

Strategies for Attaining and Sustaining Peak Performance in Sports and Games

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Abstract

The place of sports and games in the modern society cannot be over-emphasized. This is because these two recreational activities are not only important aspects of modern life but are also parts of everyday engagements of a large number of people cutting across age, gender, race, religion and profession. As sports and games gained increasing popularity and global attention, so do the proportion of people involved in it rose steadily over the years. It has therefore become imperative to direct academic attention to these activities. One of the key aspects of study in sports psychology, and specifically sporting behavior, is 'performance' which is used to measure the objective ability of the sports man or woman. The focus of this paper is the strategies employed by individuals, groups and institutions to attain and sustain peak performance in sporting and game activities.

Introduction

Sports and games are major recreational activities in human societies from time immemorial. This is evident in the civilization history of many ancient societies such as the Greek, the Babylonian and the Egyptian civilizations. This is also reflected in the history of many traditional societies in Nigeria. For instance Ijakadi, (wrestling), Ayo (game) are important parts of socio-cultural realities of many traditional Yoruba societies. In the traditional African societies, sports and games are designed solely for recreational activities.

Wrestling is also a common pastime among the igbo people and are practiced occasionally with little or no monetary values attached. But as human societies progressed through the ages, these activities also progressed in value and importance. Today, sports and games have become important part of social institutions affecting various aspects of life viz-a-viz religion, economy, politics and even education. Globally, sports is one of the richest sectors in the world today and some notable sportsmen and women are rated as among the most wealthy individuals in their countries and globally. Aside, their immense wealth, successful sportsmen are classified among the most highly rated personalities in today's world (Maccionis, 2008), Ronaldo, Serena Williams, Mohammed Alli, Akeem Olauwon.etc

From the foregoing, it is obvious that sports and games as recreational activities have assumed important position in modern society. According to Reilly, Clarys & Stibbe (1993), sports and games are of great interests to billions of people globally; watching or playing a game had provided series of benefits to a large number of people:

- It is a means of promoting oneness, unity and social integration in a seeming divided society.
- It is a source of economic viability for millions of participants and stakeholders in the sector - players, officials, management, host community and even government which collect taxes and also own sport clubs.
- It is a means of leisure or enjoyment for those attending or participating in it.
- It provides psychological relieve to people who are stressed in the course of daily activities.

An important area of study for sport psychologists is 'performance'. Technically, the interest in performance arouse of the fact that performance is virtually the most important aspects of sports and games. Various studies in sport psychology have shown that virtually all sports and games require a high level of mental and physical performance which invariably also hinged on various factors (Junge, et al., 2000). In other words, various factors have been generally identified as needed to achieve high performance in sports and games. The present paper seeks to analyze the important factors through which high performance can be attained and sustained in sports and games activities. In order to have a better understanding of the direction of the presentation, attempt is made here to clarify some key concepts in the discussion.

Conceptual Clarifications

Sport Defined

Sports and games are physical activities in which people compete against each other according to agreed rules. The words 'Sport' comes from the Old French word, *desport* meaning 'leisure', with the oldest definition in English from around 1300 being 'anything humans find amusing or entertaining'(Harper, 2008). Other meanings include gambling and events staged for the purpose of gambling; hunting; and games and diversions, including ones that require exercise (Webster, 1967). Roget's defines the noun sport as an "activity engaged in for relaxation and amusement" with synonyms including diversion and recreation (Roget, 1995). The singular term 'sport' is used in most English dialects to describe the overall concept (e.g. 'children taking part in sport'), with 'sports' used to describe multiple activities (e.g. 'football and rugby are the most popular sports in England'). American English uses 'sports' for both terms. The precise definition of what separates a sport from other leisure activities varies between sources. The closest to an international agreement on a definition is provided by Sport Accord, which is the association for all the largest international sports federations (including association football, athletics, cycling, tennis, equestrian sports and more), and is therefore the de

facto representative of international sport. SportAccord uses the following criteria, determining that a sport should:

- Have an element of competition.
- Be in no way harmful to any living creature.
- Not rely on equipment provided by a single supplier (excluding proprietary games such as arena football).
- Not rely on any "luck" element specifically designed into the sport.

