety than boys who were less preoccupied with performing poorly and making mistakes, (2) boys who worried more frequently about the performance expectations and evaluations of their parents and coach tended to experience greater anxiety than boys who worried less frequently, and (3) boys who felt greater parental pressure to compete (i.e., having to wrestle in order to please one’s parents) exhibited higher anxiety than boys who perceived less pressure from their parents to participate. The relationship between worries and CSAI-1 state anxiety found in this study may reflect the common variance shared by cognitive and somatic anxiety.

It might also be noted that children’s pre-competition state anxiety appears to be unrelated to several intrapersonal factors, namely, gender, age and amount of sport experience. In comparing the results of their boys’ and girls’ soccer studies, Scanlan and Passer found that the state anxiety responses of the two sexes were remarkably similar before competition. Laboratory experiments also revealed that gender was unrelated to children’s pre-competition state anxiety. With respect to age and amount of sport experience, Gould et al. asked junior elite wrestlers how anxious they usually became prior to competition. No significant differences were found in the rating of younger versus older wrestles, or in the ratings of less experienced versus more experienced wrestles. Similarly, state anxiety measurements of the female high school volleyball players taken at various times
prior to competition revealed no differences in cognitive or somatic anxiety between experienced and inexperienced players.

In summary, a wide variety of intrapersonal factors are related to heightened pre-completion state anxiety responses in young athletes. High-competitive trait-anxious athletes experience higher levels of precompetitive state anxiety than low trait-anxious participants. Similarly, low self-esteem children experience more competitive anxiety than do high self-esteem children. Finally, young athletes who experience high levels of state anxiety are characterized by low team and individual performance expectancies, they tend to worry more about failure, adult expectations and social evaluation, and they perceive more parental pressure to participate.

**Concept of Anxiety:**

Anxiety is an affective quality that influences every person in everydaylife, and is accompanied by significant functional impairment when it reaches clinical levels. However anxiety is anormal and necessary part of development and occurs in all children and adults. Anxiety is associated with child functional impairment in many different domains. For example, children with clinical and sub-clinical symptoms of anxiety may have difficulty dealing with normal developmental challenges relating to peers and succeeding in school and colleges.

Anxiety is innate and plays a crucial role in shaping human behavior. Anxiety is a painful uneasiness of mind concerning anticipated ill. The uneasiness denoted by anxiety differs from the uneasiness involving fear, as these terms are commonly used, in this respect. Anxiety is a response to a hidden and subjective danger; fear, to an obvious and objective danger. Also, according to this concept, the subjective factor that leads to anxiety may be unconscious or unrecognized. Many rather common ‘fears’ of children and adults are phobiasin the sense that they involve a projection, onto an external object or situation, of some kind of internal disturbance. It is important to recognize that the fear may arise from an internal disturbance. To face anxiety a person learns to cope with his own internal condition. He needs to be helped to understand himself and achieve a degree of self-acceptance that enables him to be free (Skinner, 2001).

All of us have been fearful in various situations. Indeed, to be without fear would be a sign of a disordered personality. Not all of us, however, have found ourselves in situations in which our fears have traumatized us into action. In the
stressful setting provided by competitive athletics, it is not unusual to observe an athlete whose fears at least interfere with effective performance. The tendency to feel fearful in general and specific ways has long intrigued behavioral scientists and others with an interest in both the normal and abnormal personality. Some psychoanalysts employ the term anxiety only to denote an abnormal amount of apprehension and use the fear to refer to a rational appraisal of a real, threatening situation. Anxiety interacts with other facets of behavior and within numerous situations important in athletic competition (Cratty, 1983).

Anxiety is a fundamental emotion that influences our lives from earliest childhood. These and other observations suggest that the role of anxiety in sport has a range of practical implications that can potentially be addressed through a greater understanding of the antecedents, dynamics, and consequences of anxiety. Moreover, from a scientific perspective, sport would appear to offer a number of advantages as a setting for the study of anxiety. Here, large numbers of subjects are exposed to predictable, identifiable, and consequences studied within a meaningful real-life context. Performance measures having unquestioned ecological validity are readily measurable within the athletic setting. Moreover, depending upon the sport, athletes are required to perform behaviors that vary considerably along a number of task dimensions (e.g. simple vs. complex, speed vs. endurance; self-paced vs. reactive; cognitive vs. motoric.), permitting researchers to assess the effects of anxiety (including its cognitive and somatic components) on various classes of behavior.

**Anxiety during Competition:**

As we have seen, several situational factors are related to how much anxiety children experience prior to competing. Other investigations have examined how young athletes’ anxiety during competition is affected by specific situational factors that accompany or occur within a particular contest. Lowe and McGrath’s study of Little Leaguers also examined the effects of game and situation criticality on arousal during competition. As previously described, game criticality represented the importance of the game itself and was a function of the ranking of the importance of the immediate situation within the game and took into account the difference in score between the two teams, the inning of play, the number of outs, and the number and location of any base runners. In addition to recording pregame pulse and respiration rates, the investigators took these physiological measures each time a player was in
the dugout, waiting to go to the on-deck circle. Overall, game criticality seemed to have a greater effect on players’ arousal than did situation criticality, which led Lowe and McGrath to suggest that the importance of the total situation (i.e., the game) may be a greater determinant of arousal than specific events within the situation.

Another study examined arousal during competition as a function of the specific activity or role being performed within a sport. Hanson used telemetry to monitor the heart rates of 10 male Little League Baseball players. Recordings were taken when the player was at bat, standing on base after a hit, and sitting in the dugout after making an out, standing in the field, and sitting at rest before and after the game. The most striking finding was the magnitude of response shown when players came to bat. When at bat players’ heart rates escalated dramatically to an average of 166 beats per minute, 56 bpm above their mean pregame resting rate of 110 bpm. In fact, no other game situation caused arousal increases that even closely approximated the levels experienced when batting. Substantial variation was found within and between players. The highest heart rate recorded while at bat was 204 bpm: the lowest was 145 bpm. Interestingly, after the game most players’ physiological repose, Hanson concluded that the stress of being at bat was high, but short lived.

The studies by Hanson and Lowe and McGrath provided information about players’ physiological reactions to various game conditions. Several laboratory experiments, however, have used self-report measures to assess children’s anxiety during competition. For example, Martens and Gill and Gill and Martens had children compete at a motor skills task over a series of trials, with the won-lost outcome of each trial controlled by the experimenters. State Anxiety was measured during mid-competition by Spielberger’s State Anxiety Inventory for Children. The findings indicated that children who lost the early trials became more anxious than children who found themselves ahead.

A final factor affecting anxiety during competition merits attention, namely, competitive trait anxiety. Studies reviewed earlier indicated. The unique ability of virtual environments to match exposure to the needs of various clinical application areas has been recognized by a number of researchers interested in exposure interventions. As ongoing success-failure outcomes begin to influence youngsters’ anxiety.
In summary, the following situational factors affect anxiety during competition: the criticality of the contest, the importance of the situation within the contest, the specific task or activity in which the athlete is engaged, and whether the athlete is ahead of or behind the opposition. Furthermore, competitive trait anxiety is an important intrapersonal factor that helps predict mid-competition state anxiety.

In generally last two decade research on anxiety have received a notable implementation, demonstrating that anxiety disorders are the most common disorders which affect persons throughout childhood and adolescence and they can involve a marked impact on individual’s internal and external adjustment and development. Anxiety is strongly associated with risk of later developing anxiety disorders, academic failure, and substance abuse. A variety of sub-categories of anxiety exist and co-morbidity between these is high.

**Anxiety and Performance:**

The manner in which emotional arousal affects performance is one of the classical issues in sport psychology. This question lies at the heart of every motivational theory that addresses sport performance, and it has received a great deal of theoretical and empirical attention over the years because of its practical implications.

One approach to assessing the stress-performance relationship involves asking athletes how they feel their performance typically is affected by anxiety. Pierce found that 31% of a sample of youth sport participants and 50% of sport dropouts reported that various worries prevented them playing up to their capabilities. On the other hand, 39% of a sample of elite wrestlers and 50% of junior elite runners reported that Anxiety and nervousness helped their performance. Thus, it appears that some athletes feel that Anxiety usually hurts their performance, whereas others believe that they perform better when they are anxious. Much research and theorizing has been directed at resolving these seemingly contradictory reports.

Two theoretical frameworks have served as the major bases for predictions concerning the effects of arousal on performance. Hull-Spence drive theory guided much of the early research on arousal and motor behavior. As we shall see, informal observation, intuition, and research results have increasingly favored an even older formulation, the Yerkes Dodson Law.
In their study of male players, Scanlon and Passer also examined the relationship between game closeness and post-competition anxiety. Based on the pattern of scoring and the final margin of victory or defeat, games were classified as being very close, close, and not close. The closeness of the game did not influence the postgame anxiety of winners, suggesting that a victory by a margin was sufficient to minimize anxiety. Game closeness, however, did affect losers’ anxiety. Players who last a very close game had higher postgame anxiety than players who lost either a moderately close game or a game that was not close. The latter two groups did not differ in post-competition anxiety.

Because several games in Scanlon and Passer’s studies happened to end in a tie, this allowed them to examine the effects of a tied outcome on players’ anxiety. Data from three games in the girls’ study indicated that players experienced a significant increase in pre to postgame state anxiety after tie matches, and they had greater post-competition anxiety than winners, but less than losers. The results from one tie game in the boys’ study revealed that under some circumstances, a tie can be just as anxiety inducing as a loss. Overall, the findings from both studies suggested that a tie is perceived as an aversive outcome, not a neutral one.

The amount of fun experienced while competing has been found to be a strong and consistent predictor of post competition anxiety for both genders across diverse sport contexts. Boys and girls who report having less fun during a game or match experience greater post competition anxiety than children who report having more fun. Moreover, and perhaps most importantly, the inverse relationship between fun and anxiety is independent of victory or defeat. In other words, it is not simply the case that winners have more fun than losers. This suggests that even among losing athletes, anxiety might be reduced by making the process of competition as enjoyable as possible.

In summary, several field studies have demonstrated that won-lost outcomes influence post-competition anxiety in team and individual sports, and across both sexes. Furthermore, regardless of outcome, postgame anxiety is related to children’s perceptions of how much fun they had.

