CHAPTER I
INTRODUCTION

The Power of Imagination

What is the power of imagination? We shall create and recall experiences mentally. For example, an employee rehearses how she will ask her boss for a raise, imagining how she will dress in her most business like suit and stand confidently in front of the boss's large, mahogany desk, with its smell of beeswax polish. She hears herself speaking slowly, quietly, and clearly, listing her skills and accomplishments that merit increased remuneration. Or, yesterday's bridegroom remembers standing in front of the wedding quests in their brightly coloured, new outfits as he made his speech in a shaky and unusually throaty voice. He senses against how dry his mouth felt as he spoke. He recalls the words he used in welcoming the guests to the celebration, lauding the bride, and thanking emotional parents (hearing echoes of his mother sobbing happily). He relives the embarrassment he felt when he knocked over a tall champagne flute as he waved his hands excitedly, as if conducting his own speech. He feels the rap of his hand against the glass, hears the tinkle it made as it hit a saucer on its way down, and senses, the cool moisture of the champagne on the back of his hand. In fact, just from reading these descriptions you might be experiencing some of the sights, sounds, smells, and bodily sensations that these experiences evoked in others.
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Athletes frequently experience such mental episodes (e.g. Hall 2001; Martin, Moriz, and Hall 1999; Rotella, Boyce, Allyson, and Savis 1998; Rushall and Lippman 1998). Many sport performances generate detailed and precise image intentionally. A tennis player who is about to compete on the center court as Wimbledon might be able to generate a vivid image of the venue, picturing the dark-green walls, smelling the freshly mowed grass, and hearing the applause of the spectators as he moves around on that hallowed turf. He can feel the sensations in his muscles as he plays his shots powerfully and accurately. He sees his opponent stretching, struggling to reach the probing drives, and hears his gasps of frustration when his desperate effort results in yet another netted shot. Out Wimbledon star feels in control already! (Morris, Spittle and Watt, 2005)

Imagery is the mental creation or re-creation of sensory experiences that appear to the person imagining them to be similar to the actual event (Suinn, 1993). We constantly relive past experiences and imagine wished for events, in pictures, sounds, smells - in fact, with all our senses. We can also experience the same emotions as those that the real event generated, which can led to changes in physiological indicators such as heart rate, respiration, or muscle tension. In other words, an imaginary event can provoke real-life emotional and physiological responses.
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With practice, we can manipulate our imagination to preview upcoming events, as the tennis player did. We can review things that have already happened, sometimes intentionally but often when we would rather not, as in the example of the gymnast's unwanted imagery of her biggest disaster. We can "replay" these imagery experiences in real time (at the same speed that they occurred) or we can slow them down. And, as the gymnastics example shows, we can imagine only part of an event - although we would prefer it to be that part where we performed at our best! Taking full advantage of the amazing flexibility of imagery, we can zoom in on specific, aspects of the action or pull back to see more of what was happening around us or to observe the event from different angles. Similarly, we can focus on one sense modality, such as the kinesthetic sense, for example, how our fingers and wrist feel as we imagine bowling a leg-spin ball in cricket or pitching curve ball in baseball. Sometimes, especially when we consciously control the imagery, we call these experiences daydreams. On other occasions, they can be nightmares, such as when an athlete imagines missing the final shot that would have won the championship. The most important point to understand about imagery is anxiety, increase confidence, enhance endurance, speed recovery from injury or heavy exercise, and much more. (Morris, Spittle and Watt, 2005)
Power of Imagery

Imagination is terrifically powerful. By mentally rehearsing a routine before a major competition, athletes can prepare themselves to achieve their optimal performance when it counts most. By imaging playing at their peak, athletes can build their confidence for a match. Imagery can also help a performer through a tough injury layoff by shifting attention away from the injury onto the mental rehearsal of sport skills. Knowing that research supports the value of imagery for maintaining skill level when physical practice is not possible can help motivate an athlete during recovery. When physical practice is not possible such as, during travel, imagery can provide athletes with a way to practice. It allows them to review previous strokes or movements so they can correct errors. It is difficult to think of anything else that has as much potential to enhance or destroy not only performance outcomes but also the entire experience of sports.

