

PROMINENT FACTORS IMPACTING SPORTS PERFORMANCE

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Abstract

Modern sport is all competition and competition in any field of life has serious psychological implications. No one, much less an athlete, can win or even except to win competition without preparing himself or herself mentally along with training body. Unfortunately, “too many athletes and coaches still try to develop the human capacity for sport performance by physical conditioning” (Schilling, 1993), but ‘most scientists are now convinced that several physiological processes such as oxygen consumption, metabolism, energy mechanism etc., are directly related to man’s perceptual, cognitive, and psychological process, making athletic training for competition a psycho-physical affair’ (Kamlesh, 2007). It is now well-recognized that sport is much more than muscle training and capacity for oxygen consumption.

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INTRODUCTION

Modern sport is all competition and competition in any field of life has serious psychological implications. No one, much less an athlete, can win or even except to win competition without preparing himself or herself mentally along with training body. Unfortunately, “too many athletes and coaches still try to develop the human capacity for sport performance by physical conditioning” (Schilling, 1993), but ‘most scientists are now convinced that several physiological processes such as oxygen consumption, metabolism, energy mechanism etc., are directly related to man’s perceptual, cognitive, and psychological process, making athletic training for competition a psycho-physical affair’ (Kamlesh, 2007). It is now well-recognized that sport is much more than muscle training and capacity for oxygen consumption.

In all games and sports, athletes react to practice and competition situations. Some overreact and so they are more tense and aggressive than others, some under react so that they do not prepare themselves well and wilt under pressure. Some athletes are high on arousal, and some are low. Some need to be psyched up, aroused and activated and some need to be psyched down i.e. exert control on their emotions, aggression, anxiety and fears.

Some psychological qualities essentially required for being competitive and winner are inherited by athletes but most of them are developed and trained through systematic strategic and serious training, sustained practice and progressively increasing exposure of athletes to competitive situations. This is what makes psychological preparation for competition a complex phenomenon. According to German sport psychologists, psychological training of athletes, by and large in all sports, has four major dimensions as given below:

- (1) **Cognitive training** including perception training, concentration training and mental training.
- (2) **Sensory-motor training** including reaction training, coordination training and rhythm training.
- (3) **Motivation training** including goal-setting, goal programming and actual motivation; and
- (4) **Psycho-regulation training** including breath control, self-instruction and imagery, besides activation and autogenic training.

All top level athletes acknowledge the important role psychological preparation plays in performance enhancement. In several experiments, it has been shown to produce impressive gains in performance when carried out alongwith physical practice.

Performance in competitive sport is influenced by hundreds of physical, physiological and psychological factors and conditions within and outside the body. Some of them are genetic (for example, genotype and phenotype of an individual) and most of them environmental (climatic, geographic, seasonal, educational and socio-cultural). While genetic factors (height, anthropometric measurements) are fixed, rigid and non-modifiable, environmental factors such as learning, training, motivation, attitude etc., can be manipulated, modified, directed and influenced so as to produce desired effects.

Kamlesh, (2006) has listed attitudes, expectations, tensions, anxieties, confidence, over-emotional arousal, concentration, motivation, mental training and spectator influence as most crucial factors influencing performance. He has stated that eighty percent of problems of top athletes are centered on the strategies and techniques of handling anxiety, aggression and controlling over-arousal.

As already pointed out, psychological factors crucial to athletic performance come in great variety, and these are sport-specific also. The degree to which they are present in a sports person or they are developed by him, differ from sport to sport and also from individual to individual in the same sport. Based on the review of literature, as also personal experience, in this chapter only four psychological variables i.e. Anxiety, Aggression, self-efficacy and self-concept were taken up.