**Types of Anxiety:**

Two major predictors of post-competition anxiety have been identified. These are (1) the situational factor of victory versus defeat, and its various gradations, and (2) the individual difference variable involving the amount of fun children report.
having had during the event. The effects of success-failure outcomes on competitive anxiety were examined in Scanlan and Passer’s youth soccer studies. In the first study 191 boys, 11 and 12 years of age, were administered Spielberger’s State Anxiety Inventory for Children 30 minutes before and immediately after games. A preseason baseline measure also was taken as a control factor. The second study involved 176 10 to 12 year old girls and employed the same procedure. The findings from the two studies were virtually identical, with lasting players having substantially higher postgame anxiety than winning players. Game outcome accounted for 40% of the variance in boys’ and 55% of the variance in girls’ postgame anxiety. Furthermore, a direct comparison of players’ pre and postgame scores indicated that losers were more anxious after the game than before the game, whereas winners’ anxiety decreased.

A third field study, conducted with 9 to 14 year-old male wrestlers, included an examination of whether won-lost findings generated in the team sport context generalized to the individual sport setting. Scanlan and Lewthwaite administered the children’s form of the CSAI-1 to 76 junior wrestlers prior to and after two consecutive tournament rounds. Pretournament baseline anxiety was also recorded as a control factor. For both round losers experienced greater postgame state anxiety than winners.

High level of State Anxiety have stimulus that may be manifested directly in behavior, or may serve to innate psychological defenses that have been effective in reducing State Anxiety. Stressful situations frequently faced may cause an individual to develop specific psychological defenses mechanism that is designed to minimize State Anxiety (Singh, 2004).

The sportsmen’s anxiety may be classified into several categories; i) Personal fears about winning or losing. ii) Social consequences of the quality of their performance. iii) Fears about injuries, old age and similar anxieties related to the physiological condition of their bodies. iv) Fears about the consequences of their own and others physical aggression. v) Fears regarding their rejection by the coach.

**Causes of anxiety disorders:**

The usefulness of the spielberger inventory in the sporting context was investigated in a pilot study in 1977, when 64 of the best 18-21 year old badminton players in India assembled at the national sports Centre at Lille shall for an inter-regional tournament. The weekend of badminton took place right at the end of the
season. Most players had surpassed their peaks after completing 9 months of training and competition. Consequently, the tournament was to be treated by most players as a non-serious winding-down after the rigors of the competitive season. However, several players were keen to make an impression with the coaches for possible notional youth squad selection.

Every player had several matches and the intention was that each should complete an A-State inventory immediately before and after each match. This would allow two complementary predictions to be tested:

A-State post-match will be higher than pre-match A-State when the player loses.

A-State post-match will be lower than pre-match A-State when the player wins.

It was considered that basal (uncontaminated) A-State could not be assessed during the weekend and A-Traits were also not measured. Seventeen of the 64 players agreed to fill in the questionnaires and as many had more than one match, 39 sets of before-after A-State were recorded. The results were divided about equally between “winning” and “losing” matches, there being 19 losers and 20 winners. Pre-match and post-match A-States of males/females and match winners and match losers were calculated and subjected to analysis.

Matched pairs’ tests on the before-after A-State data revealed only one significant change, i.e., a significant decrease in the female players’ anxiety after winning matches. The Figure No. urges suggest other differences might exist but no significance can be attached to these, largely as a result of the combination of the small samples and the relatively large variances. For example, the apparent increase in male A-State after winning can primarily be attributed to one individual whose A-State score more than doubled probably because he had beaten a highly rated player against all expectations.

It is also possible that his remarkably low “before” A-State score of 22 indicated the presence of the “denial” defense mechanism, particularly as he was aware of the status of his opponent. On the other hand, the lack of anxiety may have been a reflection of his resigned expectation of defeat. This situation served to highlight the fact the A-State score does not reveal why an individual is more or less anxious.
It is now generally accepted that behavior is a joint function of what individuals bring with them to situations and the nature of the situation. This interactional perspective received major impetus from the research of Endler and Hunt on person-by-situation interactions in anxiety responses. Their S-R Inventory of Anxiousness contained 11 potentially anxiety-arousing situations and 14 modes of response.

Aside from general formulations like Oxendine’s, drive theory has received few direct tests in the sport psychology literature, primarily because of the difficulties in specifying habit hierarchies. In one attempt to define habit strength, Hunt and Hillary used motor mazes with known floor and ceiling effects so that probability of a correct response could be specified. They found that arousal resulting from the presence of an evaluative audience facilitated performance on simple mazes but resulted in performance decrements on complex mazes.

Using the same tasks with a variety of physical and psychological stressors, Landers, Brawley, and Hale found similarly supportive results. Despite these positive results, however, evidence supporting drive theory has been inconsistent in the motor behavior literature. Although drive theory cannot be faulted in instances in which task characteristics were not carefully controlled or assessed, the difficulties in specifying habit hierarchies render it difficult to generate unequivocal tests of the theory.

But perhaps the most important reason why tests of drive theory are no longer occurring in the sport or motor behavior literature is that the Hull-Spence formulation has quietly faded from the scene, supplanted by other models that emphasize more explicit cognitive, attention, and motor control concepts.

The Yerkes-Dodson law

The Yerkes-Dodson law, originally advanced in 1908, has two main postulates:

1. There exists an optimal level or arousal for performance of any given task. Levels of arousal above and below this optimal level will be associated with relatively lower performance.

2. The more complex the task is, the lower will be the optimal level or arousal for its performance.

The first postulate yields the familiar “inverted-U” function between motivation and performance. The second indicates that task variables collectively subsumed
under the rubric of “complexity” must be taken into account. While the latter is consistent with the important role of habit strength in the Hull-Spence model, the postulating of a curvilinear relationship rather than a linear one is not. (It is worth noting, however, that there may exist very simple and over learned tasks, such as running or lifting, for which it would be difficult to have too high a level of arousal, in which case a linear relationship would also be predicted by the Yerkes-Dodson Law.)

One of the reasons for the intuitive appeal of the Yerkes-Dodson law is that its first postulate conforms to the common observation that athletes can be “too flat” or, on the other hand, “too psyched up” to perform optimally. This is a common concern of both athletes and coaches. Moreover, as we shall see, there is considerable empirical support for a curvilinear relationship between anxiety and performance on motor tasks. Indeed, Yerkes-Dodson derived their law from the results of studies with mice in which both arousal and task difficulty in navigating underwater mazes were controlled experimentally.

Both the Hull-Spence and the Yerkes-Dodson formulations relate performance to the general concept of arousal under the assumption that arousal states resulting from various motivational and emotional states are functionally equivalent. This assumption has been challenged by models that differentiate among motivational states in terms of the extent to which they generate approach versus avoidance cognitions and response tendencies or task-irrelevant responses.

Physiological arousal produced by engaging an approach motive like achievement motivation may be accompanied by entirely different cognitive and attention responses than arousal produced by an avoidance motive like anxiety. Research on task anxiety suggests that anxiety-generated cognitions tend to be self-oriented (rather than task oriented) and disruptive or problem-solving and attention processes (see Sarason, chapter 15, this volume). Our present concern is, therefore, with the effects of anxiety that are relevant to the sport environment, rather than with arousal in general.

Two research designs have been employed in research on the sport anxiety-performance relationship. The majority of studies have used between-subjects designs in which the performances of subjects differing in either trait or state anxiety have been compared. A smaller number of studies have utilized within-subjects designs in which both anxiety and performance are assessed under different conditions. It should be noted that a valid test of the inverted-U hypothesis requires
that at least three points on the arousal continuum be assessed, regardless of the nature of the research design. Likewise, at least two levels of task complexity are required to assess anxiety task complexity interactions.

A classic series of studies involving self-report, projective test, and physiological indices of anxiety was performed with sport parachutists by Walter Fenz and his colleagues. Measures of respiration and heart rate were obtained periodically from the time the skydivers arrived at the airport until they were about to jump. Performance rating was obtained from instructors.

High levels of performance were associated with a pattern of increasing physiological arousal as the jump approached, but a lowering or arousal to moderate levels just before as the jump. With experience, competent parachutists exhibited their “inverted-U” pattern of arousal increasingly earlier in the jump preparatory stage. Poor performers, on the other hand, continued to exhibit high levels or arousal. These findings suggest that on this task, high levels of anxiety at the point of performance negatively relate to performance, whereas moderate levels are associated with competent performance.

In another field study, Weinberg and Genuchi assessed the relationship between trait and state anxiety and the performance of collegiate golfers. Trait anxiety was assessed with the SCAT. The athletes completed the STAI-State scale just prior to competition on three different days of a tournament. The golfers were divided into low, moderate, and high trait anxiety groups on the basis of their SCAT scores. Although the three groups of golfers were similar in ability, their performance differed sharply during the anxiety-arousing tournament rounds.

The low trait-anxiety golfers (who had the highest state scores) performed best, and the high-SCAT athletes (who had the highest state anxiety scores) most poorly. On the first day of competition, the average performance of the low-anxiety group was five strokes better than that of the high-SCAT group. On the last day of the tournament, the difference between the groups increased to nearly seven strokes. The moderate-SCAT group had intermediate scores. The investigators reasoned that since golf is a precision sport requiring fine muscle coordination and great concentration, the optimal level of arousal for its performance would be quite low, and their results are consistent with that expectation.

To test the inverted-U hypothesis, Martens and Landers subjected high, moderate, and low STAI-Trait-anxious junior high school boys to a motor tracking
task under three levels of induced stress created by ego-involving conditions and threat of electric shock. A manipulation check indicated that the high, moderate, and low-stress conditions were successfully established.

Martens and Landers found that the subjects in the moderate stress condition performed best, supporting the curvilinear hypothesis. They also found that moderate STAI-Trait subjects outperformed the high and low trait-anxious groups, which also situational stress level, suggesting that the experimental manipulation did not differentially affect the two groups. This finding is consistent with earlier findings suggesting that threat of shock does not produce differential state anxiety in high and low STAI-Trait subjects.

In a follow-up study in which negative evaluation and ego involvement were used to create three levels of situational stress, Weinberg and Ragan found an interaction between trait and state anxiety on a motor task. High trait-anxious subjects performed best under high stress. State-anxiety measures indicated that the experimental manipulation had interacted with the subjects' trait anxiety to produce a moderate level of state anxiety. This study's results clearly support an optional moderate level of anxiety interpretation.

Men's basketball teams and players served as subjects to determine the role pre-game anxiety played in basketball game performance. The study involved four games in which State College competed against other small colleges in Maharashtra during the season. Performance in basketball was ascertained by field goal percentage, free throw percentage, and turnover per minute played and personal fouls per minute played. Twelve hypotheses were established to determine the effect played on basketball perf. Ormance, the impact of playing time, and the effect of being a game starter or non-starter. High levels of anxiety lead to poor performance in athletic competition.