Imagery: Definitions

The definition and conceptualization of the imagery construct in relation to sport remains an ongoing challenge for researchers and theorists. A recent resurgence in interest in the task is apparent; however, limited liaisons between the various investigative cohorts may restrict the formulation of accepted definitions of sport imagery constructs.
Within the field of cognitive psychology, descriptions of mental imagery lack consistency in terms of the features that constitute the process. The focus of each definition seems to vary depending on the purpose for which the imagery description is used.

Unfortunately, many definitions of imagery derived from sport psychology literature have tended to focus on only limited aspects of this ubiquitous mental experience.

Moran (1993), in examining imagery assessment in sport, referred to two simple definitions of the term. The first, presented by Matlin (1989), described imagery as a procedure for mentally representing things that are not physically present. The second definition, developed by Solso (1991), described it as "a mental representation of non-present object or event". Moran (1993) extended these descriptions by emphasizing that imagery should include not only the visual sense but multiple sensory inputs. Such a belief contrasts with a tendency in areas of the sport psychology literature, even in relatively recent texts (Cox 1998; Wann 1997), in which the definition of imagery concentrates on the visual perspective only, through terms such as "visualization", "mental picture," or "the mind's eye" (Morris 1997). Hardy, Jones, and Gould (1996) avoided this problem by focusing on the sensorial nature of imagery, describing the term "as a symbolic sensory experience that may occur in any sensory mode". Murphy (1994) proposed
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a definition that highlighted the memorial aspects of the process, suggesting that it relied on the recollection of stored sensory experiences, which may be recalled in the absence of external stimuli. Although these definitions provide a basic foundation for describing the process, they have tended to oversimplify a complex concept of substantial importance within sport psychology.

Denis (1985) formulated a definition that highlighted the dynamic and creative properties of images:

“Imagery is a psychological activity which evokes the physical characteristics of an absent object (either permanently or temporarily absent from our perceptual field). It is worth emphasizing here that imagery is not restricted to recollection of the appearance of static objects, but it extends to moving objects, objects undergoing transformations, in other words, to dynamic events. The scope of imagery is not limited to recalling objects or events that have been perceived in the past (recent or distant past), but imagery also refers to objects or events that have not yet been accomplished. Imagery allows people to anticipate future (or even purely theoretical) events.”

Mental practice, according to Corbin, is the "repetition of a task, without observable movement, with the specific intent of learning"
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(1972, 94). Mental practice may not use imagery at all; it could include non image-based strategies such as verbal rehearsal or self-talk.

Within an applied sport psychology context, Suinn (1976a, 1983, 1993) used the term "Imagery" in relation to his procedure known as visuomotor behaviour rehearsal (VMBR):

The imagery of visuomotor behaviour rehearsal apparently is more than sheer imagination. It is a well-controlled copy of experience, a sort of body-thinking similar to the powerful illusion of certain dreams at night. Perhaps the major difference between such dreams and VMBR is that the imagery rehearsal is subject to conscious control. (Suinn 1976a).

Recently, Simons (2000) presented an excellent analysis of the process of using imagery as a psychological-skills training technique. The information relevant to his definition of imagery emanated from his conclusions about the manner in which athletes imagine. Simons described the process as follows:

Imagery is intriguing for its close relationship to perception and action. It is such a rich memory system, matching the complexity of information presented by the environment and contained in the execution of motor skills. Images bind personal thoughts and emotions to experience, and they have qualities far beyond simple stimulus /response propositions…. 
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Imagery can be creative, allowing one to experience attitudes and actions mentally in ways that have not yet been encountered in real performance.

Working Definition of Sport Imagery

For the purpose of this study, it seems appropriate to select a complete definition of sport imagery to aid in interpreting and evaluating the theory and research presented. The following definition by Morris and Watt (2005) complies specific elements of relevance from the definitions of Richardson (1969) and Denis (1985), the conceptualizations of Suinn (1976a, 1983, 1993) and Vealey and colleagues (Vealey and Walter 1993; Vealey and Greenleaf 1998, 2001), and the applied interpretation of Simons (2000). Emphasizes the nature of mental imagery in relation to involvement in sport.

Imagery, in the context of sport, may be considered as the creation or re-creation of an experience generated from memorial information, involving quasi-sensorial, quasi-perceptual, and quasi-affective characteristics, that is under the volitional control of the imager, and which may occur in the absence of the real stimulus antecedents normally associated with the actual experience.