They also recognize that sports can be primarily physical (such as rugby or athletics), primarily mind (such as chess or scrabble), predominantly motorized (such as Formula 1 or power-boating), primarily co-ordination (such as billboard sports), or primarily animal-supported (such as equestrian sport). There has been an increase in the application of the term "sport" to a wider set of non-physical challenges such as electronic sports, especially due to the large scale of participation and organised competition, but these are not widely recognised by mainstream sports organisations.

Games Defined

Wittgenstein (1953) was probably the first philosopher to address the definition of the word game. In his *Philosophical Investigations* (1953/2002), Wittgenstein argued that the elements of games, such as play, rules, and competition, all fail to adequately define what games are. From this, Wittgenstein concluded that people apply the term game to a range of disparate human activities that bear to one another only what one might call family resemblances. As the following game definitions show, this conclusion was not a final one and today many philosophers, like Thomas Hurka, think that Wittgenstein was wrong and that Bernard Suits' definition is a good answer to the problem (Wittgenstein, 1953). French sociologist Roger Caillois, in his book *Les jeux et les hommes* (Games and Men) (1957) defined a game as an activity that must have the following characteristics:

- Fun: the activity is chosen for its light-hearted character
- Separate: it is circumscribed in time and place
- Uncertain: the outcome of the activity is unforeseeable
- Non-productive: participation does not accomplish anything useful
- Governed by rules: the activity has rules that are different from everyday life
- Fictitious: it is accompanied by the awareness of a different reality

Other definitions

- A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome (Katie Salen and Eric Zimmerman, 2003).
- A game is a form of art in which participants, termed players, make decisions in order to manage resources through game tokens in the pursuit of a goal (Greg, 1994) According to this definition, some "games" that do not involve choices, such as Chutes and Ladders, Candy Land, and War are not technically games any more than a slot machine is.
- A game is an activity among two or more independent decision-makers seeking to achieve their objectives in some limiting context (Clark, 2003).

- At its most elementary level then we can define game as an exercise of voluntary control systems in which there is an opposition between forces, confined by a procedure and rules in order to produce a disequilibrium outcome (Elliot Avedon and Brian Sutton-Smith).
- A game is a form of play with goals and structure (Kevin J. Maroney).
- To play a game is to engage in activity directed toward bringing about a specific state of affairs, using only means permitted by specific rules, where the means permitted by the rules are more limited in scope than they would be in the absence of the rules, and where the sole reason for accepting such limitation is to make possible such activity (Bernard Suits).
- When you strip away the gender differences and the technological complexities, all games share four defining traits: a goal, rules, a feedback system, and voluntary participation (Jane McGonigal).

Performance Defined

Performance is how well a person does a particular job or activity. In this case, how well a sportsman or woman does a particular sporting activity. Performance is goal-oriented. That is, action meant to attain specific objective or target. Peak performance among sportsmen is therefore efforts taken to attain the goal of best performance.

In business, sports, and other daily activities "to perform" is to do something up to a standard – to succeed, to excel. In the arts, "to perform" is to put on a show, a play, a dance, a concert. In everyday life, "to perform" is to show off, to go to extremes, to underline an action for those who are watching. The accomplishment of a given task measured against preset known standards of accuracy, completeness, cost, and speed. In a contract, performance is deemed to be the fulfillment of an obligation, in a manner that releases the performer from all liabilities under the contract. In the twenty-first century, people have never before live by means of performance.

The term "performance" has become extremely popular in recent years in a wide range of activities in the arts, in literature, and in the social sciences. As its popularity and usage has grown, so has a complex body of writing about performance, attempting to analyze and understand just what sort of human activity it is. [...] The recognition that our lives are structured according to repeated and socially sanctioned modes of behavior raises the possibility that all human activity could potentially be considered as "performance," or at least all activity carried out with a consciousness of itself. [...] If we consider performance as an essentially contested concept, this will help us to understand the futility of seeking some overarching semantic field to cover such seemingly disparate usages as the performance of an actor, of a schoolchild, of an automobile. (Marvin, 1996: 4-5)

According to Erving

A performance may be defined as all the activities of a given participant on a given occasion which serves to influence in any way any of the other participants. Taking a particular participant and his performance as a basic point of reference, we may refer to

those who contribute to the other performances as the audience, observers, or co-participants. The pre-established pattern of action which is unfolded during a performance and which may be presented or played through on other occasions may be called a "part" or a "routine." These situational terms can easily be related to conventional structural ones. When an individual or performer plays the same part to the same audience on different occasions, a social relationship is likely to arise. Defining social role as the enactment of rights and duties attached to a given status, we can say that a social role will involve one or more parts and that each of these different parts may be presented by the performer on a series of occasions to the same kinds of audiences or to an audience of the same persons. (Erving, 1959: 15-16).