Spielberger developed the State-Trait Anxiety inventory which assessed both state and trait anxiety. Rainer Martens' work served as the guiding and directing source of information. Two inventories measuring trait and state anxiety were managed to the players one-half hour prior to the games. The relationship between the anxiety level of basketball players and their performance in games indicated no significant levels. Players who possessed high levels of pre-game anxiety were apparently able to dissipate it once the game began, not reflecting the anxiety in their performance.
Turn over's per minute was the basketball performance indicator most consistently affected by anxiety, reaching significant levels in the following situations:
1. Players who participated over 20 minutes.
2. In the relationship between the lengths of time played, number of personal fouls and turnovers.
3. Game starters with anxiety represented by one test item and non-starters by seven test items.
4. All players with anxiety represented by five different test items.

It was suggested that further study of anxiety, other sports, other physical environments, other age groups, women's programs, the effect of the anxiety level of coaches, and determining what level of anxiety is optimal for player success in intercollegiate basketball.

**Trait Anxiety:**
A predisposition to perceive certain situations as threatening and to respond to these situations with varying levels of state baseball anxiety. Any tabulated loss of possession of the basketball by one player during an intercollegiate basketball game.

1. This could include a bad pass, fumbled reception, violation or charging personal foul. The study involved male basketball players from selected teams in District #2 and the state of Maharashtra.
2. The basketball games were analyzed for the season. All four basketball games involved only that season.
3. The statistics kept for the four selected games involved:
   a. Number of minutes each player competed
   b. Number of turnovers
   c. Number of personal fouls
   d. Field goals attempts and completions
   e. Free throw attempts and completions.

Each team utilized for this study played in programs with similar philosophies. Most of the scholarships in each of the respective schools are based upon the financial need of each player. Both anxiety inventories were given approximately thirty minutes prior to the start of each of the four intercollegiate games. Western Maharashtra State College players were given both inventories only prior to the first game studied, which was against Southern Maharashtra State College.
Over the past few years there has been an increasing awareness amongst sportsmen and coaches of the importance of psychological factors in sports. The world of sport abounds with examples of unexpected success or failure which on closer analysis suggest that psychological phenomena were at least partly responsible, e.g. the sometimes remarkable performances of lowly teams in championship matches.

The recognition of this influence is exemplified in many ways: by the acknowledgement of psychological factors in the analysis of sport in the media, by the efforts of coaches and sportsmen to gain knowledge of psychology and, significantly, by the active involvement of sports psychologists in the preparation of sportsmen for competition. This last development has taken many forms, ranging from the individual athlete independently seeking assistance, to the full-time employment of a psychologist by a team of athletes, e.g., the Brazilian soccer team and many sports teams in Eastern Europe.

Many, if not all, “psychological” influences in sport can be directly related to the sportsman’s experience of stress and his subsequent reaction to it. Stress has been defined in many ways but in the present context, it is perhaps best described as “a perceived situation which threatens the gratification of needs.” This implies strong ego-involvement in the “stressed” individual, and emphasizes both the link between stress and the emotional reaction and the fact that this reaction can have positive or negative effects.

For example, anxiety, a frequent consequence of stress, could lead to a deterioration in performance—a player “losing his cool”—or an increased determination to perform well. Hence, although the terms “stress” and anxiety are not synonymous, they both can exhibit a with problems and possibilities of anxiety measurement in sport as revealed by research at Maharashtra in recent years.

It is widely accepted that anxiety, both trait and particularly state, plays an influential role in the sports performance of individuals. At a trait level, it has frequently been found that the best athletes tend to be relatively low in anxiety. Anxiety-prone individuals, identified by questionnaire methods are not well represented among elite sports groups. Whilst this is of general interest it is perhaps more relevant to understand the kinds of relationship which exist between sports performance and the anxiety which it transiently generates.
With objectively in mind, early investigators tended to employ psycho-physiological measures of state anxiety in the sports context. However, more recent research has highlighted the inherent unreliability of such measures which has given a new status to the questionnaire approach. Of particular interest in this regard is Spielberger’s state-trait anxiety inventory which has the advantages of incorporating a state questionnaire along with the more usual trait aspect, and can be administered very quickly with minimal disruption of the preoccupied athlete. Such is not possible with psycho-physiological monitoring.

The difficulties of obtaining psycho-physiological measures of anxiety are well indicated by Reilly et al’s. study of anxiety and thrill on a fair-ground ride. Heart-rates of individuals strapped into a “roller-coaster” were monitored by means of radio-telemetry, and since the individuals were in a “resting” state, a fairly pure measure of “emotional reaction” was generated. However, there was no means of knowing from the heart-rate data whether the individual was anxious, thrilled, both or neither.

Post-ride data questionnaires considerably aided the interpretation of the heart-rate data; most subjects’ heart-rate appeared to be elevated by the relatively unrelated emotional reactions of anxiety and enjoyment. The conclusion is that if information is required about an individual’s emotional reactions, an excellent means is to ask him, providing he has no interest in giving misleading information.

Other Consequences of Athletic Anxiety:

Some young athletes are fortunate in that they develop effective ways of coping with potential sources of stress and Anxiety. Others, who are not so fortunate, are prone to suffer adverse psychological, behavioral, and health-related effects. Consideration is now given to these negative consequences of competitive Anxiety.

Effects on participation, enjoyment, and withdrawal from sports:

Youngsters are affected by competitive Anxiety in many different ways. Because of anticipated stresses, some children actually avoid playing sports. In one study, or lick and butter ill reported that 75% of a sample of 8 and 9 year-old sport nonparticipants indicated that they would like to compete, but were fearful of performing poorly or of failing to make a team. In a more recent study of 10 to 17 year-olds, pierce found that 26% of agency-sponsored sport participants, 26% of sport dropouts, and 32% of nonparticipants reported that various worries bothered them so much that they might not play in the future.
In addition to influencing the decision about entering a sport program, competitive Anxiety can detract from children’s enjoyment of sports. Youngsters who play for relatively punitive or critical coaches, perceive more pressure and negative responses from their mothers, feel that their parents and coaches are less satisfied with their overall sport performance, and view themselves as having less skill express less enjoyment from their participation and like their sport less. Furthermore, young athletes who feel that winning is the most important aspect of sports derive less enjoyment from their participation and are more apt to drop out.

Whether anxiety causes young athletes to withdraw from competition is another important issue. Poorly found that 33% of 10 to 15 year old youth soccer dropouts attributed quitting to an overemphasis on competition and negative coaching behaviors. Similarly, a study by Gould, Feltz, Horn, and Weiss of 10 to 18 year old former swimmers revealed that over half of the youngsters rated “did not like the pressure” as either a very important (16%) or somewhat important (36%) reason for dropping out, and many rated “did not like the coach” as a very important (20%) or somewhat important (24%) factor.

In a study of over 1000 age-group swimmers, Mcpherson, marteniuk, tihanyi, and Clark found that too much pressure, conflict with coaches, and insufficient success were among the reasons swimmers reported for why their teammates dropped out of competition. Finally, in a recent study of 8 to 17 year old wrestlers, a cords, performance expectancies, attributions, and sport values led Burton and Martens to conclude that youngsters appeared to drop out when their perceived ability was threatened by consistent failure. Existing evidence thus suggests that competition stress contributes significantly to the dropout rate in youth sports.

**Effects on physical well-being: illness and injuries**

A growing body of research literature is demonstrating positive, though modest, relationships between high levels of Anxiety and the onset of a variety of medical and psychological dysfunction in children. The unfortunate effects of severe competitive pressures are all too frequently seen in clinical reports of young athletes who develop Anxiety-related headaches, stomachaches, and dermatological problems.

A condition known as reflex sympathetic dystrophy is a particularly alarming and extreme example of a physical malady that may be linked with athletic Anxiety. This disorder involves an abnormal response of the sympathetic nervous system to
an injury like a sprain. An entire are or leg may swell up, turn blue, and become blotchy, while the muscles of the limb may atrophy and the bone may be reabsorbed.

In addition to the above, some data exist concerning the degree to which involvement in sports disrupts youngsters eating and sleeping patterns. Skubic’s survey of little and Middle League Baseball players revealed that 11% of the respondents experienced diminished appetite after competition. A remarkably similar Figure No. ure was obtained for a sample of junior elite wrestlers; 58% reported having “some” to “a lot” of difficulty sleeping the night before a match because of competitive Anxiety.

The most definitive data on sleep disruption are provided by the Michigan Youth Sports Study. This comprehensive survey included a statewide sample of 1,118 male and female youth sport participants. Of these children, 21% indicated that there were times when they did not receive enough sleep because of their involvement in sports.

Of the athletes experiencing loss, 46% rated worrying about performance as a contributing factor, and 25% indicated that being upset after losing was cause. It should be noted, however, that other sources of sleep disruption were not directly related to competitive stress. Moreover, youngsters’ sleep was disrupted somewhat less by sports involvement than by other achievement-oriented recreational activities.

The widely recognized contribution of life stress to the development of physical illness and psychological distress has stimulated research on the possible role of Anxiety in athletic injuries. Several studies have examined whether athletes who experience a high degree of “life stress” are at greater risk for athletic injury.

May, Veach, reed, and Griffey assessed life events, depression, and general well-being in 73 members of the U.S. Alpine ski team: these psychological factors were compared with subsequent surveys of general health, illness, and athletic performance. Higher scores on the life-change scales were clearly related to greater duration of ear, nose, and throat problems, headaches, musculoskeletal leg injuries, and sleep problems.

On the other hand, positive well-being was associated with a shorter duration of ear, nose, and throat problems, headaches, digestive problems, sleep disturbances, and neurological conditions. Overall, the psychological scales predicted seven of the top ten health and injury problems of the alpine skiers.
Additional evidence derives from research on football injuries. Studies have shown injury rates of 68-73% in athletes who had recently experienced major life changes, compared with rates of 30-39% in athletes who had not experienced such events. In another study of college football players, passer and sense obtained partial support for a relationship between injury and “object loss”.