A review of several other recent conceptualizations reveals the researchers' efforts to generate a suitable framework from which to explore
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how imagery operates in sport. Conceptualizations such as sport imagery use, PETTLEP, and imagery content models represent viable representations that further research will refine and confirm. The Murphy and Martin (2002) model of imagery in sport establishes a base from which to categorize theories and evidence about the imagery's operation and involvement in athletic performance.

Efforts to extend the explanation of the imagery construct within sport psychology are progressing positively. For a long time, too few theorists were prepared to propose definitions or construct models. Thus, perhaps undeservedly, they sustained the misconception that describing imagery was too difficult a task. Although the various conceptualizations reflect a reasonable degree of divergence, increased information sharing and interaction between research groups should lead to a more succinct set of descriptors for sport imagery.

The structural conceptualization underlying measures of imagery ability and imagery use has varied considerably. There are unimodal, unidimensional tests such as the VVIQ, VMIQ, and GTVIC; multimodal, unidimensional questionnaires such as the SQMI, and MIQ; and multi scale measures of imagery use such as the SIQ.
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Imagery is a powerful and useful psychological tool that can be applied for various purposes in sport and exercise. Although we have described some of those potential applications, many more uses than we can imagine probably exists. The applications we discussed include skill learning and practice, development and practice of tactical skills, competition preparation and performance, improvement of psychological skills, and coping with injury and heavy training.

A great deal of research effort has been dedicated to understanding imagery and its application in sport situations. The results have generally supported the view that imagery can produce changes in physical performance and in psychological variables that may affect sport performance. Various factors, such as imagery speed and content, have been suggested as influences on the efficacy of imagery. How much imagery is optimal to bring about changes in performance is still an important research question.

Imagery Research

Imagery perspectives and modalities appear to be important considerations in using imagery effectively in sport. Imagery modalities (visual and kinesthetic) can be differentiated and may provide discrete information. Research on visual and kinesthetic imagery suggests that both
are important in sport and their effectiveness may be related to the purpose of imagery (e.g., motivation or confidence) or the type of sport skill being learned or performed. Similarly, the research on imagery perspectives suggests that the purpose of imagery (e.g., motivation or confidence) or task being imagined (e.g., open or closed, form based or nonform based) is important in the efficacious use of perspectives. A general conclusion about imagery modality and imagery perspective is that imagery is beneficial to the extent that it adds useful information to the movement experience (Hardy, 1997). Since it is likely, that visual and kinesthetic imagery is beneficial to the extent that, it adds useful information to the movement experience (Hardy, 1997). Since it is likely that visual and kinesthetic imagery and internal and external imagery provide different information about a movement experience, practitioners are advised that an effective approach to imagery might be to combine modalities and perspectives. In other words, using both modalities and both perspectives is often better than using only one perspective and modality, as they allow athletes to gain as much information as they can about a movement experience and makes imagery maximally effective.

Because it is one of the most common tools used by sport psychologists, imagery has been the subject of many research investigations. The foremost question that sport psychology researchers have sought to
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answer is "Does imagery work?" If imagery is effective, then it would be valuable to know which factors may enhance or detract from the efficacy of the process. From a practical perspective, knowing the optimal amount of imagery that is needed to bring about changes in performance would be helpful.

A synthesis of research that has focused on imagery and sports performance has substantiated the influences and effectiveness of imagery in sport.

Most imagery research has concerned the effect of the cognitive rehearsal of sport skills on subsequent performance (Hall 2001). Early meta-analyses (Feltz and Landers 1983; Hinshwa 1991) concluded that mental practice was more effective than no practice for improving subsequent performance of motor skill. In Hinshaw's meta-analysis, the overall effect size for mental practice over no practice was 0.68 (SD=11).

Imagery is not superior, however, to physical practice for increasing motor-skill performance (Hird, Landers, Thomas, and Horan 1991). The research of Hird et al. showed that physical practice was the most effective for improving performance on pegboard and pursuit motor tasks. Combinations of physical and mental practice were progressively less effective with decreases in physical practice and increase in mental practice.
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Imagery is a powerful and useful psychological tool that can be applied for various purposes in sports and exercise. Potential applications of imagery include skill learning and practice, development and practice of tactical skills, competition preparation and performance.