Factors that Determine Performance in Sport and Game Activities

The following are some important factors that can enhance peak performance in sports and games:

Personal/Micro Factors

Personal cum micro factors are important performance factors which are directly related to the individual actor and are important determinants of peak performance. It focuses on individual factors such as consistency, practice, goal setting, morale level, etc. Barth and Zempel (2004) argued that factors of goal setting, self-imagery, relaxation, and self-talk have influence on the performance of sport men and women.

Social/Macro factors

Societal factors include the various practices that could encourage people to engage effectively in sporting activities. These include:

- Provision of facilities that will encourage and enhance participation in sporting activities.
- Provision of motivation for sportsmen and women.
- Entrenching sports and games in the educational curriculum.
- Societal recognition of successful sportsmen and women.
- Provision of sanctions and rewards for meritorious and erring sportsmen respectively.
- Discovering and developing individual talents.
- Quality of coaching.
- Method of recruiting athletes.
- Sport counseling methods (Barth & Zempel, 2004; Junge, et al., 2000).

Mental/Psychological

Many sport psychologists have identified the importance of the mental state of the individual as an important determinant of attaining and maintaining peak performance in sporting activities. Sport psychologists, such as Burton & Raedeke (2008); Vealey (2007); Williams (2001); Gucciardi, Gordon and Dimmock (2009) have focused on individual psychological factors such as goal setting, relaxation, imagery, and self-talk) and their influences on the attainment of peak performance in sports and games. They also believed that mental skills help players and coaches to increase performance during practice and

competition and affect the athletes' success in their tournament or game. For example, goal setting improves playing skill, techniques, and strategies for peak performance.

Strategies for Attaining and sustaining Peak performance in Sports and Games

The ultimate goal of every sportsman and woman is the attainment of victory which is only possible through peak performance. In this section of the paper, we shall discuss some important strategies that could be adopted to attain and sustain peak performance in sports and games.

Adequate financial incentive for sportsmen and women: In Maslow's (1943) hierarchy of human needs, physiological needs are the lowest, followed by safety/security, self belongingness, self esteem and self actualization at top. Financial incentive is an important factor for motivating human beings at least for certain level of improved performance. Motivating sportsmen with financial incentive would improve performance, although only to certain level.

Improving human relations: Human relations technique provides answer to the question: how do I motivate my employees to work well? The same question is relevant for improving performance in sports. When the relations between the sports administrators and the sportsmen are conflictual, performance is negatively affected. For instance, when the sportsmen have grievances against the officials and the management, they tend to perform poorly. Therefore, to improve performance, there is the need to smoothing out all conflicts and establish sound friendly relationship between sportsmen and officials and among the sportsmen themselves.

Favourable sporting environment: It has been proved that quite often, poor performance has been caused by conflict in the sporting environment. For instance, sportsmen have been known to perform very poorly when they had to operate in a very harsh weather. Again, when the social environment is not conducive (for instance, when the spectators are jeering and booing the players)

Contingency factor: Evidence attests that improvement in performance can be obtained with one technique in one situation and a different one in another situation where the first technique did not work. It is therefore obvious that there could be no single panacea for motivation towards improved performance.

Improving sports administrative style: Different administrative style would produce different results with regards to performance in sports. For instance, where the administrative style is organistic- loosely defined responsibilities and relationship, free communication and co-operation across the existing structures, would produce higher performance than in administrative style with mechanistic style- clearly defined duties, responsibilities and authority, specified chains of command and structured channels of communication. *Participatory scheme for sportsmen and women. When people are

involved in the decision of issues which concern them, they tend to respond well to ensure the successful implementation of such decisions. Participation of sportsmen in sports administration has the following advantages:

- It will satisfy sportsmen needs and demands and enable administration to implement its policies more smoothly, meeting less resistance and will consequently lead to improved performance .
- It will enable the sports administrator to make fuller use of the expertise, knowledge and contributions which each sportsman can offer to lead to improved performance.
- It will allow differing opinions to be expressed and decisions made which will be achieved by compromise between interests of different groups, thereby avoiding conflict at later stage.
- It will allow sportsmen to have influence over their own situation and will improve both quality of their sporting lives and satisfaction in doing their sporting activities.