**Anxiety before and after badminton competition:**

Examination of the individual before-after data discloses decreases and increases in A-State under all conditions and suggested the need for more sophisticated hypotheses about A-State changes in this kind of situation. Some of the “nuisance variables” which need to be considered are listed below:

1. The existence of “denial” sets in some players—representing an attempt on the part of the individual to convince himself that he is not anxious—an understandable and maybe subconscious strategy.
2. Increased A-State after winning could have resulted from a phenomenon broadly associated with success phobia. The personality of the player would be a key factor in determining the emotional reaction to victory. A high A-trait individual would possibly find unexpected victory quite traumatic.
3. Decreased A-State after losing could have resulted from the feeling that “the ordeal is over” or that certain sub-goals had been successfully achieved, e.g., managing to take a game off the eventual winner.
4. Prior knowledge of the opponent’s standard of play may have been an important factor in both before and after A-State level. Predicting what these levels might be on this evidence alone would be problematical.
5. It became apparent that the timing of the post-match administration is important. The psychophysiological reverberations persist for some time after the match, having the effect of counteracting the deactivation process. Concerning pre-match anxiety measurement Huddleston and Gill demonstrated that A-State increases as time to competition nears with a substantial increase being noted from the “pre-meet” to the event measure. This finding serves to emphasize the importance of collecting A-State data as close as possible to the start of the competition.
6. The perceived importance of the competition appeared to be a significant factor governing A-State reactions. There was some anecdotal evidence from
this tournament that female players took the tournament much more seriously than the males.

It was clear from this study that the possible combinations of factors which will determine A-State at any time are numerous, suggesting caution in the use of state measures to predict performance. Largely on the basis of this limited evidence, Sanderson and Ashton argued that A-State measures would be likely to be more useful when used in conjunction with in-depth analysis of the reasons for the existence of particular anxiety states. Such an approach, they maintained would be likely to encourage in the individual a sophisticated self-insight and more effective coping behavior in situations of stress.

An important omission of the above investigation was Spielberger’s complementary A-trait questionnaire, which would have allowed measurement of the relationship between transient and dispositional anxiety reactions, as well as the links between these measures and performance. Additionally, although it was found that reduction in post-competitive A-State appeared to be contingent upon success for ego-involved badminton players, it is also recognized that the criteria for “success” in sport may be complex and individual-specific.

For instance, if the probability of winning is assumed to be than the badminton player is clearly more hopeful of absolute success than, say, the cross-country runner. This raises questions about the nature of the relationship between performance in situations where there is one winner and many “losers” and state/trait anxiety measures. Accordingly a study was undertaken of trait and state anxiety reactions of cross-country runners.

Anxiety is present in the competitive sports and the good news is that it’s presence is not always negative. The way the dragon gets its power is by implying that its powers extend well beyond mere discomfort. The false alarm of anxiety leads, naturally enough, to the conviction that the panic and anxiety will surely cause grave consequences, such as heart attacks, strokes, seizures, madness, and other stress-related disorders even sudden death. Many psychologists reported that anxiety facilitates performance up to certain points and that beyond this level performance may decline. Psychological preparation for performance in sports is now recognized a part of athletic preparation (Barlow, 2002).
In this sports field, there are many conditions which generate anxiety-ridden behavior that have many implications for the players. Most of the time, many athletes players under potential stress are more anxious about failing to come to the social expectations than which might happen to them during performance.

In sport, competition has the tendency to increase the level of anxiety of athletes. Sport psychologists have shown priority interest on the importance of anxiety on performance. Many psychologists found that anxiety is the main psychology factor has a great influence on performance. Many researches showed that winning in a competition depends on how an athlete can control their anxiety levels. The main problem among athletes is they fail to control their anxiety.

The competitive anxiety has enjoyed a large prominence in the sport psychology literature, and is often cited as one of the most studied areas in the discipline. Collectively, these offer an interesting and informative insight into the relationship between competitive anxiety and performance, while separately each emphasizes different aspects of the association. Gould et al. (2002) presented an integrated perspective of the measurement of arousal, activation, anxiety, and performance. Since anxiety is a negative emotion, researchers have historically tended to focus on the potentially negative effects on performance. However, a theme that emerges from some of the reviews it was indicated that, under some circumstances, anxiety can have positive consequences in performance environments. Jones (1995) remarked that:

Competitive anxiety has enjoyed a large prominence in the sport psychology literature, and is often cited as one of the most studied areas in the discipline. It offers an interesting and informative vision into the kinship between competitive anxiety and presentations, while separately each emphasizes different aspects of the association. Smith discussed the re-conceptualization of trait anxiety in sport; Gould presented an integrated perspective of the measurement of arousal, activation, anxiety, and performance. Since anxiety is a negative emotion, researchers have historically tended to focus on the potentially negative effects on performance.

The role of anxiety in exercise and sports, and the relationship between anxiety and athletic performance are conflicting as well as confusing chiefly due to inconsistent technology and lack of agreement among scientist over the very meaning and concept of anxiety, its dimensions and methods of assessment. Anxiety is equated with fear participating and compositing sport-persons irrespective
of their sex and age tends to have variety of fears at almost all stages of their sporting career. Fear of doing poorly in fundamental motor and sports skill, anxiety over low level of anxiety in sport, apprehensions about outcomes of a competition is very common among performing athletes.

During playing situations, the sportsmen are by and large fearful to some degree which eventually affects their performances. A key issue pervading the literature that is of central concern to sport psychology researchers and practitioners alike is the relationship between anxiety and performance. Sport psychology is a division of psychology aimed at better preparing the mind of an athlete for competition. This section discusses some of the theories and models that allude to the potential positive consequences of this relationship. These include arousal-based explanations, the zone of optimal functioning hypotheses, multidimensional anxiety theory, catastrophe models and processing efficiency theory (Hanton et al., 2004).

i) Arousal-based approaches:

Anxiety has often been used as a synonym for activation and arousal which may not be wholly correct but we cannot escape this notion because of the vital physiological changes that occur during anxiety-state raising the activation-arousal level. Initial inquiries attempted to determine the anxiety-performance relationship through arousal-based explanations. Some Sportpsychologists estimated that the relationship between arousal and sports performance. Increases in arousal up to an ‘optimal’ level were suggested to result in positive performance gains, beyond which performance decrements occurred. Optimal levels of arousal were also suggested to be dependent on the type of task, with more complex tasks requiring lower arousal levels for optimal performance.

ii) Zones of optimal functioning (ZOF)

To overcome the limitations of the homothetic approach to the study of the anxiety–performance relationship, Hanin (1986) introduced an intra-individual idiographic method to explain how a given level of anxiety could lead to optimal performance. This approach was initially developed as a practical tool for helping athletes ‘get in the zone’ and determine their optimal levels of one-dimensional anxiety within certain limits or bands known as ‘zones of optimal functioning’ (ZOF) to maximize performance. Hanin proposed that every athlete possesses an optimal preperformance anxiety zone within which performance levels were greatest. Anxiety
levels below or above these bands were proposed to be consistent with inhibited performance. Dependent upon athlete preferences, therefore, high levels of competitive anxiety could lead to optimal performance. A number of investigations have partially supported the ZOF hypothesis.

**Role of anxiety in sports:**

Some facts under an anxiety as related to exercise and sport.

i) Without certain level of anxiety, there cannot be competitive performance. Neither too high nor low level of anxiety is conductive to athletic performance. The athletic individual gives out their best performance a mediocre level of anxiety.

ii) The threshold of optimal anxiety level differs athlete to athlete and from situation to situation in the game athlete. This situation intrigues the athletes the coaches and the sports psychologists.

iii) The rise in the level of performance and expensive in a sport the level of anxiety is said to decline this means that high caliber and inexperienced athletes are less anxious then novice and inexperience athletes.

iv) In various sports situations, the relationship between anxiety and performance is linear, in others. It is curvilinear probably depending upon what subcomponent is under focus.

v) Athletics skills and development of reasonable high level of anxiety in sport may be helpful in reducing anxiety. A long term engagement in sports is essential before one could expect encouraging results in mapping anxiety and to be more specific reducing trait anxiety.

vi) Situational anxiety is an environmental phenomenon and has a lot to do with external variables, which can be manipulated or even controlled in order to attenuate its effect.

vii) Pre-competitive anxiety is inevitable under all competitive situations and all athletes are affected by it more or less pre-competitive anxiety has may seriously detrimental effect on the performance of elite and experienced athletes.

viii) Motor skills acquisition and initiation to competitive sport, the subjects are found to be more anxious then the norm and their performance fluctuates too much because they encounter ‘stumbling blocks’ in the learning process.

Anxiety is equated with fear, participating and competing sports persons irrespective of their sex and age, tend to have variety of fears, at almost all stages of
their sporting career. The greater the resemblance between the practice conditions and competitive situations the better the athletes learn how to cope up with competitive anxiety. Cratty reported that conditions within athlete combined with his/her cognitive evaluations of the threat of competition and with the objective nature of competition itself work together to produce anxiety in athletes.

There is a general consensus that anxiety is both an affective and a pleasurable emotional reaction in which autonomic nervous system and glandular system play a crucial role. The level of anxiety in an athlete tends to rise prior to an athletic contest and repeated participation in competitive sport enable athletes to manage anxiety (Kamlesh, 2002).

In this investigation, the performance of cross-country runners was examined in the light of both trait and anxiety state scores, the latter being administered both pre and post-race. In correlating anxiety and performance data, competitive success was equated with absolute performance proficiency, i.e., a direct function of finishing position.

It was hypothesized that both trait and state anxiety would be positively related to this index of performance. Because of the greater impact match outcome was found to have had on state anxiety of female badminton players it was decided to monitor both male and female competitors in this study.

Subjects consisted of 38 randomly selected female runners aged between 18 and 41 years who were competing in the English Women’s Cross-Country Championships in 1978 and 26 males aged 19 to 31 from the holly mount international road race in 1978. In each case, runners completed a Spielberger trait questionnaire 1 hour before the race as indicated by circumstantial constraints and a state questionnaire within 15 minutes of the start of the race. A-State was again measured immediately after the athletes finished the race. The results were as follows:

1. Women’s National Championships: Correlation analysis revealed that A-trait was significantly related to pre-race A-State, which in turn was marginally related to race performance on the basis of the unidirectional hypothesis. This suggests greater control and composure in the better runners. Pre-and post-race A-States were significantly related.
Unlike the badminton research a useful distinction could not be made between winners and losers, but an attempt was made to distinguish between more or less proficient runners. To this end, subjects were divided into 2 approximately equal groups: group A, consisting of 20 athletes who finished in the first 55 places and group B, consisting of 18 athletes who finished between 68th and 158th place.