ANXIETY

The most talked about psychological variables affecting athletes during competition are anxiety and aggression. Anxiety is generally defined as a psychobiological emotional state or reaction that can be distinguished most clearly from other emotions such as anger or sadness by its experiential qualities. It can be manifested physiologically (sweaty palms, increased heart rate and respiration) or cognitively (worry, self-doubt). It is now well-known that athletes who experience high anxiety have poorer performances than those who do not report experiencing high levels of anxiety. An anxiety state consists of unpleasant feelings of tension, apprehension, nervousness, and worry, and activation of the autonomic nervous system. The physiological manifestations of anxiety generally include increased blood pressure, rapid heart rate (palpitations or tachycardia), sweating, dryness of mouth, nausea, vertigo, irregularities in breathing, muscle tension, and musculo-skeletal disturbances such as restlessness, tremors, and feelings of weakness (Spielberger and Rickman, 1990).

The contemporary sport anxiety literature indicates that there are two dimensions of anxiety, namely **state anxiety** and **trait anxiety**.

(a) State Anxiety

Spielberger (1972) described state anxiety as an existing or current emotional state characterized by feelings of apprehension and tension. State anxiety can be seen as a multidimensional psychological construct. Martens et al. (1990) opined that these multidimensional facets of state anxiety can be grouped into two broad concepts: cognitive anxiety (cognitive worry) and somatic anxiety (emotional arousal). Cognitive anxiety is defined as the mental component of anxiety. It is caused by negative expectations about success or by negative selfevaluation (Craft et al., 2003). In other words, '**cognitive anxiety** is the fear from anticipated consequences of failure' (Hardy and Parfitt, 1991). A form of cognitive anxiety, worry, has been shown to consistently decrease performance (Sarason, 1984). Correspondingly, Burton (1988) found anxiety to be related to performance in a negative trend in swimmers. In comparison, somatic anxiety is the physiological and affective element of anxiety that develop directly from arousal. **Somatic anxiety** is the physiological component of anxiety. It is caused directly by stimulation or arousal of the autonomic systems. In other words, somatic anxiety is the component that reflects the perceptions of the psychological stress to the physiological response (Craft et al., 2003). Somatic anxiety has been shown to impair performance on tasks involving precision and accuracy (Sarason, 1984). Burton (1988) has indicated that somatic anxiety is related to performance in an inverted U relationship.

(b) Trait Anxiety

Trait Anxiety is known as a predisposition to perceive certain events as threatening or non-threatening across situations (Spielberger, 1972). A trait is part of the personality, which influences behaviour. Trait anxiety is the normal level of personal anxiety. It is a personality factor that predisposes a person to view competition as more or less threatening (Scanlan, 1986). A relationship exists between a person's trait anxiety and a person's state anxiety. Those who score high on trait anxiety measures experience more state anxiety in highly competitive, evaluative situations (Spielberger et al., 1970).

For decades, sport psychologists have studied the relationship between anxiety and performance. The inverted U hypothesis was the first study to explain the relationship (Yerkes and Dodson, 1908). The inverted U hypothesis believes that increase in arousal lead to increase in performance up to a certain point. Once at this optimal point, further increases in arousal lead to a decline in performance. Theories such as the drive theory (Hull, 1933), the zone of optimal functioning (Hanin, 1978), reversal theory (Kerr, 1985), and the catastrophe phenomenon (Hardy and Parfitt, 1991) have been proposed to explain this phenomenon. The drive theory states that performance is linked to arousal in a direct linear relationship (Hull, 1933). Therefore, as arousal increases so does performance. The zone of optimal functioning proposes that each athlete has an optimal arousal level (Hanin, 1978). The optimal level of arousal is individual and specific for each athlete. The reversal theory suggests that how an athlete interprets arousal may influence performance (Kerr, 1985). To perform optimally an athlete wants to have high positive psychic energy and low negative psychic energy. The catastrophe model predicts that somatic arousal is related to performance in an inverted U relationship when cognitive anxiety is low (Hardy and Parfitt, 1991). However, if cognitive anxiety is high than somatic anxiety will result in a rapid decline in

performance. Investigators generally agree that anxiety is multidimensional and its two components (i.e., somatic and cognitive) have different influences on performance (Martens et al., 1990). The multidimensional anxiety theory predicts that cognitive state anxiety is negatively related to performance (Burton, 1988). It also predicts that state anxiety is related to performance in an inverted U relationship.