We must bear in mind that the notion that there is one best way to motivate men to improve on their performance is not tenable. Rather, there are a number of such ways. The following are other strategies that could be undertaken to attain and sustain peak performance in sports and games.

Goal Setting

In order to attain and sustain peak performance in sports and games, the individual sport person or the team must set targeted goals for themselves. This act of setting goal is a means of achieving psychological boost and a motivating factor towards achieving peak performance. In general discussions in sports psychology, goal setting has received some attention and its use has been supported by personal trainers and popular fitness magazines (Williams, 2001). Goal setting as attaining a specific standard of peak performance on a task, usually within a specified time limit can increase performance during competition. Locke, Shaw, Saari, and Gary (1981) indicated that goals setting influence performance by directing attention, mobilizing effort, increasing persistence, and motivating strategy development. Goals are like magnet that attracts players to higher ground and new horizons. It gives focus to the eyes, an aim to the mind, and a purpose the strength of the individual (Raedeke, 2008).

Imagery/ Mental Rehearsal

Another relevant strategy that can be used to attain peak performance in sports and games is imagery. Imagery is the use of all senses to re-create or create an experience in the mind. This system helps players to perform better and increase self-confidence (Rathanakoses, et. al., 2009). Trainers reported that their frequent use of imagery has a significant relationship with positive training behavior (Gammage, Hall, & Rodgers, 2000; Vealey & Greenleaf, 2001). Imaging a sport skill is similar to performing the skill, except that players experience the action only in their mind. Similarly, Omar-Fauzee, Daud, Abdullah, and Rashid (2009) also claim that imagery was used as the method in which people feel themselves and through their minds. They can imagine themselves and such imagination can spur them to learn and improve on their skills. Studies showed the

effect of mental imagery on the enhancement and attaining peak performance (Jones & Stuth, 1997). In other words, imagery as an element of sport psychology skill or mental training tool can be useful for the success of players and to enhance prolong physical performance especially during competition.

Most of the methods used to increase performance of a given task involve the individual mentally rehearsing the motor skill or strategy intended for training or for the event. Cohn (1990) has reviewed much theoretical and practical research citing mental rehearsal as an effective tool for performance.

The theoretical support for mental rehearsal comes from a variety of sources such as the Schema Theory which was developed by Schmidt (1975, 1976) who described performance as being primarily controlled by central structures with minimal input from sensory information that stores pre-programmed commands in the form of generalized motor patterns that are retrieved and executed upon demand. However, these commands, once executed, especially during quick movement, requires an almost absence of sensory information, otherwise, disruption of the motor pattern becomes inevitable and execution malformed.

Another relevant theory on ways to increase performance of a given task is the Stages of Motor Learning. Much like Schema Theory, Fitts (1964), and Fitts and Posner (1967) describe the stages of motor learning as:

- a) The cognitive phase, i.e., consciously learning a new skill.
- b) The associative phase, i.e., making minor adjustments to the newly learned skill in striving for perfection, and
- c) The autonomous phase, i.e., the newly learned skill is capable of being executed unconsciously.

Another method is the Set Hypothesis: This hypothesis proposes that before a successful motor skill can be executed a specific internal state is necessary for optimal conditions of activation (Nascon & Schmidt, 1971)

Self-Talk

One of the mental skills that researches have been conducted in the mental training domain is self-talk (Burton & Raedeke, 2008; Vealey, 2007; Williams, 2001). Typically, self-talk has been defined as occurring anytime one thinks about something (Gammage, et al., 2001). On the other hand Self-talk is defined as:

- (a) Verbalizations or statements addressed to the self.
- (b) Multidimensional in nature.
- (c) Having interpretive elements associated with the content of statements employed.
- (d) Is somewhat dynamic; and
- (e) Serving at least two functions, instructional and motivational, for the players (Edwards, Tod, & McGuigan, 2008).

Self-talk can also be defined as occurring verbalizations or statements about something as well as increase performance and skills in sports (Howland, 2006; Vealey, 2007). Researchers have found that self-talk enhances performance and skills in sport (e.g., Hardy, 2006; Hardy, Hall, & Alexander, 2001). Influences on vertical jump, male Rugby union players (Edwards, et al., 2008), Affects Female Youth Soccer Performance (Johnson Hrycaiko, Johnson, & Halas, 2004). Furthermore, Vealey (2007) suggested that creative self-talk is also effective for using strategy, psyching up emotion and effort, relaxation and calming down, attention focusing, maintaining self-confidence and self assessment. In this type of mental training, players make their feeling and perception clear, evaluate themselves, and give themselves instructions or reinforcement.