Pre-race A-States of the groups did not differ significantly. Similarly, post-match A-States did not differ, but matched pairs analysis revealed a significant post-race A-State reduction for the more successful group. The mean A-trait scores of the groups approximated to the combined mean score of 39.8.

2. Hollymount road race: it was found that A-trait was significantly correlated with race performance and, as was the case with the women, pre-race A-State was related to A-trait. Pre- and post-race A-States were found to be significantly different. The average A-trait of 7.6 compares closely with the average A-trait for the female runners.

The major finding is that there were clear post-race reductions in A-State for the high finishers in the women’s race and for the whole group in the men’s race. For the top five men, it was noticed that the A-State reduction was even more marked. In the light of previous findings that A-State reductions are associated with absolute success in badminton and basketball it is clear that cross-country running is in a different category in that winning is not the sole criterion of success.

The hypothesis that cross-country runners are likely to assign importance to and find comfort in the achievement of individual specific sub-goals, which leads to A-State reduction, irrespective of absolute achievement level, is given some support. A qualifying factor seems to be that low finishers in large fields of runners may have more difficulty in perceiving their performance as having redeeming features. Perhaps too it reflects ill-defined criteria of “success” amongst such individuals and unrealistic levels or aspirations. It is also likely that age or experience will affect subjective interpretations of quality of performance.

Elevated A-State levels post-competition would suggest that specific attention of coaches and mentors might need to be directed to athletes recognized as poor losers. The aim would be to develop positive coping behavior in the athlete which
would enable him to recover quickly from any competitive trauma associated with performing poorly.

Games and sports significantly differ from one another in still structure, organization, procedures, performance dynamics etc., they generates in the sports-personals is significantly different from sport to sport. For instance, the way of individuals competing in individual sports like wrestling, gymnastics, judo, track and field etc., anxiety is different qualitatively and quantitatively from the anxiety comforting team-game players.

**Importance of games and sports:**

Today sports has become a form of mass participation, many participate in sports activities, it is taking the shape of a profession to some with high skills, with ample financial benefits linked with high degree of popularity. Govt. of India has been making efforts to do something for the promotion of games and sports in the country.

For this purpose Govt. of India launched various sports scheme to developed the sports. Games and sports hold as a prominent place in modern life. Millions of people participate in sporting activities. Watch and read about them and spend money and time on sports related activities and equipment’s. The impact of sports in modern society has made it clear that sports are a very legitimate field of academic study (Freedom, 1987).

Relevant here is Sanderson and Gilchrest’s study which examined relationships between match outcome, anxiety reactions and causal attributions of squash players. The subjects of the study were 26 seasoned county standard players participating in important league matches; hence, ego-involvement could be assumed.

This assumption was supported by the anxiety reactions of players—significant pre-post-match decreases in state anxiety for winning players contrasted with significant increases in anxiety for losing players. No relationship was found between pre-match anxiety and performance. Correlation analysis of pre-and post-match state anxiety scores revealed a non-significant correlation for losers and a significant correlation for winners.

This suggests that, in spite of the significant increase in state anxiety for losers, the magnitude of the increase is individual specific. Winners on the other hand demonstrate significant reductions in state anxiety which is proportional to

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pre-match levels. It was interesting to observe the way in which the squash players ascribed responsibility for success and failure. Previous research has suggested that individuals take credit for positive outcomes by attributing success to internal factors such as personal ability and effort.

Hence, a winning athlete is quite happy to accept that his ability is instrumental in the outcome whereas a losing athlete is much less likely to explain his defeat in terms of his lack of ability. On the contrary, it is an unusual loser who does not have several excuses to explain his lack of success. Thus individuals tend to display “self-serving biases” in competitive ego-involving situations.

Sports activity loaded with competitive and co-operative spirits, gives rise to psychological stresses, especially when an athlete has to face an unexpected defeat. However, psychology has a crucial part to perform in sports especially in the field of competitive sports. Sports psychology includes a wide variety of factors that are important for the learning and performance process in various sports like volleyball, basketball and others.

**Anxiety and causal attributions:**

The players were asked to attribute causality for competitive outcomes to nine selected internal factors and nine selected external factors by completing a causality questionnaire which was administered 30 min. after the match. The main hypotheses were that winners would tend to attribute externally.

It was found that although winners indeed attributed more internally and less externally than losers, the latter still assessed internal attributes to be the most important determinants of match outcome and this was in spite of the significantly elevated post-match anxiety levels of losers with the associated need to protect self-esteem. In line with predictions from attribution

**Stress and anxiety sport:**

The importance of anxiety and other emotional and personality factors in sports competition has been recognized for many years Martens, 1971, 1975; singer, 1975). Consider the following observation of Howard S. Slusher in his influential book, man, sport and existence.

At it is in most aspects of life, anxiety is present in sport…each time man “takes the field, “he not only lives with anxiety, he embraces it. Sport encourages man to live with anxiety as opposed to the psychiatric school advocating the “cure” of anxiety.
In a similar vein, Rainer Martens has raised cogent questions regarding the influence of anxiety-related cognitive processes on performance in sports competition: “what causes athletes to become uptight? Why do some athletes ‘rise to the occasion’ in intense competition while others ‘buckle under the pressure?’ what’s in the head’ is just as important in determining a winner, and in having competitive sports be an enjoyable experience.”

Moreover, research in sports psychology has kept abreast of advances in relevant psychological theory. For example, although the state-trait distinction has been only recently accepted in personality research, professor eager on made this a central theme more than a decade ago in her keynote address at a wingate institute symposium on psychological assessment in sport, specifically, Geron called for identifying and investigating individual traits, personality profiles and investigations in a variety of sports from recreational jogging to professional marathons.

The main goal of this chapter is to present a conceptual formwork for examining the extensive research literature on stress and anxiety in sports. Recent psychometric developments in the measurement of anxiety as a transitory emotional state and individual differences in anxiety proneness as a personality trait are also discussed.

The findings of several representative studies in which the STAI was used to assess anxiety are briefly reviewed to provide examples of contemporary research on stress and anxiety in sports settings. a bibliography of sports psychology studies in which the STAI was used to assess state and trait anxiety in provided in the Appendix to this chapter.

**Stress, threat, and anxiety: definitions and concepts**

Stress refers to a complex psychobiological process that consists of three major elements: stressors, perceptions or appraisals of danger, and emotional reactions. The stress process is generally initiated by situations or circumstances that are perceived or interpreted as dangerous, potentially harmful, or frustrating.

Thus, the relationship over time as a function of the amount of perceived threat. Thus, the relationship among the three major elements of the stress process may be conceptualized as consisting of the following temporal sequence of events:

**Stressor—perception and appraisal of threat—s-anxiety**

The term stressor refers to situations or circumstances that are characterized by some degree of objective physical or psychological danger. Stressful
circumstances are ubiquitous; they are encountered every day and at every stage of human development. There is even evidence that stress before birth influences both the mother and the fetus, and may contribute to obstetric complications and birth defects.

Infants and young children meet unavoidable pressures in weaning and toilet training, and in the process of learning social skills and acquiring a family relationships present new challenges to contend with throughout the life span. Retirement and old age not only stages of life, but are themselves among the pervasive sources of stress in modern society.

The concept of threat refers to an individual’s perception or appraisal of a situation as potentially dangerous or harmful. Reactions to a particular stressor will depend on the degree to which it is seen as threatening. Threat appraisals are influenced, of course, by the objective characteristics of a situation, and objectively dangerous stressors are realistically appraised as threatening by most people.

The experience of threat is, essentially, a state of mind which has two main characteristics:
(1) it is future oriented, generally involving the anticipation of a potentially harmful event that has not yet happened;
(2) it is mediated by complex mental processes, i.e., perception, thought, memory and judgment, which are involved in the appraisal process.

Threat appraisals of present or future danger serve an important function in producing emotional reactions that mobilize an individual to take action to avoid harm. But even when there is no objective danger, the perception or appraisal of a situation as threatening transmits the essential message of stress, which results in the arousal of an anxiety state.

An important characteristic of S-Anxiety is that it varies in intensity and fluctuates over time. Calmness and serenity indicate the absence of S-Anxiety; tension, apprehension, nervousness catastrophic thoughts, and disorganized panic behaviors are associated with very high levels of S-Anxiety.

The physiological changes associated with increased S-Anxiety include: elevated heart rate and blood pressure; faster, shallower, more intense breathing; dryness of the mouth; dilation of the pupils; erection of the hair; and increased perspiration. In contrast to S-Anxiety, trait anxiety may or may not be manifested
directly in behavior, but can be inferred from the frequency that an individual experiences elevations in S-Anxiety.

People who are high in T-Anxiety are more anxiety-prone, i.e., they perceive and appraise a wider range of situations as more dangerous or threatening than do individuals who are low T-Anxiety. Since high trait anxious people are more vulnerable to stress, they experience S-Anxiety reactions more frequently, and with greater intensity, than do individuals who are low in T-Anxiety.

An adequate theory must also differentiate between the stimulus conditions that evoke anxiety states, the mental processes that mediate the perception or appraisal of particular stressors as threatening, and the psychological defenses that serve to reduce the intensity of S-Anxiety reactions once they have been aroused.

Trait-state Anxiety theory provides a general framework for examining the major variables in research on stress and anxiety, and suggests possible relationships among these variables. In addition to delineating the properties of S-Anxiety and T-Anxiety as psychological constructs, the theory specifies the characteristics of stressful situations that evoke differential levels of S-Anxiety in persons who differ in T-Anxiety, recognizes the centrality of appraisal in evoking anxiety states, and notes the important role of defense mechanisms in serving to eliminate or reduce S-Anxiety.

High levels of S-Anxiety are experienced as intensely unpleasant. Therefore, if an individual cannot avoid a stressor or lacks the skills needed to cope with a threatening situation, he may be overwhelmed with S-Anxiety, and may initiate defensive processes to reduce this intensely unpleasant emotional state. Defense mechanisms involve psychobiological processes that in some way defense mechanism are successful, the circumstances that evoke anxiety are seen as less threatening, and there is a corresponding reduction in S-Anxiety. But the processes devoted entirely to reducing S-Anxiety while the actual source of the perceived danger, i.e., the underlying circumstances that caused the S-Anxiety reaction, remains unchanged.In sum, the concept of stress refers to a complex psychobiological process that consists of a sequence of temporally ordered events. This process may be initiated by any external event or internal stimulus that is perceived or appraised as dangerous or threatening.