AGGRESSION

The use of the word aggression is somewhat confusing. The term aggression is employed to describe angry violent behavior with intent to hurt a person or cause damage to property. Aggression is a behaviour that is intended to cause harm to another person. That harm could be psychological and/or physical.

According to Cratty (1989) aggression is behaviour and actions that usually seek to inflict psychological and/or physical harm, either on another person or on an individual's possessions or dear ones. Bredemeier (1983) defined aggressive behavior in sport as the intentional initiation of violent and or injurious behavior. 'Violent' means any physical, verbal or nonverbal offense, while 'injurious behaviors' stand for any harmful intentions or actions.

Precisely:

- Aggression is an act not a cognitive state.
- Aggression is not accidental; it is an intentional act to harm.
- Aggressive acts involve both bodily and psychological harm.
- Aggressive acts involve only living beings; harm to objects does not count as aggression.
- The receiver of aggression does not want to get hurt.

Aggression is classified as **Hostile Aggression** and **Instrumental Aggression**.

(a) Hostile Aggression

Hostile aggression comprises those acts or behaviours, which really cause physical and psychological harm to the opponent. In hostile aggression the primary aim of the aggressor is to inflict injury on the opponent and make him suffer (Kamlesh, 2002). It can be verbal or physical or both. In this type of aggression, the player is angry and primarily bent on physically harming the opponent. 'Although such behaviors have been linked to team success' (Caron et al., 1997; Huang et al., 1999), hostile aggression is particularly controversial. It is not clear if it improves performance by increasing arousal to an optimal level or causes it to deteriorate by distracting the player from the task at hand (Cox, 2002).

(b) Instrumental Aggression

Instrumental aggression, on the other hand, denotes actions that reflect simply trying-hard and employing strong tactics without accompanying desire to injure another person (Kamlesh, 2002). Instrumental aggression refers to behaviour that uses aggression to achieve a particular goal and is not used for the purpose of hurting another individual.

The competitive nature of sport ensures that aggressive behaviour will often be seen. However, some aggression is desirable in sport and some is unacceptable. Aggression usually involves an attempt to harm the opponent physically and/or mentally. In sport we can consider an act to be aggressive if the intention is to harm a person outside the laws of the event, such as punching an

opponent in football. This is an example of hostile aggression and is totally unacceptable. Another form of aggression occurs when a player uses aggression not primarily to hurt the opponent, but as a means to an end. This is known as instrumental aggression and occurs, for example, when pushing an opponent out of the way in order to receive the ball. Both hostile and instrumental aggression, however, fall outside the accepted rules of most sporting activities and would not be encouraged.

SELF-EFFICACY

Self-efficacy is the belief that one is capable of performing in a certain manner to attain certain goals (Ormrod, 2006). It is a belief that one has the capabilities to execute the courses of actions required to manage prospective situations. Unlike efficacy, which is the power to produce an effect (in essence, competence), self-efficacy is the belief (whether or not accurate) that one has the power to produce that effect. For example, a person with high self efficacy may engage in a more health related activity when an illness occurs, whereas a person with low self efficacy would harbor feelings of hopelessness.

Self-efficacy beliefs are not judgments about one's skills, objectively speaking, but rather are judgments of what one can accomplish with those skills (Bandura, 1986). In other words, self-efficacy judgments are about, what one thinks one can do, not what one has done. These judgments are a product of a complex process of self appraisal and self-persuasion that relies on cognitive processing of diverse sources of efficacy information (Bandura, 1990). Bandura (1977, 1986) categorized these sources as past performance accomplishments, vicarious experiences, verbal persuasion, and physiological states. Others have added separate categories for emotional states and imaginal experiences (Marsh and Jackson 1980).