Mental Flow

Flow is theoretically described as an optimal mental state (Csikszentmihalyi, 1990), and therefore flow is expected to be associated with optimal performance as well as providing an optimal human experience (Jackson, Thomas, Marsh, & Smethurst, 2001). In the sport psychology literatures, flow has generally been associated with peak performance states (Jackson, Kimiecik, Ford, & Marsh, 1998; Jackson & Roberts, 1992). Less-proficient sport men and women may be helped and encouraged to learn, refine, and practice mental skills and strategies aimed at gaining personal control of weak states and improving psychophysical conditions that make performance easy. For this purpose, sport psychology consultants have developed and applied a remarkable number of mental training programs across a range of individual and team sports (Bertollo, et al., 2009). Applied sport psychology has predominately utilized cognitive behavioural methods to help players achieve ideal performance states primarily through self-regulation strategies (Whelan, Mahoney, & Meyers, 1991).

The highest level of intrinsic motivation is known as flow. Flow is typified by complete immersion in an activity to the point that nothing else seems to matter. Hungarian psychologist Professor Mihaly Csikszentmihalyi has led much of the work in this exciting area, which has intrigued sport psychology researchers in recent years. Flow occurs when there is a perfect match between the perceived demands of an activity and the perceived ability to meet the demands. During flow, you lose self-consciousness and become one with the activity. This creates a state in which you are intrinsically rewarded by the movement patterns involved. Flow is seen as the ultimate experience among the sporting community. Many athletes and coaches refer to flow as being "in the zone," "on song," or "in the groove."

It is an optimal psychological state and a deeply pleasurable experience.

Flow Tip 1: Create an Immersion Effect

Sit down in a place where you are unlikely to be disturbed. Close your eyes and take a few long, slow, deep breaths, inhaling through your nose and exhaling through your mouth until you feel completely relaxed. Recall a time when you were performing at the very peak of your ability, when everything just seemed to click into place. Spend a few minutes trying to recall every detail about that experience. When the experience feels really lifelike and you are entirely immersed in it, open your eyes and write down everything that characterized it: how you felt inside, what you were thinking, how other people were reacting to your movements, how you were controlling the environment, and so on.

Likely, your mind was completely clear and you were focused entirely on the task at hand. Using your checklist, recall the feelings associated with peak performance and flow just prior to your next performance. Engaging in this process will enhance the likelihood of your entering a flow state.

Flow Tip 2: Plan and Chart Progress

We noted earlier how important it is to have clear goals. It is now widely recognized that the most effective way to set goals is to have some overarching objectives (e.g., winning an Olympic medal) that are underscored by numerous medium-term and short-term process goals. It is no coincidence that the secret to entering flow is to immerse yourself in the process of your activity. Over time, persistent focus on the process brings about successful outcomes such as winning Olympic gold medals. By process, we are referring to the nuts and bolts of your discipline-mastering the skills, working on your mental toughness, and attaining appropriate fitness levels. We suggest that you keep a training or activity diary in which you list your major goals on the first page and strategize, review, and monitor your progress from day to day, week to week, and month to month on subsequent pages. Be sure to adjust your initial goals if they turn out to be either unrealistic or too easy. Many athletes like to check off goals achieved as they progress through each week because this gives them a sense of accomplishment. The next time you go into a training session, be sure to have recorded in advance exactly what you expect to achieve. Get into the habit of making brief notes before and after each training session to keep you firmly focused on the most important components of your performance. Don't just think it, ink it!

Flow Tip 3: Use Positive Self-Talk

Positive self-talk is one of the most tried and tested strategies among sport psychology interventions. It is used to maintain concentration and to induce optimal arousal. We use three types of self-talk in our work with athletes. The first type is known as task-relevant self-talk, and as the name suggests, it involves a focus on the task at hand. A professional boxer uses the statement: Guard up, chin down to reinforce his posture. The second type is known as mood-related self-talk, which should affect the way you feel. A female rugby player came up with Wham bam thank you ma'am! To encapsulate the ease with which she would dispossess her opponents of the ball. The third type is known as a positive self-affirmation statement. The most famous exponent of this type was the great Muhammad Ali, who told himself "I am the greatest" so many times that even his opponents became convinced of it.