**Measurement of stress and Anxiety:**
Over the past 20 years, the social readjustment rating scale has been widely used to investigate the relationship between stressful life events and physical illness, with impressive results, but these findings are only of marginal significance for sports psychology. Several new scales designed to assess stressful life events and the ‘hassles’ that are experienced in daily life may eventually prove more useful in sports psychology than the SRRS.

Although most studies of the stress process in sports have focused on the athletes’ emotional reactions rather than the characteristics of the stressor situation, Martens has developed the sports competition Anxiety test which was specifically designed to assess the Anxiety experienced in sports settings.

The extensive research literature on the relation between Anxiety and performance has especially important implications for sports psychology. In psychological research on learning and performance, the Taylor Manifest Anxiety Scale, one of the earliest measures of trait Anxiety, has been used in numerous studies. In general, persons with high MAS scores perform more poorly on difficult learning tasks than persons with low Anxiety, but on simple or easy tasks the performance of individuals with high Anxiety was at times better than that of those with low Anxiety.

The IPAT Anxiety Scale was constructed by Cattell and Scheier to assess Anxiety in clinical situations, but this scale has also been widely used in research. Despite differences in the definitions of Anxiety that guided the development of the MAS and the IPAT Anxiety scale, and in the methods of test construction and item format, these scales are highly correlated, providing evidence that T-Anxiety is a stable construct, and that the MAS and the IPAT scales are essentially equivalent measures.

The affect adjective check list was developed by Zuckerman and his associates to measure both state and trait Anxiety. The “general” form of the AACL measures T-Anxiety; respondents check adjectives such as tense, nervous and calm to indicate how they generally feel. In responding to the “today” form of the AACL, which measures S-Anxiety, subjects check the same adjectives according to how they feel on the day the test is given.

There is substantial evidence of the validity of the AACL “Today” form as a measure of S-Anxiety, but the AACL General form typically correlates only moderately with other standard measures of T-Anxiety, such as the MAS and the
IPAT. Therefore, the validity and usefulness of the AACI as a measure of T-Anxiety seems questionable.

**Research On Stress And Anxiety In Sports:**

Research on stress and anxiety in sports has increased dramatically over the past decade. This research has included investigations of anxiety effects on football, basketball, badminton, racquetball and tennis players, swimmers, runners, gymnasts, fencers, jugglers, and persons engaged in a wide variety of physical activities, ranging from routine exercise to climbing ladders, riding bicycles, and performing on treadmills. Individual differences in anxiety among participants in different sports and the impact of various forms of exercise on anxiety level have also been examined.

The findings in sports psychology research provide substantial evidence that the STAI S-Anxiety scale is a sensitive index of the changes in Anxiety level produced by practice, physical activity, perceived or experienced success or failure, and level of competition. While T-Anxiety has also been found to be related to some of these variables, situational factors and the skill and experience of an athlete seem to have greater impact on performance than individual differences in general Anxiety proneness. A number of investigators have reported that higher levels of S-Anxiety are experienced under game conditions than during practice. Decreases in S-Anxiety have also been reported as a function of practice.

Milillo also found a positive relationship between the amount of strenuous motoric activity required in a particular sport and level of S-Anxiety. State Anxiety was highest in marathoners lowest for archers, with tennis players falling in between these groups. In contrast, Morgan and his colleagues have consistently observed that S-Anxiety decreases as a function of various physical activity, and similar findings have been reported by other investigators.

The experience of failure in sports activities generally results in higher levels of S-Anxiety. Noyes observed that S-Anxiety increased in college students given feedback that implied failure on two physical performance tasks. Scanlan and Martens and Gill have also reported increases in S-Anxiety following failure experiences. On the other hand, Sanderson and Ashton observed a significant decrease in S-Anxiety in female badminton players following a winning match.

Tennenbaum and Milgram compared the state and trait Anxiety of students who voluntarily participated in competitive sports with the Anxiety of non-competitors.
Additionally, a large positive correlation was found between S-Anxiety and the increase in heart rate evoked by the stress of competition, i.e., the number of heart beats measured immediately prior to a competitive sports event was much higher than the competitors’ heart rate when relaxed.

Over the past decade, Hanin and his colleagues have carried out extensive experimental investigations and clinical studies with Soviet athletes. This work has included the development of a sequence of diagnostic procedures for determining each athlete’s zone of optimal functioning, that is, the optimal level of S-Anxiety before a forthcoming contest, and the anticipated level of S-Anxiety on the first day of the contest.

Each athlete’s schedule of training activities was “. . . organized to facilitate optimization of Anxiety level according to the individual’ ZOF. These investigators found that the management of stress for most athletes required a reduction in the actual level of S-Anxiety, rather than increasing Anxiety, which was accomplished by modifying the athletes’ attitude toward training and competition. Managing stress by regulating the athletes’ anxiety level so that it falls within the ZOF generally facilitated achieving a superior performance level.

In most of the studies briefly described above, the impact of situational factors on S-Anxiety has been emphasized. It should be noted, however, that many sports psychologists are interested primarily in the effects of stress and anxiety on performance.

In general, the relationship between Anxiety and performance in sports competition approximates the inverted U-shaped function described many years ago by Yerkes and Dodson. The recent work by Hanin and his colleagues further demonstrates that superior performance is associated with an “optimal level” of pre-competition Anxiety.

In all competitive sports activities, anxiety plays a vital role, because anxiety become negative, automatically athlete cannot performance. So, that in higher level sports competitive a coach of athlete should have proper knowledge and strategies for managing the anxiety.

1.1 Statement of the problem:

The researcher has been very active sportsmen during his anxiety in sport career. Also he has represented national competition in Amravati University. Thus,
he has great interest in the field of games and sports. While going through the related literatures and newspapers he found that in various games and sports some psychological factors such as, fear, aggression, stress etc. affect largely on sports performance of sports players.

In modern competitive sports players are also interacting with the fear, anxiety, stress and threats before various levels of competition. When players and athletes are exposed to continual stress, threats and fear it directly interact to their sports performance in particular game. Keeping in mind the aforesaid facts, researcher planned to carry out this problem stated as under; “A study of the Anxiety level of interuniversity players of various games in Maharashtra”.

1.2 Objectives of the study:

1. The objectives of the study were to find out the anxiety level of Maharashtra interuniversity players in various games participating from Maharashtra state.
2. To compare the level of anxiety between the inter-university players of various games.
3. To find out the level of anxiety in male and female of Inter-university players in different game.
4. To compare the anxiety level between the male and female of Inter-university players.
5. To examine anxiety level between the pre and post-game of inter-university players of various games.

1.3 Significance of the study:

i) This study might be certain helpful to players, coaches, anxiety in sport director to know the level of anxiety of interuniversity players.

ii) The present study might be helpful to the Inter-university players to know their actual level of anxiety before and after the competition.

iii) The present study might be helpful to know the coaches and players to adapt the solution for the treatment of anxiety.

iv) The study also might be helpful to know the coaches which interuniversity players are more anxious before and after the competition.
1.4 Hypothesis:
For this study the following hypotheses are as under;

i) It is hypothesized that players would be anxious towards competition.

ii) It is hypothesized that the players of various games anxiety level would be differ according to their performance.

iii) The anxiety level of female players would be more than the male players.

iv) It is also hypothesized that pre-game anxiety of the players would be more than the post-game.

1.5 Delimitations:
The study was delimited to the following aspects.

i) The authenticity of the data depends upon the honesty of the selected Subjects.

ii) No motivational techniques were used to collect data which might have affected the results.

iii) Religious and environmental factors would not be considered.

iv) Socio-economic status of the selected subjects would not be considered.

1.6 Limitations:

i) The study was limited to measure anxiety level only.

ii) The study was limited to both male and female players of Maharashtra interuniversity (in Ashwamedh tournament).

iii) The age of the subject ranging from 17 to 28 years.

iv) The study was limited to the players of Maharashtra Universities who participated in interuniversity Ashwamedh tournament in the session 2012-2013 and 2013-2014.

v) The study was limited to the game Kabaddi, Kho-Kho, Athletic, Volleyball and Basketball.

vi) The study was limited to the players of quarter final match in each game.

1.7 Definition Of Related Terms

Anxiety in Sport:
Some years ago through an odd set of occurrences I found myself coaching wrestling at the university of Montana. The team’s 147-lb wrestler (I will fictitiously name him jimmacey) was a young man with great ability. In fact, Jim knew considerably more about wrestling than I did, although he never shoved that fact in my face. Jim’s teammates admired his talent and early in the season elected him team captain.

Our first meet of the season was at Maharashtra university in cheney. After weighing in and seeing Jim’s opponent, I was confident that he would have little difficulty winning. One to two hours before the meet, however, I noticed that jim was very quiet and not his usual smiling, loquacious self. I inquired if he was feeling ill, but he assured me he was not.

That evening we defeated Maharashtra, 26-20, giving our team its first victory of the season and me my first win as a head coach. But the win was not totally satisfying. Jim won his bout, but by a narrow margin. He wrestled as if he were a different person. Non-aggressive throughout the bout, Jim permitted his opponent to “take the bout to him.”

Rather than Jim wrestling his usual aggressive, offensive style, he was defensive. It was only his superior skills and a weak opponent that permitted him to eke out a 5-4 win. For several hours after the match he remained quiet and atypically withdrawn. I sensed that he sensed his teammates’ and coach’s bewilderment as to why he did not “mop up” his opponent.

As the season progressed, I came to know Jim Marcey much better. He became incredibly uptight before every bout regardless of how easy or difficult his opponent was. Jim was not enjoying wrestling due to this enormous competitive stress and about midway through the season indicated his desire to quit. After several lengthy conversations, I convinced Jim to stay with the team, although in retrospect I am not sure it was the correct thing to-do.

At the time I was convinced that the team needed him and that he would be an excellent wrestler if he could overcome his anxieties. I recall talking at length with him about anxiety; I could easily relate and empathize with Jim because I had also experienced high states of anxiety when I wrestled. Although I always believed that these high states of anxiety helped me wrestle better, in Jim’s case anxiety was unquestionably detrimental. Through conversations with Jim, I sought to remove the
pressure that he felt; but I could not do this because the pressure was self-imposed. Jim, I felt, feared failure so much that he almost panicked before and during a bout. He could not get control of his emotional state as he approached competition.

Although I wanted to help, as a young coach I simply did not know what to do. I did not understand Jim’s problem well, nor did I have a clear conception of how to alleviate his extraordinarily high state anxiety. Jim never overcame his competitive anxiety, and he completed the season with a mediocre record, far poorer than his ability warranted.