Probably the best known use of imagery is for practicing a particular sport skill. Athletes practice putting a golf ball, executing a takedown in wrestling, throwing the javelin, doing a routine on the balance beam or swimming the back stroke, all in their minds. You can practice skills to fine tune them or you can pinpoint weaknesses and visualize correcting them. Imagery can also be used to practice and learn new strategies or review alternate strategies for either team or individual sports.

The focus on imagery uses so far has been on performance related aspects of sport, but imagery can also influence an athlete’s psychological state. It can enhance psychological skills such as concentration, self confidence, motivation, attention, and anxiety control.

Imagery can help athletes focus attention and regain focus when they become distracted. To help focus attention athletes can imagine relevant aspects of the upcoming performance. This narrows focus to those relevant aspects and limits the impact of irrelevant cues. To learn to remain focused during performance athletes could imagine the upcoming performance and
all the potential distracters that might be present and developed coping strategies to deal with them before they become a problem. Athletes also need to be able to refocus their attention if they are distracted or if something goes wrong. They can imagine themselves in the situations in which they often lose concentration, and then imagine being composed and focused on the game. By imagining what they want to do and how to do it, they may remain more focused on their performance.

Imagery can also be used to increase or decrease arousal. For instance, scenes that “pump up” a player, such as playing aggressively in front of a crowd might be used prior to a game to increase arousal. Alternatively, imagining a successful performance, relaxing scenes (such as a peaceful place) or muscular tension floating out of the body reduces feeling of anxiety. Imagery can also help athletes cope successfully with problems or situations that might provoke anxiety by allowing them to create plans for dealing with these situations and imagine using those plans successfully.

Imagery has been widely suggested as a means of enhancing self confidence. Images that create feelings of competence and success, such as performing well or executing skills correctly increase an athlete’s confidence.
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Imagery is a fascinating device for influencing thoughts, affective states, and behaviors in sport and exercise, and its application is limited only by our imagination and creativity.

Imagery is a ubiquitous process that most people experience almost all the time. In sport and exercise, imagery has many functions, which had led to a great deal of research. Unfortunately, much of that research has not been systematic; often, it is as if we have opened the door and glanced into another room, then another. We need to identify the most critical issues relating to the imagery process in the context of sport and exercise and establish major research programmes to study them in detail.

Majority of imagery studies on skill and performance of athletes have concentrated on individual events and more specifically on closed skills like golf, shooting etc. Furthermore, it seems that very few imagery intervention studies have been able to successfully consider the complexity of open and dynamic team ball sports. Studies in team ball sports have typically isolated one or several closed skills and used these as dependent variables, for example basketball players performing free throws (e.g., Shambrook & Bull, 1996) and soccer players dribbling, passing, and shooting, without any opponents present (Blair, Hall, & Leyshon, 1993).

In this study the investigator tries to analyse the effectiveness of imagery intervention on a team sport like volleyball, with emphasis on
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psychological variables as well as skill performances during the game situations. Moreover, the researcher himself, being a volleyball player, and volleyball being a popular game in the Malabar region of Kerala, it seemed justified that undertaking such a study would be beneficial in improving the psychological build of the players and thereby improvement in performance.

Objectives of the study

The present study on imagery intervention programmes on psychological variables and skill performances of volleyball players was undertaken with the following objectives:

1. To examine the effectiveness of mental imagery as a potential tool for psychological preparation of volleyball players.

2. To find out the effectiveness of three weeks mental imagery intervention programme on selected skill performances variables of volleyball players.

3. To find out the effectiveness of mental imagery intervention programme for the total duration of twelve weeks on selected psychological variables of volleyball players.
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4. To find out the effectiveness of mental imagery intervention programme for the total duration of twelve weeks on selected skill performances of volleyball players

5. To assess the effectiveness of mental imagery intervention programme on selected psychological variables and skill performances for elite and novice volleyball players.

Statement of the Problem

The present study is titled “Effect of Mental Imagery Training Programme on Selected Psychological Variables and Skill Performances of Volleyball Players”.

Delimitations

The study was delimited to the following aspects:

1. The study was delimited to only three weeks duration of mental imagery training programme for each of the selected skill.