Flow Tip 4: Seeing is believing

All great achievers in history are characterized by having a clear vision of what they wanted to achieve; as the old Chinese proverb goes, "If you chase two rabbits, you will catch neither." structured imagery, or visualization, is the key that will unlock your potential and turn your dreams into reality. Imagery allows you to see in your mind's eye

the outcomes you wish to bring about. By recreating these outcomes using multisensory images (sight, sound, touch), you greatly increase the chance of attaining superior performance because images program muscles. The more vividly you can create images and the better you engage each of your senses, the more effectively you will prime your muscles for superior performance. This holds true in all spheres of human achievement.

Relaxation

Relaxation acts as a technique to rid the muscles of disorder tension interfering with performance and help the rest of the body and mind. It is mostly used to promote confidence in the players' ability to lessen or decrease the effect of undesirable thoughts and feelings. Because the stressors which are usually present in sport often create physical tension, physical relaxation may be useful to players in managing their physical levels energy to allow them to perform well (Vealey, 2007). Burton and Raedeke (2008) observed that relaxation is to decrease unwanted muscular tension, reduce extreme activation of the sympathetic nervous system, and calm the mind by keeping it productively occupied. Researchers agreed that successful elite players regularly use relaxation technique to manage their physical energy. (Howland 2006; Neiss, 1988; Williams & Harris, 2001).

Psyching up/Motivation/Encouragement

This factor is definitely external to the individual but it has a wonderful influence on the performance. This method include, using some formal and non-formal gestures and actions to motivate, psyche up or encourage the performer. Such as gesture or action is usually portrayed by either the coach or the spectators in order to cheer up the players so that performance could be enhanced. According to Harris, (2001), negative internal states such as negative thoughts, emotions, and bodily sensations impede performance and that they must be controlled or reduced thereby promoting an increase in positive thinking and self-confidence. Accordingly, the increases in a positive internal state will result in an ideal performance state allowing the player to perform at his or her best (Hardy, Jones, & Gould, 1996).

Mindfulness

Mindfulness, a form of present-moment attention, is a tradition that is based on Eastern meditation principles. Mindfulness is defined as "the awareness that emerges through paying attention in a particular way: on purpose, in the present, and non-judgmentally" (Kabat-Zinn 1994:4). The use of mindfulness as a technique has become increasingly popular as a component of therapeutic interventions and has gained empirical support for the treatment of a variety of clinical conditions affecting sport fitness and performance. Following an empirical review of mindfulness interventions, Bear (2003) found that mindfulness can be effective in treating pain, stress, anxiety, depressive relapse, and disordered eating. Bishop et al. (2004) proposed that mindfulness involves two components: (1) the self-regulation of attention in the present-moment and (2) the openness, willingness, and awareness of experiences in the present-moment.

Avoiding Negative Internal States

Studies on performance enhancement in sport have also highlight the importance of avoiding negative internal disposition of the person. Such studies are primarily based on the assumption that avoiding negative internal states will result in increases in positive emotions and levels of confidence, subsequently enhancing performance (Hardy et al., 1996). This technique encourages the use of performance skills training with athletes to train them in control-strategies that will decrease or eliminate negative internal states in the hopes of achieving ideal performance states. Skills are taught to athletes such as goal setting, mental imagery, arousal control, self-talk modification, and pre-competitive routines to improve self-regulatory processes that will assist in achieving an ideal performance state.

Avoiding Task -Irrelevant Attention

Task-irrelevant attention can occur when there are increases in anxiety and reduced working memory capacity (Eysenck & Calvo, 1992). When cognitive anxiety and task irrelevant attention are present, there is often a disruption in the performance phase that will typically result in dysfunctional performance. Gardner and Moore (2007) suggested that task-focused attention (attention to external stimuli, options, and contingencies) is required to achieve an ideal performance state over self-focused attention (attention toward internal stimuli such as thoughts and emotions).

Avoiding un-necessary Worry

Worry is a common mal-adaptive behaviour which is usually cause by negative dispositions and which often influence peak performance in sport and games. In a study examining the relationship between maladaptive performance and worry, Santanello and Gardner (2007) found a significant positive correlation between being highly worried and optimal performance. In addition, experiential avoidance was identified as a partial mediator between maladaptive perfectionism and worry. According to Gardner and Moore (2006), perfectionism is considered a coping strategy that athletes use to reduce or escape from unwanted, negative internal states. Excessive worry or cognitive activity has been shown as a factor in the self-regulatory model that will most likely lead to dysfunctional performance.