My inability to help Jim and my frustration from a number of related experiences in sport directed me to the then-obscure field of sport psychology. I believed then and today that what goes on in an athlete’s head is just as, if not more, important than are physical talent and skill in determining success and enjoyment in competition sport. Consequently, I terminated my short coaching career to pursue my curiosity about sport psychology.

Because of the Jim Maceys of the world, sport psychologists need to answer such questions as the following: what causes athletes to become uptight? Why do some athletes rise to the occasion in intense competition while others choke under the pressure? What is the short- and long-term effects competitive stress? How does competitive anxiety affect the performance of the athlete? Can athletes learn to control their emotional states, and will this help them optimize their performance? What can be done to alleviate hyper anxious states? What can be done to prevent athletes from burning out as a result of the tremendous psychological stress from intense competition over extended periods of time?

Although researchers have made significant progress in recent years toward answering these questions and understanding competitive anxiety, a great deal of work remains to be done. Researchers have sought to identify sources of anxiety and learn how different individuals perceive these sources. Moreover, this improved understanding of the causes of competitive anxiety has allowed sport psychologists to examine the mechanisms that athletes use to cope with competitive anxiety and the consequences of failing to develop such coping skills.

**Competitive anxiety terminology:**

A discussion of competitive anxiety requires the establishment of a common language that allows precise and efficient communication. When students undertake
the study of a physical or biological science, they usually encounter a completely new vocabulary with specific nomenclature to describe the new phenomena they are studying, however, when studying a social science, students must frequently learn new meanings to words they already know, giving these familiar terms precise meanings to describe specific phenomena. Anxiety, stress, arousal, and competition are terms familiar to all of us, but scientific rigor requires that precise definitions for these complex phenomena replace the vague, general meanings that these words have in our everyday vocabularies.

To clarify further the conceptual distinction between state and trait anxiety, Spielberger makes the analogy between anxiety and energy. According to this analogy, state anxiety is like kinetic energy, or an ongoing reaction taking place at some level of intensity, whereas trait anxiety is comparable to potential energy, or a latent predisposition for a kinetic reaction to occur if triggered by appropriate stimuli.

**Cognitive Versus Somatic anxiety:**

As early as the mid-1960s, researchers were beginning to view anxiety as a multidimensional rather than a unidimensional construct. Liebert and Morris first hypothesized that anxiety comprises cognitive-worry and emotional-arousal components. Subsequent research by Endler, Davidson and Schwartz and Borkovec has identified similar components of anxiety that have since been termed cognitive anxiety and somatic anxiety, a distinction applied to both state and trait anxiety.

Although cognitive and somatic anxiety are hypothesized to be conceptually independent, Morris, Davis, and Hutchings have noted that they likely cavalry in stressful situations because these situations contain elements related to the arousal of each. Cognitive and somatic anxiety refers to behavior along two dimensions: intensity and direction.

**Arousal**

Both cognitive and somatic anxiety are closely associated with the concept of arousal, which refers to the intensity dimension of behavior, the state of the organism varying on a continuum from deep sleep to intense excitement. Other terms, such as activation and energy mobilization, have been used to describe the same dimension. Thus, arousal refers only to the intensity dimension of behavior, whereas cognitive and somatic anxiety refer to both intensity and direction and are often aroused by cues in the environment that are perceived as threatening.
Stress

Stress has historically been one of the most ambiguous psychological constructs in the behavioral sciences. Thus, McGrath’s work conceptualizing stress as a process was particularly important in clarifying this semantic jumble. According to McGrath, four events must be considered in studying stress as a social psychological process: Furthermore, the consequence of such an imbalance must be perceived as important, so that adverse consequences will be anticipated for failure to meet these demands.

Spielberger’s state-trait anxiety concepts and Morris, Davis, and Hutching’s cognitive-somatic anxiety concepts are both easily incorporated into McGrath’s stress paradigm. Trait anxiety is an important personality disposition that describes how a person is likely to perceive the environment demand-response capability discrepancy. State anxiety represents the momentary anxiety and the current discrepancy between environmental demands and response capabilities. Thus, cognitive and somatic anxiety represent separate components of both state and trait anxiety.

Note that in McGrath’s definition of the stress process it is not stated that objective demand must exceed response capability; there must only be an imbalance. Normally we think of stress in terms of an overload; demands are made on us, creating uncertainty that we can meet them adequately. Stress may occur, however, when the objective environment does not demand enough, or when there is an underload rather than an overload. In recent years a substantial body of literature has shown that stress like effects may occur from sensory deprivation, social isolation, or stimulus impoverishment.

Spielberger uses the term stress somewhat differently to describe a stimulus event in an overall process that he terms anxiety. In the temporally ordered sequence of events specified by this anxiety model, a particular level of stress is perceived to involve a specific level of danger, thus prompting a state anxiety reaction of quantifiable magnitude. Thus, stress in Spielberger’s model is limited to being physically or psychologically dangerous as threat, whereas he terms the response component of the model the state anxiety reaction.

The significant differences between the McGrath and the Spielberger models are the terms they use to describe their overall processes and the individual components of their models. In essence, they are describing the same process, but
Spielberger refers to it as anxiety, whereas McGrath calls it stress. Moreover, they use different terms to describe the stimulus, cognition, and response components of their models. Spielberger calls the stimulus stress, whereas McGrath refers to it as objective demand. Spielberger uses the succinct term threat to describe the subjective cognitive appraisal process that McGrath refers to as an imbalance perceived between demand and response capability.

**Competitive anxiety model:**

After having carefully evaluated both models, we have chosen to develop an independent model of competitive anxiety that borrows from the terminology of both Spielberger and McGrath. Although the Spielberger and McGrath models are in essence the same, we prefer to use McGrath’s term stress rather than anxiety to describe the overall process for two reasons.

Thus, stress here will refer to the overall process that is associated with the occurrence of state anxiety, not only the objective stimulus event that elicits the perception of threat. We also have borrowed although the objective environmental demand need not necessarily be perceived as dangerous or threatening.

Spielberger’s definition of threat, however, cogently labels the perception of imbalance between perceived environment demand and response capability and will be used to describe this cognitive appraisal variable. Finally, Spielberger’s term state anxiety reaction will be employed to describe the response component of this model.

**Glossary of competitive anxiety terms:**

Terminology in the anxiety literature has not been used consistently because individual researchers have often used different terms to represent the same construct. As a quick reference for readers, the competitive anxiety terminology as defined in this chapter and used throughout the book is summarized in this section.

**Competitive trait anxiety:**

Competitive trait anxiety is a situation-specific modification of the more general A-trait construct. Competitive A-trait is defined as a tendency to perceive competition situations as threatening and to respond to these situations with A-state. The operationalization of the competitive A-trait construct is important in understanding behavior in sport, particularly in understanding which competitive situations are perceived as threatening and how persons respond to the threat. The sport competition anxiety test, SCAT has been developed to assess competitive A-trait,
and the construction of SCAT was based on four significant theoretical developments in the field of personality:

- The adoption of an interactional theory of personality that predicts behavior better than do trait or situational paradigms
- The development of situation-specific A-trait instruments that have superior predictive power compared to general A-trait scales
- The trait-state theory of anxiety, which distinguishes between A-trait and A-state

General Anxiety Versus Situation-Specific Anxiety:

Many behavioral scientists have examined the relationship between general A-trait and various behaviors but have failed to obtain anticipated results. One group of psychologists have suggested that the problem lies with poor measurement technology that attempts to study anxiety as a unitary, general phenomenon. Instead, they claim that anxiety is a learned response to situations.

In other words, one person may become quite anxious when taking a math test, sitting in a dentist’s chair, or delivering a speech but not when competing in a hockey game, performing at a piano recital, or taking a driver’s examination. Thus, we can better predict behavior.

Mandler and Sarason pursued this approach in studying test anxiety in academic situations. Their research has shown improved behavioral prediction when a person’s situation-specific anxiety disposition and other relevant situational characteristics are known. As a result of this improved anxiety scales to measure audience anxiety, fear of negative evaluation and social avoidance and distress, and fear of snakes, heights, and darkness. After reviewing some of the research using situation-specific A-trait instruments, Spielberger concluded that “in general, situation-specific trait anxiety measures are better predictors of elevation in A-state for a particular class of stress situations than are general A-trait measures”.

Form this theory it is clear that the focus of future research must be on the stimuli or antecedent conditions that evoke A-state, on the cognitive processes that interpret these stimuli as threatening, and on the behaviors that are manifested in response to the perceived threat.
Competitiveness and anxiety

Earlier in this chapter we considered the issue of what motivates an individual to take part in a sporting activity. We will now take this a stage further by considering what is meant by competition and how as individual may demonstrate competitiveness and how, linking with arousal, this can lead to anxiety.

Measuring competitiveness

As competitiveness is concerned with an individual striving for excellence and comparing oneself with others, it may be quite hard to ascertain whether a sports player is very competitive or only moderately competitive. Gill and Deeter attempted to find a way to measure it and they developed the sport orientation Questionnaire to measure individual’s competitiveness and competition behavior.

Cross-Cultural Research _ Competitiveness

Another way that it is possible to double-check methods of measuring competitiveness is by carrying out cross-cultural studies. Nelson and Kagan studied children from different areas within those countries. They found that:

- Indian children were more competitive than Mexican children
- Urban children in a number of countries were more competitive than rural children
- Highly competitive children gave up the chance of a reward for themselves in order to keep other children from getting similar rewards.

They proposed that cultural differences in competitiveness are linked to child-rearing patterns. For example, Indian mother’s reward their children according to the child’s achievement, whereas Mexican mothers praise and encourage their children regardless of outcome.

Orlick carried out a further cross-cultural study. The study aimed to introduce co-operative broomball to urban children in southern Canada and to intuitchildren in the northwest territories. The game had no goalkeepers, goals counted for the other team and after scoring a goal the player changed teams. The findings were that:
Northern Canadian children were more positive about the game
Girls reacted more positively than boys to co-operative games
Younger children were more positive than the older children.

What is competitive anxiety?
Competitive anxiety is the motive to avoid failure in a sport-specific setting, or the tendency to become anxious and worried about failure in sport. A great deal of the work carried out within sports psychology has focused on individual differences anxiety. Some sportspeople become physically ill before a game, whilst others remain very calm.