Performance accomplishments are the most influential source of efficacy information because they are based on one's own mastery experiences (Bandura, 1997). One's mastery experiences affect self-efficacy beliefs through the cognitive processing of such information. If one has repeatedly viewed these experiences as successes, self-efficacy beliefs will increase; if these experiences are viewed as failures, self-efficacy beliefs will decrease. Furthermore, the self-monitoring or focus on successes provides more encouragement and enhance self-efficacy more than the self-monitoring of one's failures. One must be careful, however, not to become complacent by success. Bandura suggests that letdowns after easy successes and intensifications after failure are common sequences in competitive struggles. The continued setting of challenging goals and the positive reactions to substandard performances help to elevate the intensity and level of motivation.

Kimble (1988) suggested that the ability to form self-efficacy increases with age, intelligence, education and socio-economic level. Studies on children's concepts revealed that there is a pattern of development similar for all children, though the time needed to developed concepts and the level of development attained will depend partially upon the child's intelligence and partly upon opportunities for learning. Many conclusions from various studies have been drawn on the relationship of self-efficacy and intelligence. It has been found that intelligent players have rich or strong self-efficacy while dull players have poor self-efficacy.

It has found that players with good self-efficacy are less anxious and are judged to be better in mental health. More theorists assert that self-efficacy is changeable, as it is a product of social and

psychological factors such as socio-economic condition, life experiences and life stresses, mental health, anxiety and certain other social and personal factors effect the self-efficacy to a large extent. Social cognitive theory

Psychologist Albert Bandura has defined self-efficacy as our belief in our ability to succeed in specific situations. Your sense of self-efficacy can play a major role in how you approach goals, tasks, and challenges. The concept of self-efficacy lies at the center of Bandura's social cognitive theory, which emphasizes the role of observational learning and social experience in the development of personality. According to Bandura's theory, people with high self-efficacy - that is, those who believe they can perform well - are more likely to view difficult tasks as something to be mastered rather than something to be avoided.

SELF CONCEPT

Self-concept is the cognitive or thinking aspect of self (related to one's self-image) and generally refers to "**the totality of a complex, organized, and dynamic system of learned beliefs, attitudes and opinions that each person holds to be true about his or her personal existence**" (Purkey, 1988). Franken (1994) states that "there is a great deal of research which shows that the self-concept is, perhaps, the basis for all motivated behavior. It is the self concept that gives rise to possible selves, and it is possible selves that create the motivation for behavior" (p. 443). Franken (1994) suggests that self-concept is related to self-esteem in that "people who have good self-esteem have a clearly differentiated self-concept.... When people know themselves they can maximize outcomes because they know what they can and cannot do". It would seem, then, that one way to impact self-esteem is to obey the somewhat outworn cliché of "Know thyself."

We develop and maintain our self-concept through the process of taking action and then reflecting on what we have done and what others tell us about what we have done. We reflect on what we have done and can do in comparison to our expectations and the expectations of others and to the characteristics and accomplishments of others (Brigham, 1986; James, 1890). That is, self-concept is not innate, but is developed or constructed by the individual through interaction with the environment and reflecting on that interaction. This dynamic aspect of self-concept (and, by corollary, self-esteem) is important because it indicates that it can be modified or changed. Franken (1994) states "there is a growing body of research which indicates that it is possible to change the self-concept. Self-change is not something that people can will but rather it depends on the process of self-reflection. Through self-reflection, people often come to view themselves in a new, more powerful way, and it is through this new, more powerful way of viewing the self that people can develop possible selves".

There are a several different components of self-concept: physical, academic, social, and transpersonal. The physical aspect of self-concept relates to that which is concrete: what we look like, our sex, height, weight, etc.; what kind of clothes we wear; what kind of car we drive; what kind of home we live in; and so forth. Our academic self-concept relates to how well we do in school or how well we learn. There are two levels: a general academic self-concept of how good we are overall and a set of specific content-related self-concepts that describe how good we are in math, science, language arts, social science, etc. The social self-concept describes how we relate to other people and the transpersonal self-concept describes how we relate to the supernatural or unknowns.

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