Psychological Flexibility

According to Hayes, Strosahl, Luoma, et al. (2004) psychological flexibility, involves the ability to defuse from provocative or evocative private content, accept private experience for what it is, stay in touch with the present moment, differentiate a transcendent self from the contents of consciousness, make contact with valued life ends and build patterns of committed action in pursuit of those ends. (p. 60). Through psychological flexibility individuals can work towards living a values-driven life so that their actions are in service of their identified values. Individuals commit to moving forward toward their identified values and will overcome psychological barriers through defusion and acceptance and will

handle situational barriers with direct action (Hayes, Strosahl, & Wilson, 1999). Similarly, athletes can engage in behaviors for in the moment competition and behaviors that are working towards their identified performance values (Gardner & Moore, 2007).

Mindfulness-Acceptance Commitment Strategy

According to Gardner and Moore (2007) the MAC strategy 'promotes acceptance of one's internal experience, no matter what that might be, while at the same time focusing the performer on the contextually appropriate behavioral responses required to effectively navigate through life's ever-changing situations in order to fully engage in one's valued activities and achieve goals that really matter'. (p. 31). The semi-structured approach is organized into five components that include: psycho-education, mindfulness, values identification and commitment, acceptance, and integration and practice. The approach is based heavily on the acceptance-based behavioral interventions that have been found effective in treating clinical and nonclinical populations (Hayes, Follette, & Linehan, 2004). The first component of the MAC approach involves providing a theoretical rationale for using the MAC approach, establishing the purpose and goals of MAC and helping the athletes understand their performance experiences from the MAC perspective. The MAC approach teaches the athletes to maintain attention and poise without having to control their internal experiences. The educational process of the MAC approach should involve a discussion of self-regulatory processes and the athletes' previous attempts at regulating their internal experiences while performing. One of the goals of the MAC program is to help athletes develop the ability to allow naturally occurring experiences such as emotions and thoughts to be recognized as transitory aspects of the human experience. Mindfulness can be extremely useful in reaching this goal (Gardner & Moore, 2007).

Improving on Mental Skills Training

Most mental skills training techniques can be grouped into two basic categories, cognitive and somatic methods. Cognitive methods include mental rehearsal, mental imagery and visualization, visual-motor behavior rehearsal, and cognitive-behavior therapy. Somatic methods include biofeedback, progressive muscle relaxation and meditation. Although cognitive and somatic methods develop the psychological apparatus of the individual from different perspectives there is much overlap because of the nature of psycho-somatic function. Therefore, elements of each tend to permeate elements of all, but an explanation of a variety of approaches is useful to characterize the different aspects of human nature that contemporary psychology has undertaken to enhance the mental development of the athlete.

Mental Rehearsal

Cohn (1990) describes some of the practical implications of mental rehearsal from the theories extrapolated above. Depending upon the nature of the task (closed or open skill) and the skill level of the individual, the advantages of mental rehearsal are two-fold. First, mental rehearsal can be used to reinforce unconscious processes executing specific motor skills to increase skill efficiency. This is because conscious control of quick and/or complicated movements is too slow in their intervening power, and thus, contributes to disrupting, or destroying the intended movement. Secondly, initiation of a specific skill

requires specific psychological conditions for optimal performance, such as specific arousal and attention processes. Therefore, the motor skill component and the pre-skill, or pre-performance lead-up, need to be rehearsed for efficient execution. A similar study investigated the effects of self-recording (a technique of self-monitoring) on adherence to a tennis service routine (Moore & Lloyd, 1986). The results indicated that self-monitoring had improved adherence to service routines, with only slight but consistent improvements in serving accuracy. Another advantage of mental rehearsal is the absence of major physical exertion that the individual would have to perform under traditional physical training regimes. This can alleviate the risk of over training that is a constant source of anxiety amongst many amateur and professional athletes (Warr, 1996). Therefore, mental rehearsal has been demonstrated to be an effective tool to increase performance.