Theoretical basis of competitive anxiety
Rainer Martens have carried out a great deal of research to enable him to develop a theory and a test for competitive anxiety. His work has been built around four main principles:

1. Interaction approach – he believes that there is a strong interaction of personality and situational factors in sport.
2. State-trait anxiety distinction – Spielberger further developed the interaction approach by distinguishing between the relatively stable personality characteristic of trait anxiety and the immediate, changeable feelings associated with state anxiety.
3. General V. specific anxiety – highly trait anxious people tend to become anxious in all stressful situations but this isn’t always equal. Therefore a situation-specific measure of trait anxiety is more useful for predicting state anxiety than a general measure of trait anxiety. Martens believed that a measure of sport-specific trait anxiety would be the best way of predicting state anxiety in sport competitions. He therefore proposed the idea of competitive trait anxiety.
4. Competition – Martens proposed a model of the competitive process which looked at the idea of competition as a process for comparison of sporting ability and therefore the main source of situational anxiety comes from the evaluation of our performance.

Martens, Vealey and Burton propose that anxiety has three components:
• Cognitive state anxiety – worrying and experiencing negative thoughts
• Somatic state anxiety – perception of bodily symptoms
• Self-confidence – expectations of success or failure.

Participants had to say for each of the items whether they experienced it not at all, somewhat, moderately or very much.

How can each aspect of anxiety affect our performance?
Somatic state anxiety – an example of how this may be displayed is the athlete who ‘froze’ on the starting blocks. Many sportspeople show muscle tension or poor co-ordination when they experience high levels of state anxiety. Those who already have high levels of state anxiety will display more state anxiety. An example of this is a study carried out by Weinberg and Hunt with two groups of students: high and low trait anxious. The students had to throw tennis ball at a target, their accuracy was observed and the electrical activity in their muscles was monitored. They found that high trait anxious students showed more somatic state anxiety and used more energy. The increase in anxiety affected their performance.

Cognitive state anxiety includes the fear of failure, difficulties in attention and concentration, faulty decision-making and worries about performance. Ziegler believes that cognitive state anxiety can create a negative cycle.

Measuring Test Anxiety
In order to investigate the effect of a game-based assessment on test anxiety, we set up a baseline test to measure the test anxiety level of a student in a standard test environment. During a lesson prior to the first aid module, we subjected the students to an unannounced paper-and-pencil test, immediately followed by a test anxiety questionnaire.

Classifications and Measurement
Classification
As is true of many behavioral constructs in the analysis of stress, we may use a variety of classificatory schemas based on the magnitude, quality, or temporal dimensions of the phenomenon. The latter include the duration of the stressor, the time after the stressor impacts on the person in whom the consequences stress appear, and the interposition of other stressors between the event and the measurement of the original event.
There are no widely accented general behavioral taxonomies and this also applies to stressors. Many studies and the resultant model incorporated data implying that chronic stressors interact or add to the existing stress. Even laboratory studies in which participants are required to perform simple tasks may involve an interaction of stressors. When a participant is experiencing stress at home, as a caretaker for a sick elderly person, for example, it may affect his or her laboratory perratory stresses. Or the experience of a hassle from a traffic jam may be influenced by the chronic stress the person may be experiencing in his or her marriage.

H. Weiner uses three categories of events that induce stress:
(1) Natural occurrences and disasters (epidemics, snowstorms, tornadoes);
(2) Man-made disasters;
(3) Personal and individual experiences (bereavement, divorce, injury, retirement).

These categories are descriptive, and they are primarily illustrations of the great variety of situations that can give rise to stresses. Some are expected, and a person can make preparations to respond to them, as in retirement, while others are unexpected, such as an earthquake; some are shared with other persons, as in a snowstorm during which social supports may be present, while others affect only one person at a given time.

Another classification based on the potential seriousness, both qualitative and temporal, of the situation was proposed by chriboga. He differentiated:
(1) Micro level stressors (e.g., mislaying a social security check, being caught in a traffic jam);
(2) Mezzo level stressors (e.g., divorce, bereavement),
(3) Macro level stressors (e.g., war or economic recession).

His classification relates to several are similar to Lazarus and Folkman's concept of hassles; mezzo level stressors correspond to the life events initially investigated by Holmes and Rahe. Finally, it should be noted that in psychogerontological research, little attention has been given specifically to macro level stressors, though they have usually been invested implicitly when cohort effects were analyzed. Studies such as those of elder on the depression cohort did, however, examine macro level stressors. Moos and Swindle point out the importance of chronic long-term stressors, such as physical ailments or poverty that may
frequently be at the root of the problems associated with life events, such as a sudden, acute health crisis.

Aged individuals, especially, are more likely to experience chronic rather than acute life events labeled as stressors. Wheaton combined temporal and quantitative dimensions in distinguishing six different types of stressors:
1) Life events that usually is self-limiting;
2) Chronic stressors;
3) Daily hassles;
4) Macro or systems stressors’
5) Nonevents, when anticipated pleasant events do not happen;
6) Traumas, such as a major fire or sexual abuse during childhood.

The main characteristic in the last category is the overwhelming impact of the event. There is a considerable overlap between the various schemas that have been proposed. The problem with all of these classifications is the difficulty of disaggregating various stressors. The absence of a satisfactory schema for classifying stressors makes generalizations very difficult and necessitates analyzing each type separately.

Measurement Of Stressors

In general, we have relatively few problems in identifying biological stressors: there are normative data on environmental temperatures, noise levels, infectious agents, and sleep deprivation that commonly in due stress. In contrast, it is difficult to identify and measure psychosocial stressors, and the absence of a satisfactory classificatory system precludes the development of a meaningful metric. As in other areas of psychology, laboratory studies have been used as analogs of real-life stresses, but here, too, comparisons are tenuous. Requesting that a study participant perform a difficult task may be viewed as a stressor. However, at what level of difficulty does the task become a stressor?

Differences between various types of stressors, discussed previously, will lead to different methods of assessment, and the technique used reflects a certain theoretical orientation. As early but still widely used scale by holmes and rahe, the social readjustment rating scale, consisted of checklist of 43 various life events, such as death of a spouse, loss of a job, or marriage. The SSRS was standardized on a young population. Each event was weighted so that death of spouse was assigned
100 points, retirement 45, and so forth. The greater the number and importance of these life events, the latter determined from normative samples, presumably, the greater the degree of “stress.” The total “stress” was based on the sum of the individual items. Several similar life-inventory scales were constructed later; some were even standardized on older people (Amster & Krauss, 1974; Plomin, Lichtenstein, Pedersen, McGleen, & Nesselroade, 1990).

There have been numerous challenges to this approach. First, it is not practical to ample, previous abuses by a spouse or employer, or estrangement from a child; such an extensive questionnaire would exhaust the attention span of a responder. Second, the stress induced by the various items resample, as the number of divorces has increased in our society, along with the expectation that this might occur, the stress induced by this event may have diminished.

One possible explanation that the authors offer is that in previous generations, soldiers either would not admit having psychological disorders or the symptoms of stress were expressed somatically. Third, the context of the situation affects the experience of the stressor. The impact of fasting in order to reduce weight is different from fasting when a person has no food. Fourth, some of the items in the checklist of events that have been used to measure stress are confounded; for example, a physical illness is listed as a stressor, but it may be the consequence. Finally, individual events may not be discrete: losing a job may lead to a divorce, or previous illnesses may be superimposed on more recent disabilities.

Turner and Wheaton reviewed the literature and included a bibliography of various life-event inventories, including several for older persons. An alternative technique is to use interviews that permit probing the severity of a specific event and including of unique stressors. Several standardized interview measures of life events have been developed (wethington, brown, & Kessler), but this technique is also subject to a variety of measurement problems.

While most life events recorded by checklists occur infrequently, the measurement of common, relatively minor, everyday stressors was developed by Lazarus and his students, based on Lazarus’s theory, it measures the perceived stressfulness associated with common everyday occurrences, hassles, and positive events or uplifts; the focus is on the perception or interpretation of an event. Death of a spouse receives a high stress score on the SRSS, but according to Lazarus, the amount of stress depends on the surviving spouse’s perception of the event: the
stress following the sudden death of a presumably healthy person is usually much greater than the passing of a chronically ill person who has been suffering for years.

The hassles scale consists of 117 items measuring commonly occurring, everyday annoyances such as misplacing something, the arrival of unexpected company, or not having sufficient time for family. Items measuring uplifts include receiving compliments and a child showing some developmental progress. In an initial study with adults ages 45-64 years, DeLongs, cone, daikon, folkman, and Lazarus found that the hassles scale correlated significantly with self-ratings of overall health, somatic symptoms, and self-rated energy levels (being worn out at the end of the day or feeling lassitude), as well as a measure of major life events. The correlations, however, were modest, in the 2-3 range. Numerous studies on various older populations have used some versions of the SSRS and the Hassles Scale or only one of these scales and related them/it to diverse measures of mental and/or physical health. It should be noted that the Hassles Scale and several related instruments were not standardized on older people.

Landreville and Vezine obtained data from 200 community-dwelling volunteers ages 55 years and older on a revised version of the SSRS and a Hassles Scale similar to that used by Kanner, but items that physicians and psychologists rated as being possible symptoms of physical or psychological disabilities were not included in the scale. The participants also responded to a checklist of specific physical ailments, an overall assessment of their health and psychological well-being. In a multiple regression analysis, 49% of the variance of physical well-being was attributable to hassles, self-rated health, and limitations of activity. Life events over a 3 year period did not predict physical well-being. Psychological well-being was best predicted by daily hassles and age, and the correlation between frequency of daily hassles and life events was only. Most studies found that several variants of the SSRS and hassles scale are related to health, though the two types seem to measure different kinds of stress.

The hassles scale seems to predict more labile indicators of stress. Beginning with the initial study by Delongis, most researchers have reported, not surprisingly, that major life events influence daily hassles, though as landreville and vezina reported, the correlations between the scales may be low; much depends on the specific contents of the scales. With refinements in the hassles scale and the use of older samples than in the original standardization study of delongis, in which data
from 45 to 64 year old adults were used, the relationship between measures of 
hassles and life events was reported to be higher.

For example, aldwin reported an r of between life events and hassles, 
Russell and cutrone obtained an r of 54, and fry an r of. These represent modest 
relationships that seem to indicate the interaction of stressors ( i. e., persons 
experiencing stress from life events are more likely to perceive hassles than those 
without major stressful life events). These findings support pearlin contention that 
stressors proliferate. It is also the application of the classical frustration aggression 
hypothesis that several aversive stimuli may have an additive effect. Finally, it is the 
“rediscovery” of the commonsense folk psychology wisdom that it is “the last straw 
that broke the camels back.”