2. The total duration of the mental imagery intervention for all the selected four skills was delimited to twelve weeks.

3. The study was confined to 60 male volleyball players; 30 elite performers and 30 novice performers from North Kerala.
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4. The age group of the subjects in this study was delimited to 17 years to 25 years.

5. The study was delimited to the assessment of the following variables only.

Psychological Variables

1. Cognitive Anxiety
2. Somatic Anxiety
3. Self confidence
4. Attention.

Skill Performance Variables

1. Serve
2. Pass (service reception)
3. Attack/ Spiking
4. Block

Limitations

The following limitations were recognised for the present study:

1. The individual variations in imagery ability of the subjects, which might have affected the study results, may be considered as limitation of the study.
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Hypotheses

The present study was undertaken with the following hypotheses:

(i) There would be significant effect for the three weeks mental imagery intervention programme on selected skill performance variables namely, serve, pass (service reception), attack and block of volleyball players.

(ii) There would be significant effect for the mental imagery intervention programme on selected psychological variables namely, cognitive anxiety, somatic anxiety and self confidence and attention of volleyball players.

(iii) There would be significant effect for the imagery intervention programmes for all the four skills (three weeks each) for the total duration of twelve weeks on selected skill performances variables namely, serve, pass (service reception), attack and block of volleyball players.

Definition of Key Terms

Operational definition of key terms involved in the study is explained below in order to have clarity about the study.

Mental Imagery

Imagery is defined as “An experience that mimics real experience, we can aware of seeing an image, feeling movements as an image, or experiencing an image of smell, tastes, or sounds without actually experiencing the real thing” (White and Hardy, 1998).
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“Imagery, in the context of sport, may be considered as a creation or re-creation of an experience generated from memorial information, involving quasi-sensorial, quasi-perceptual and quasi-affective characteristics, that is under the volitional control of the imager, and which may occur in the absence of the real stimulus antecedents normally associated with the actual experience” (Morris Spittle and Watt, 2005).

For the purpose of the present study the definition by Morris Spittle and Watt, (2005) is more acceptable.

Cognitive Anxiety

Cognitive anxiety is the mental component of anxiety and is caused by negative expectations about success or by negative self-evaluation (Martens et al, 1990).

Somatic Anxiety

Somatic anxiety refers to the physiological and affective elements of the anxiety experience that develop direct autonomic arousal. (Martens et al., 1990).

Attention

Attention is the term used to describe the process whereby an individual uses his or her senses to perceive the external environment (Roberts, 1986).
Self Confidence

Refers to the degree of certainty athletes possess about their ability to be successful in sport (Vealy, 1986).

Significance of the Study

In sport psychology, there is considerable research that supports the use of mental skills training programmes for improving sport performance. Mental strategies in general have shown to improve the psychological attributes favourable to performance among athletes, and this area has received considerable attention in research as well as competitive situations.

Numerous studies have reported that athletes experience their best sporting performances when they plan and execute mental strategies prior to competition. For instance, Olympic wrestlers have claimed to have their best performances in matches after using mental preparation techniques (Gould et al., 1992), and golfers report more self-confidence in tournament play after cognitive reinforcement strategies are employed prior to their matches (Cohn, 1991).

One psychological skill in particular, mental imagery has received much attention for its role in athletic performance and is often included in psychological skills training packages given to athletes to complement their regular training programmes. Hall (2001) has even suggested that imagery
for the rehearsal of skills should be treated similar to physical practice given that research has suggested a functional equivalence between the two activities (Gabriele et al., 1989; Holmes and Collins, 2001). More specifically, it has been suggested that imagery and the preparation and execution of autonomous, overt motor performance relate to the same mental representation system (i.e. Decety and Grèzes, 1999). Given the potential influence of imagery interventions in sports, the present investigation on the effect of imagery interventions on selected psychological variables and skill performances of volleyball players will be significant in the following ways:

1. The study will reveal the effect of mental imagery training programme on psychological and skill performance aspects of volleyball players.

2. The study will be an eye opener for further research on imagery modalities on team events and open skilled sports.

3. The study will provide knowledge in the area of psychology with special significance on mental rehearsal and mental imagery.

4. The study will be of benefit to coaches and physical education teachers in mental preparation of volleyball teams for competition.