Constant Rehearsal, Practice or Training

Visuo-motor behavior rehearsal (VMBR) is an extension of mental imagery, in that, it combines the psychological aspect of generating the mental image with feedback from the performance of the physical skill (Lane, 1980). This method has been used successfully, especially with closed motor skills, in a number of sports including Karate (Weinberg, Seabourne, & Jackson, 1981), basketball (Gray & Fernandez, 1989; Onestak, 1997), racquet ball (Gray, 1990), tennis (Noel, 1980), and cross-country running, golf, track and field, gymnastics, and diving (Lohr & Scogin, 1998). VMBR involves three phases, first, an initial relaxation phase to retrieve a psychological state conducive for mental imagery, second, visualizing performance through various imagery techniques, and finally, performing the actual skill under realistic conditions. By repeating this process with the intended skill during training it is hoped that real-time feedback ensues between mentally coordinating the visualization and imagery component with actual performance, thereby, minor changes in either the skill, and/or the imagery process, can be maintained in parallel. The rationale behind VMBR is keeping mental imagery and skill performance closely associated in training, which should correspond to an increase in performance because the individual can fine-tune both processes simultaneously.

Biofeedback, Progressive Muscle Relaxation, and Meditation

To increase the level of self-awareness, that contributes to enhanced self-monitoring and self-regulation. Employment of somatic methods to improve performance begins with concentrating on physical sensation to heighten attention of the perception of movement or non-movement (Prentice, 1998). Often, to start the athlete focusing on thoughts and emotions can be difficult because of the subjectivity of experiential content, whereas awareness of bodily sensation can give a more objective sense of self. One approach in the somatic method is biofeedback, that is, employing various devices that amplify specific body functions for psychosomatic feedback (Prentice, 1998).

Biofeedback has been demonstrated to increase running economy in long distance runners by presenting the athletes, when treadmill training over a six week period, their heart rate (heart rate monitor) and ventilation (VO₂ spirometer) data (Caird, McKenzie,

& Sleivert, 1999). Treadmill running with additional electromyogram (EMG) data, used as a feedback treatment, demonstrated significant increases in running efficiency (Hatfield, Spalding, Mahon, & Slater, 1992). The three above mentioned biofeedback devices have also been used in various ways to increase performance in basketball free throw scores (Kavussanu, Crews, & Gill, 1998), mental skills training (Blumenstein, Bar, & Tenenbaum, 1997), arousal regulation (Gould & Udry, 1994), and especially anxiety reduction (Costa, Bonaccorsi, & Scrimali, 1984; DeWitt, 1980; Prapavessis, Grove, McNair, & Cable, 1992; Sahni, 1996) in athletes.

Though biofeedback appears to be an effective method of increasing performance, either directly through the applied task, as in running and free throwing, or indirectly through anxiety and arousal regulation, the biofeedback devices can be impractical and sometimes difficult to ascribe causes of results if two or more modalities are used (Petruzzello, Landers, & Salazar, 1991).

Another somatic modality similar to biofeedback is progressive muscle relaxation (PMR). Unlike biofeedback, PMR attempts to use the athlete's awareness of muscle contraction/relaxation sensations to derive degrees of self-awareness. This method has been successfully used in decreasing anxiety for optimal psychological states of performance (Khasky & Smith, 1999; Rasid & Parish, 1998) and pain tolerance (Broucek, Bartholomew, Landers, & Linder, 1993). PMR is performed by instructing the athlete to contract then relax specific muscles in a definite order. Normally, this starts with the facial muscles because of their role in gesture and expression of psychological states, and then progresses to larger muscles that have a lesser role in postural awareness. Depending on the sport and individual this sequence may change. For example, a weight-lifter may need to relax specific muscles not associated with the lifting movement to allow an energy efficient execution during performance. Conversely, an archer may need to focus on relaxing facial and upper extremity muscles to assist in concentration when pulling and releasing the arrow. However, PMR is often combined with biofeedback methods to enhance self-awareness during training that can be transferred to the competitive environment where biofeedback equipment is impractical.

Conclusion

It could be deduced from the foregoing that sports and games are important activities engaged by a large proportion of people in contemporary society. Due to this factor, sport psychologists and others scholars in related fields have devised various strategies that could be adopted to attain peak performance in the activities. Some of these strategies have been the focus of this paper. Several techniques have been highlighted as workable strategies that could assist sportsmen and women to attain and maintain peak performance in their respective activities. It must be noted however, that for serious sportsmen and women as well as effective sport administrators, attaining peak performance is not enough. Rather, peak performance must necessarily be sustained and for a long period of time!

Thanks for Listening.

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